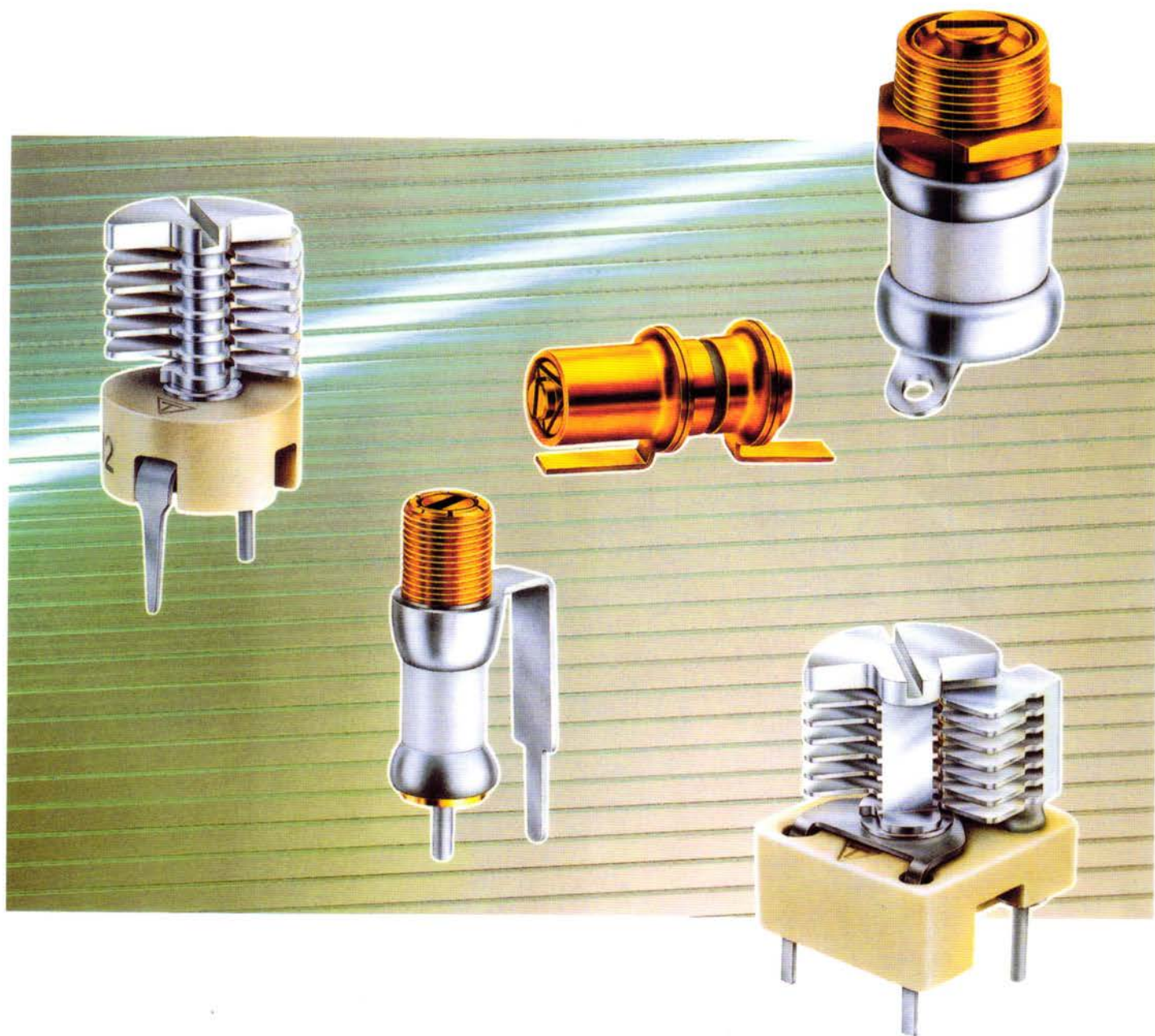




TRONSER TRIMMER

トロンサー社 トリマーコンデンサ

ショートフォームカタログ 2008



CHRONIX



TRONSER TRIMMER

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アルフレッド・トロンサー GmbH

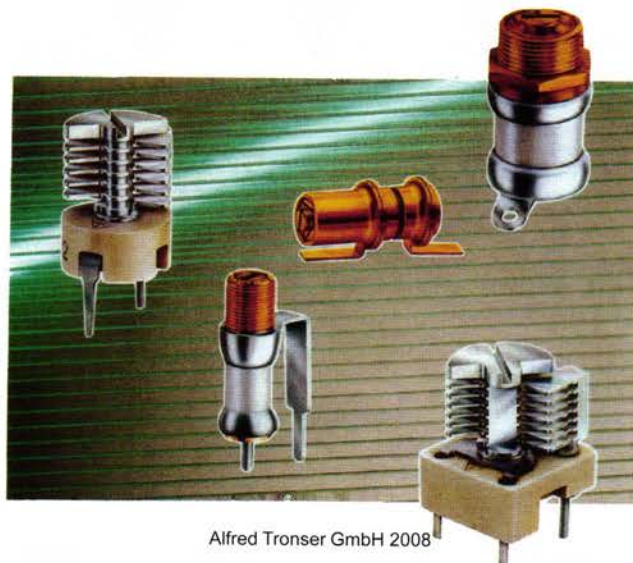


... インダストリアル電子機器用



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クロニクス - テクニカル・セミナー 2008

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アルフレッド・トロンサーGmbH社によるプレゼンテーション

会社と製品

1. アルフレッド・トロンサーGmbH -
 - 歴史
 - 現在の組織
 - 主な製品ライン
 - 主なマーケットとカスタマ
 - 将来の展開
2. 製品ライン - 種類とアプリケーション
 - 2.1 エアー・プレート・トリマ・キャパシター
 - 2.2 エアー・チューブラ・トリマ・キャパシター
 - 2.3 サファイア・トリマ・キャパシター
 - 2.4 マイクロウェーブ・チューニング・エレメント
 - 2.5 精密機械加工コンポーネント
 - 2.6 生産能力とサービス
3. 質疑応答 - ディスカッション

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3



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アルフレッド・トロンサーGmbH

会社の歴史

- 1951 - アルフレッド・トロンサーにより設立
- 1956 - エアープレートトリマー機械加工の最初の特許取得
- 1963 - エンゲルスブランドの初の自社ビルに移動
- 1978 - 米国子会社 Trim-Tronics, Incを設立
- 1990 - 新事務所・開発棟に移動
- 1994 - マイクロウェーブ・ハウジング生産開始
- 1998 - 800 m² の工場拡張
- 2001 - 3,000 m² の工場拡張
- 2004 - 米国Tronser社にてパーツの生産を開始
- 2005 - CNCパンチング・マシンを購入
- 2006 - 機材の追加のため150万€の投資

4



TRONSER TRIMMER
for professional electronics

- 生産部門の面積: 6000 m²
- ドイツ本社に110名の職員
- 米国の子会社に15名の職員
- 50カ国以上に輸出
- 製品の 50 % 以上を輸出
- 50台の CNC 旋盤
- 40 台のスイス型機械式スクリーマシ
- 高速スピンドルのある 15の加工センター
- 社内にあるメッキ部門
- 最先端の CAD/CAM システム
- インジェクション成型機
- Johannes 、 Michael Tronser両名による個人経営

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アルフレッド・トロンサー GmbH社 製造プログラム

- エア・プレート・トリマ・キャパシター
- エア・チューブラ・トリマ・キャパシター
- サファイア・トリマ・キャパシター
- マイクロウェーブ・チューニング・エレメント
- チューン処理・フィルタ・カバー
- 精密旋盤加工パーツ
- 精密成型パーツ

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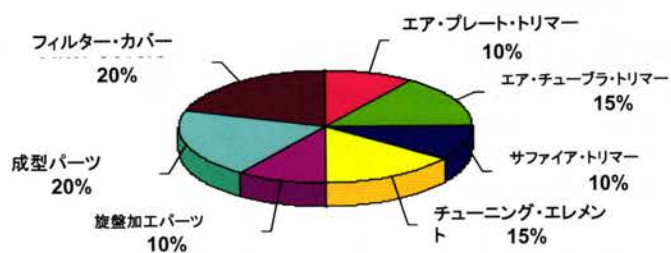
7



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製品の供給



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アルフレッド・トロンサー GmbH

主要なマーケット

- テレコム、ワイアレス、携帯電話、無線通信
- メディカル・エレクトロニクス、NMR イメージングシステム、分光学
- 高周波・マイクロウェーブ試験装置
- オートモービルエレクトロニクス、距離レーダー、ACC
- 産業用制御系、空気圧機器、水力装置

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アルフレッド・トロンサー GmbH社

主要顧客

- Agilent
- Alcatel (アルカテル)
- Andrew
- Ericsson (エリクソン)
- Powerwave
- Hewlett-Packard (HP社)
- Kathrein
- M/ACOM
- Marconi (マルコーニ)
- Motorola (モトローラ)
- Nokia (ノキア)
- Rohde & Schwarz
- Siemens (ジーメンス)
- Thales



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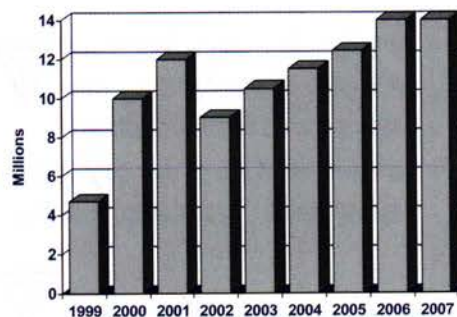
アルフレッド・トロンサー GmbH 年間売上げ

年間総売上げ

1999 - € 4.7 百万
2000 - € 10 百万
2001 - € 12 百万
2002 - € 9 百万
2003 - € 10.5 百万
2004 - € 11.4 百万
2005 - € 12.3 百万
2006 - € 14.1 百万
2007 - € 14.5 百万



Annual Sales in €



Alfred Tronser GmbH 2008

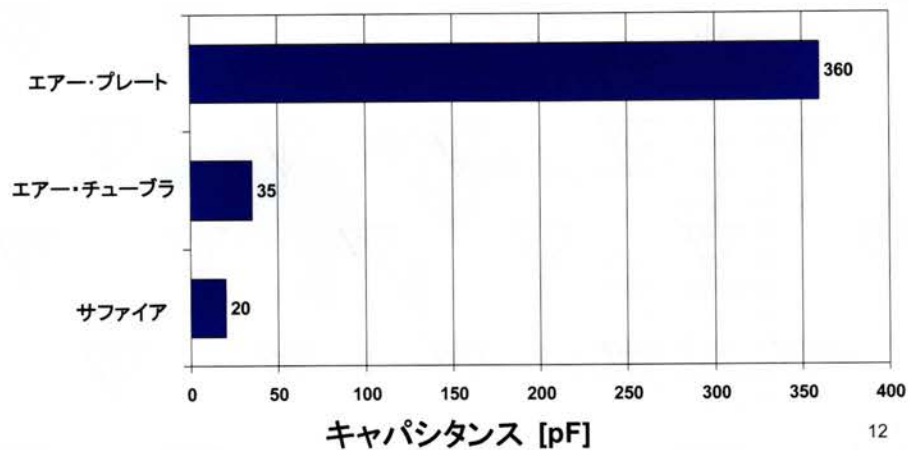
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TRONSER TRIMMER

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キャパシタンス・レンジ



12



TRONSER TRIMMER

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Tronser Sapphire Trimmers

Type	C min pF	C max pF	Q-Factor @ 200 MHz	T.C. $\times 10^{-6}/^{\circ}\text{C}$	A mm ± 0.1	B mm ± 0.1	Weight g	Tuning Screwdriver Order No. 705-0080
66-0301-00002-000	0.4	2.5	>4000	0 $\pm$ 50	2.3	5.8	0.26	
66-0301-00004-000	0.6	4.5	>3000	0 $\pm$ 50	3.8	8.0	0.34	
66-0301-00008-000	0.8	8.0	>2000	0 $\pm$ 50	6.4	12.3	0.49	
66-0331-00002-000	0.4	2.5	>4000	350 $\pm$ 75	2.3	5.8	0.26	
66-0331-00004-000	0.6	4.5	>3000	350 $\pm$ 75	3.8	8.0	0.34	
66-0331-00008-000	0.8	8.0	>2000	350 $\pm$ 75	6.4	12.3	0.49	
66-0302-00002-000	0.4	2.5	>4000	0 $\pm$ 50		5.8	0.25	
66-0302-00004-000	0.6	4.5	>3000	0 $\pm$ 50		8.0	0.32	
66-0302-00008-000	0.8	8.0	>2000	0 $\pm$ 50		12.3	0.47	
66-0332-00002-000	0.4	2.5	>4000	350 $\pm$ 75		5.8	0.25	
66-0332-00004-000	0.6	4.5	>3000	350 $\pm$ 75		8.0	0.32	
66-0332-00008-000	0.8	8.0	>2000	350 $\pm$ 75		12.3	0.47	
66-0303-00002-000	0.4	2.5	>4000	0 $\pm$ 50	2.0	5.8	0.31	
66-0303-00004-000	0.6	4.5	>3000	0 $\pm$ 50	3.2	8.0	0.39	
66-0303-00008-000	0.8	8.0	>2000	0 $\pm$ 50	6.4	12.3	0.53	
66-0333-00002-000	0.4	2.5	>4000	350 $\pm$ 75	2.0	5.8	0.31	
66-0333-00004-000	0.6	4.5	>3000	350 $\pm$ 75	3.2	8.0	0.39	
66-0333-00008-000	0.8	8.0	>2000	350 $\pm$ 75	6.4	12.3	0.53	
66-0304-00002-000	0.4	2.5	>4000	0 $\pm$ 50	2.0	5.8	0.28	
66-0304-00004-000	0.6	4.5	>3000	0 $\pm$ 50	3.8	8.0	0.36	
66-0304-00008-000	0.8	8.0	>2000	0 $\pm$ 50	6.5	12.3	0.50	
66-0334-00002-000	0.4	2.5	>4000	350 $\pm$ 75	2.0	5.8	0.28	
66-0334-00004-000	0.6	4.5	>3000	350 $\pm$ 75	3.8	8.0	0.36	
66-0334-00008-000	0.8	8.0	>2000	350 $\pm$ 75	6.5	12.3	0.50	
66-0305-00002-000	0.4	2.5	>4000	0 $\pm$ 50		5.8	0.33	
66-0305-00004-000	0.6	4.5	>3000	0 $\pm$ 50		8.0	0.41	
66-0305-00008-000	0.8	8.0	>2000	0 $\pm$ 50		12.3	0.56	
66-0335-00002-000	0.4	2.5	>4000	350 $\pm$ 75		5.8	0.33	
66-0335-00004-000	0.6	4.5	>3000	350 $\pm$ 75		8.0	0.41	
66-0335-00008-000	0.8	8.0	>2000	350 $\pm$ 75		12.3	0.56	
66-0306-00002-000	0.4	2.5	>4000	0 $\pm$ 50	3.8	5.8	0.31	
66-0306-00004-000	0.6	4.5	>3000	0 $\pm$ 50	2.5	8.0	0.39	
66-0306-00008-000	0.8	8.0	>2000	0 $\pm$ 50	3.1	12.3	0.53	
66-0336-00002-000	0.4	2.5	>4000	350 $\pm$ 75	3.8	5.8	0.31	
66-0336-00004-000	0.6	4.5	>3000	350 $\pm$ 75	2.5	8.0	0.39	
66-0336-00008-000	0.8	8.0	>2000	350 $\pm$ 75	3.1	12.3	0.53	
66-0307-00002-000	0.4	2.5	>4000	0 $\pm$ 50	9.2	5.8	0.31	
66-0307-00004-000	0.6	4.5	>3000	0 $\pm$ 50	10.2	8.0	0.39	
66-0307-00008-000	0.8	8.0	>2000	0 $\pm$ 50	13.8	12.3	0.53	
66-0337-00002-000	0.4	2.5	>4000	350 $\pm$ 75	9.2	5.8	0.31	
66-0337-00004-000	0.6	4.5	>3000	350 $\pm$ 75	10.2	8.0	0.39	
66-0337-00008-000	0.8	8.0	>2000	350 $\pm$ 75	13.8	12.3	0.53	

All Sapphire Trimmers are available with Sealing Screw (Total Overall Length = B + 4 mm)

TECHNICAL DATA

Rotor	Gold-plated rotor electrode made of solid CuZn, or a pressed-on thick-walled Invar tube for improvement of temperature coefficient. Rotor contact over the entire rotor thread.
Stator	Gold-plated stator electrode made of CuZn with inserted mica disk.
Dielectric	Sapphire
Adjustment	From rotor side. The tuning torque is established through three vertical slots and expansion of the rotor thread.

ELECTRICAL, MECHANICAL AND THERMAL CHARACTERISTICS

Test Voltage	1000 VDC
Insulating Resistance	> 10 ⁶ MΩ
Contact Resistance	< 0.001 Ω
Tuning Torque	0.1 - 1 Nm
Stop Torque	1.5 Nm max.
Rotational Life	≥ 75 cycles, IEC 418
Vibration	60 g / 10 - 2000 Hz
Shock	100 g / 8 ms
Adjustment Accuracy	< 1 % of adjusted value

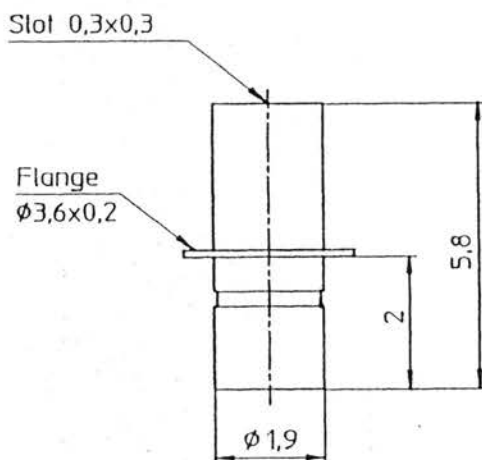


TRONSER TRIMMER

for
professional
electronics

DATE : 09.05.94
REVISION DATE : ---

66-02.1-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard TC_c 350 ± 75 ppm
- Improved TC_c 0 ± 50
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC ADJUSTMENT

Sapphire
Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL, MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^6 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	-65°C to +125°C

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^{\circ}C$	Permeability	Weight ca.g
66-0201-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0231-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0231-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

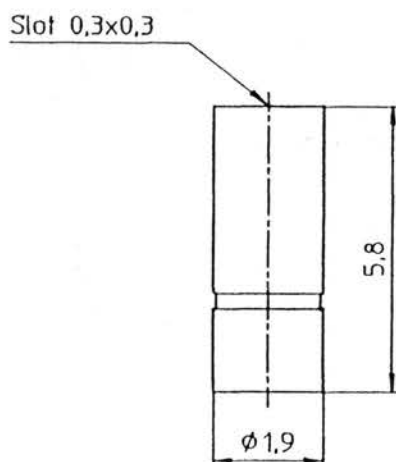


TRONSER TRIMMER

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DATE : 09.05.94
REVISION DATE : ---

66-02.2-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS	- Standard TC_c 350 ± 75 ppm - Improved TC_c 0 ± 50 - Non-magnetic : Permeability $< 1,0005$
DIELECTRIC	Sapphire
ADJUSTMENT	Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL, MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^6 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	-65°C to +125°C

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^{\circ}C$	Permeability	Weight ca.g
66-0202-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0232-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0232-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

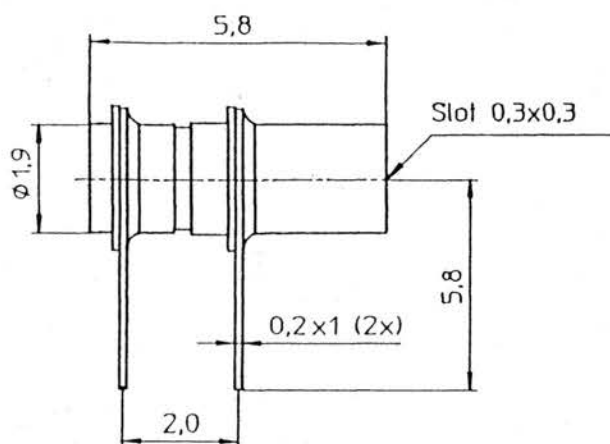


TRONSER TRIMMER

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professional
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DATE : 09.05.94
REVISION DATE : ---

66-02.3-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard TC_c 350 ± 75 ppm
- Improved TC_c 0 ± 50
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC ADJUSTMENT

Sapphire
Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL , MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^6 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	-65°C to +125°C

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^{\circ}C$	Permeability	Weight ca.g
66-0203-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0233-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0233-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

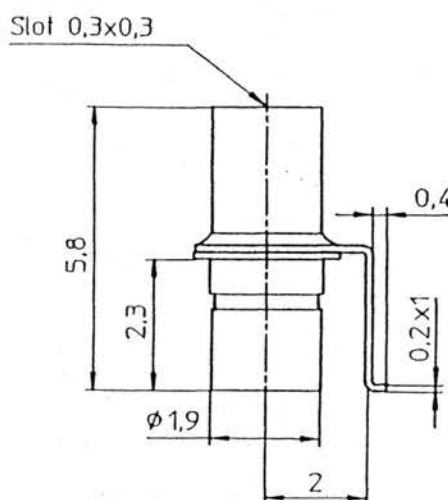


TRONSER TRIMMER

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DATE : 09.05.94
REVISION DATE : ---

66-02.4-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard TC_c 350 ± 75 ppm
- Improved TC_c 0 ± 50
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC ADJUSTMENT

Sapphire
Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL , MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^8 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	$-65^\circ C$ to $+125^\circ C$

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^\circ C$	Permeability	Weight ca.g
66-0204-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0234-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0234-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

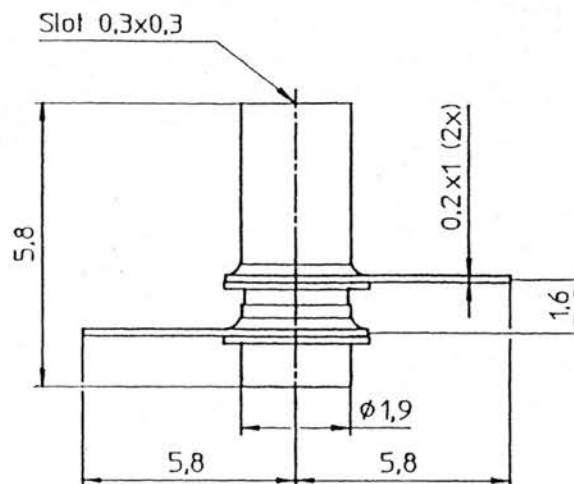


TRONSER TRIMMER

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DATE : 09.05.94
REVISION DATE : ---

66-02.5-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard TC_c 350 ± 75 ppm
- Improved TC_c 0 ± 50
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC ADJUSTMENT

Sapphire
Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of >6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL , MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^6 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	$-65^\circ C$ to $+125^\circ C$

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^\circ C$	Permeability	Weight ca.g
66-0205-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0235-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0235-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

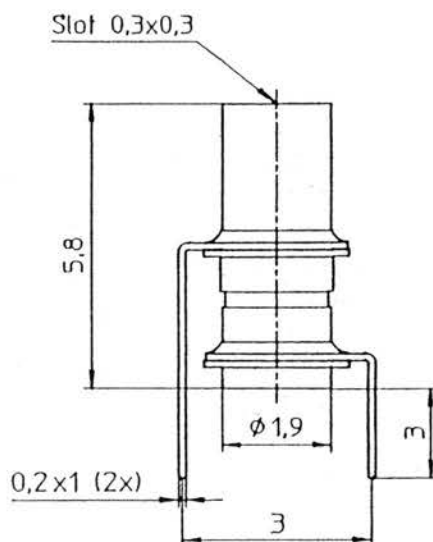


TRONSER TRIMMER

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professional
electronics

DATE : 09.05.94
REVISION DATE : ---

66-02.6-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard $TC_c 350 \pm 75$ ppm
- Improved $TC_c 0 \pm 50$
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC ADJUSTMENT

Sapphire

Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL, MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^6 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1.1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	-65°C to +125°C

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^{\circ}C$	Permeability	Weight ca.g
66-0206-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0236-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0236-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

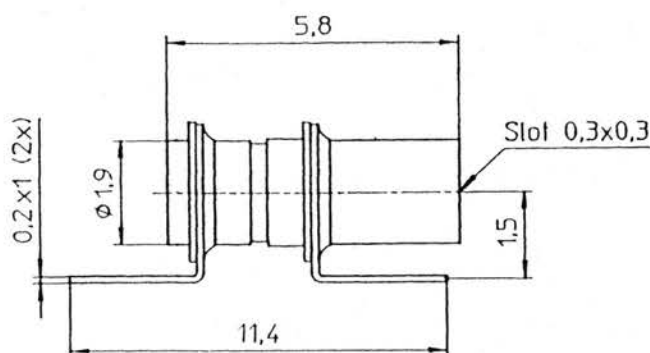


TRONSER TRIMMER

for
professional
electronics

DATE : 09.05.94
REVISION DATE : ---

66-02.7-00001-... MINIATURE SAPPHIRE TRIMMER



TECHNICAL DESCRIPTION

CONFIGURATIONS

- Standard $TC_c 350 \pm 75$ ppm
- Improved $TC_c 0 \pm 50$
- Non-magnetic : Permeability $< 1,0005$

DIELECTRIC

Sapphire

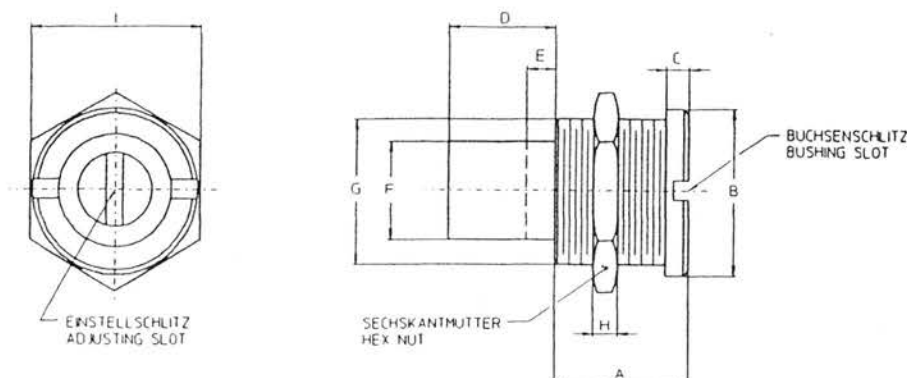
ADJUSTMENT

Tuning adjustment is accomplished by means of a fine-threaded rotor (pitch 0.2mm), providing an adjustment range of > 6 revolutions; a well-defined tuning torque is created through the utilization of a double-cross slotted rotor head which guarantees a high Q-Factor and low tuning noise.

ELECTRICAL, MECHANICAL AND THERMAL DATA

TEST VOLTAGE	1000 VDC
INSULATION RESISTANCE	$> 10^9 M\Omega$
CONTACT RESISTANCE	$< 0,001 \Omega$
TUNING TORQUE	0,07 - 0,7 Ncm (0.1 - 1.0 in.oz.)
STOP TORQUE	max. 0,8 Ncm (1,1 in.oz.)
ROTATIONAL LIFE	≥ 75 Cycles, IEC 418
VIBRATION	60 g / 10 - 2000 Hz
SHOCK	100 g / 6 ms
OPERATING TEMPERATURE	-65°C to +125°C

TYPE	C_{min} pF	C_{max} pF	Q-Factor @ 200 MHz	TC_c $\times 10^{-6}/^{\circ}C$	Permeability	Weight ca.g
66-0207-00001-000	0,3	1,2	> 5000	0 ± 50	---	0,15
66-0237-00001-000	0,3	1,2	> 5000	350 ± 75	---	0,15
66-0237-00001-600	0,3	1,2	> 5000	350 ± 75	1,0005	0,15

**TRONSER TRIMMER**for
professional
electronics**MIKROWELLEN-TUNINGELEMENTE - METALLROTOR**
MICROWAVE TUNING ELEMENTS - METALLIC ROTOR

Bemaßung in Millimeter - Dimensions in Millimeter

Teile-Nr. Part No	Buchsen Länge Bushing Length	Buchsen Ø Bushing Ø	Bund Länge Shoulder Length	Maximum Einst.-Länge Maximum Extension	Minimum Einst.-Länge Minimum Extension	Rotor Ø	Außen- gewinde External Thread	Sechskant- mutter Dicke Hex Nut Thickness	Sechskant- mutter Hex Nut Width	Buchsen- schlitz B x T Bushing Slot W x D	Einstell- schlitz B x T Adjusting Slot W x D	Einstell- Drehmoment Tuning Torque Ncm
203-0301-100	3,1	3,4	0,9	1,9	0,9	1,8	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
203-0302-100	3,1	3,4	0,9	0,8	-	1,8	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
203-0303-100*	3,1	3,4	0,9	1,9	0,9	1,8	120-80UNS	0,8	4	0,8 x 0,8	0,4 x 0,5	0,1 - 1,0
203-0304-100*	3,1	3,4	0,9	0,8	-	1,8	120-80UNS	0,8	4	0,8 x 0,8	0,4 x 0,5	0,1 - 1,0
203-0600-100	6	3,4	0,9	3,8	-	1,8	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
203-0601-100	6	3,4	0,9	1,9	-	1,8	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
203-0603-100	6	3,4	0,9	4,7	3,6	2	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
203-0604-100*	6	3,4	0,9	3,8	-	1,8	120-80UNS	0,8	4	0,8 x 0,8	0,4 x 0,5	0,1 - 1,0
203-0605-100*	6	3,4	0,9	1,9	-	1,8	120-80UNS	0,8	4	0,8 x 0,8	0,4 x 0,5	0,1 - 1,0
203-0606-100*	6	3,4	0,9	4,7	3,6	2	120-80UNS	0,8	4	0,8 x 0,8	0,4 x 0,5	0,1 - 1,0
205-0300-100*	3,2	5,3	0,9	0,6	-	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
205-0301-100	9,2	5,3	0,9	0,6	-	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0302-100*	3,2	5,3	0,9	3,6	3,2	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
205-0303-100*	3,2	5,3	0,9	1,8	1,4	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
205-0400-100	4,3	5,3	1,1	1,7	0,2	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0602-100	6,4	5,3	1	3,8	-	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0603-100*	6,4	5,3	1	3,8	-	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
205-0604-100	6,4	5,3	1	3,8	1,1	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0605-100	6,4	5,3	1	3,2	-	1,8	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0606-100	6,4	5,3	1	3,8	3,3	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0800-100	7,8	5,3	1,1	2,3	-	3,2	190-64UNS	1	5,5	-	0,6 x 0,4	0,3 - 3,0
205-0901-100*	9,4	5,3	3,4	6,8	0,3	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
205-1400-100*	14	5,3	1	11,4	-	3,2	190-64UNS	1	5,5	0,8 x 0,8	0,6 x 0,4	0,3 - 3,0
207-0300-100	3,2	6,8	0,8	0,7	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0301-100	3,3	6,8	0,9	0,6	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0500-100	5,3	6,8	0,7	2,7	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0501-100	4,7	6,8	0,7	2,1	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0504-100*	5,3	6,8	0,7	2,7	-	4	234-64UNS	1	7	0,8 x 0,8	0,6 x 0,5	0,7 - 3,6
207-0505-100	5,3	6,8	0,7	2,7	1,9	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0506-100*	5,3	6,8	0,7	2,7	1,9	4	234-64UNS	1	7	0,8 x 0,8	0,6 x 0,5	0,7 - 3,6

* Buchse mit Schraubendrehschlitz - Bushing with Screwdriver Slot

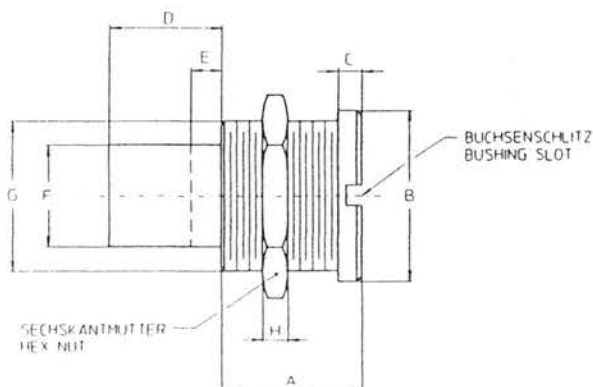
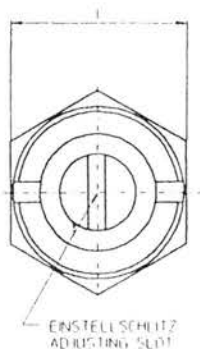
03.02.1998



TRONSER TRIMMER

for
professional
electronics

MIKROWELLEN-TUNINGELEMENTE - METALLROTOR MICROWAVE TUNING ELEMENTS - METALLIC ROTOR

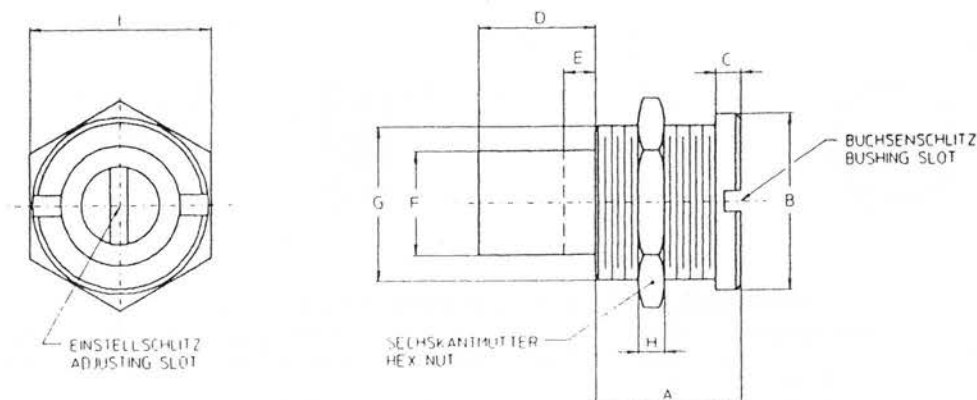


Bemaßung in Millimeter - Dimensions in Millimeter

Teile-Nr Part No	Buchsen Länge Bushing Length	Buchsen Ø Bushing Ø	Bund Länge Shoulder Length	Maximum Einst.-Länge Maximum Extension	Minimum Einst.-Länge Minimum Extension	Rotor Ø	Außen- gewinde External Thread	Sechskant- mutter Dicke Hex Nut Thickness	Sechskant- mutter Hex Nut Width	Buchsen- schlitz B x T Bushing Slot W x D	Einstell- schlitz B x T Adjusting Slot W x D	Einstell- Drehmoment Torque Ncm
207-0507-100*	5,3	6,8	0,9	2,7	-	4	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,5	0,7 - 3,6
207-0508-100	4,7	6,8	0,7	2,2	0,5	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0509-100	5,3	6,8	0,7	8,8	6,1	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0510-100	4,7	6,8	0,7	2,7	0,6	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0511-100*	5,3	6,8	0,9	4,6	1,9	4	234-64UNS	1,1*	7	0,8 x 0,6	0,6 x 0,5	0,7 - 3,6
207-0900-100	9,1	6,8	3,6	6,5	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0901-100*	9,1	6,8	3,6	6,5	-	4	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,5	0,7 - 3,6
207-0904-100	9,1	6,8	3,6	6,5	2,3	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0905-100	9,1	6,8	3,6	2,7	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-0906-100	9,1	6,8	3,6	4,6	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-1100-100	11,5	6,8	6,1	8,8	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-1101-100	11,5	6,8	6,1	8,8	-	4	234-64UNS	1	7	-	0,6 x 0,5	0,7 - 3,6
207-1105-100*	11,5	6,8	6,1	8,8	-	4	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,5	0,7 - 3,6
207-1202-100*	11,5	6,8	6,1	11,4	2,6	4	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,5	0,7 - 3,6
209-0900-100	9,1	9,5	1	6	-	5,3	312-64UNS	1,6	10	-	0,6 x 0,7	0,7 - 4,2
209-0901-100*	9,1	9,5	1	6	-	5,3	312-64UNS	1,6	9,5	0,8 x 0,8	0,6 x 0,5	0,7 - 4,2
213-1800-100	18,3	13,5	1	12,6	-	8,8	469-32UNS	2,5	14	-	0,8 x 0,9	1,5 - 3,5
507-0500-100	5,3	6,8	0,7	2,9	0,2	3,9	234-64UNS	1	7	-	0,6 x 0,8	0,7 - 3,6
507-0900-100*	9,1	6,8	3,6	6,5	0,3	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6

* Buchse mit Schraubendrehschlitz - Bushing with Screwdriver Slot

03.02.1997

**TRONSER TRIMMER**for
professional
electronics**MIKROWELLEN-TUNINGELEMENTE - DIELEKTRISCHER ROTOR**
MICROWAVE TUNING ELEMENTS - DIELECTRIC ROTOR

Die erste Ziffer der Teilenummer weist auf das dielektrische Material hin:
First digit of part indicates dielectric material:

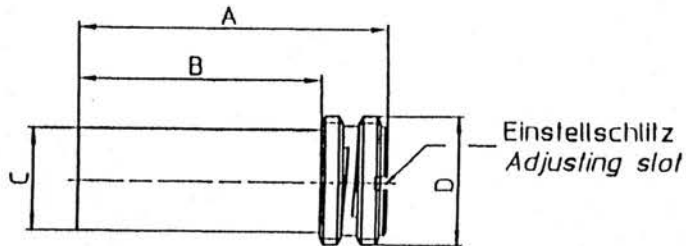
3 - Saphir 4 - Quarz 6 - Aluminiumoxid Al_2O_3 7 - Kunststoffe 8 - Eccosorb
3 - Sapphire 4 - Quartz 6 - Aluminum Oxide Al_2O_3 7 - Plastic 8 - Eccosorb

Bemaßung in Millimeter - Dimensions in Millimeter

Teile-Nr Part No	Buchsen Länge Bushing Length A	Buchsen Ø Bushing Ø B	Bund Länge Shoulder Length C	Maximum Einst.-Länge Maximum Extension D	Minimum Einst.-Länge Minimum Extension E	Rotor Ø F	Außen- gewinde External Thread G	Sechskant- mutter Dicke Hex Nut Thickness H	Sechskant- mutter Hex Nut Width I	Buchsen- schlitz B x T Bushing Slot W x D	Einstell- schlitz B x T Adjusting Slot W x D	Einstell- Drehmoment Tuning Torque Ncm
303-0600-100	6	3,4	0,9	3,7	0,9	1,6	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
303-0601-100	6	3,4	0,9	3,3	0,2	0,9	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
303-0602-100	6	3,4	0,9	4,3	1,2	1,6	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
303-0603-100*	6	3,4	0,9	3,7	0,9	1,6	120-80UNS	0,8	4	0,6 x 0,6	0,4 x 0,5	0,1 - 1,0
303-0604-100*	6	3,4	0,9	3,3	0,2	0,9	120-80UNS	0,8	4	0,6 x 0,6	0,4 x 0,5	0,1 - 1,0
303-0605-100*	6	3,4	0,9	4,3	1,2	1,6	120-80UNS	0,8	4	0,6 x 0,6	0,4 x 0,5	0,1 - 1,0
303-0606-100*	6	3,4	0,9	4,3	0,5	1,6	120-80UNS	0,8	4	0,6 x 0,6	0,4 x 0,5	0,1 - 1,0
307-0500-100	5,3	6,8	0,7	2,7	0,3	3,9	234-64UNS	1	7	-	0,6 x 0,8	0,7 - 3,6
307-0501-100*	5,3	6,8	0,7	2,7	0,3	3,9	234-64UNS	1	7	0,8 x 0,6	0,5 x 0,4	0,7 - 3,6
307-0900-100*	9,1	6,8	3,6	6,5	0,3	3,9	234-64UNS	1	7	0,8 x 0,6	0,5 x 0,5	0,7 - 3,6
307-0901-100*	9,1	6,8	3,6	32	25,5	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
307-1201-100*	11,5	6,8	5,4	9,1	0,2	3,9	234-64UNS	1	7	0,8 x 0,6	0,5 x 0,5	0,7 - 3,6
403-0600-100	6	3,4	0,9	3,7	0,9	1,6	120-80UNS	0,8	4	-	0,4 x 0,5	0,1 - 1,0
603-0601-100*	6	3,4	0,9	9,1	6,2	1,6	120-80UNS	0,8	4,5	0,6 x 0,6	0,4 x 0,5	0,1 - 1,0
607-0900-100*	9,1	6,8	3,6	30,6	24,1	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
607-0902-100*	9,1	6,8	3,6	28,1	21,6	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
607-0903-100*	9,1	6,8	3,6	23	16,5	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
607-0904-100*	9,1	6,8	3,6	13,3	8,8	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
607-0905-100*	9,1	6,8	3,6	9,3	2,9	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
707-0901-100*	9,1	6,8	3,6	3,5	-	3,9	234-64UNS	1	7	0,8 x 0,6	0,6 x 0,8	0,7 - 3,6
807-0901-100*	9,1	6,8	3,6	6,5	0,1	3,9	234-64UNS	1	7	0,8 x 0,6	0,5 x 0,5	0,7 - 3,6

* Buchse mit Schraubendreher Schlitz - Bushing with Screwdriver Slot

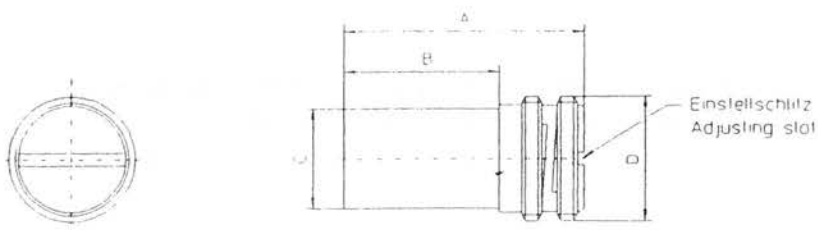
17.09.1996

**TRONSER TRIMMER**for
professional
electronics**MIKROWELLEN-ABSTIMMSCHRAUBEN - METALLROTOR**
MICROWAVE TUNING SCREWS - METALLIC ROTOR

Bemaßung in Millimeter - Dimensions in Millimeter

Telle-Nr. Part No.	Gesamtlänge Overall Length A	Stab- länge Rod Length B	Rotor Ø C	Gewinde Thread D	Einstellschlitz Breite x Tiefe Adjustment Slot Width x Depth	Einstell- drehmoment Tuning Torque Ncm	Stab- material Rod Material
500-0880	3,2	0,8	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0881	4,6	2	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0882	4,9	2,3	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0883	6,4	3,8	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0884	7,5	4,9	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0885	9,7	7,1	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0886	14	11,4	3,18	.156-64UNS	0,6 x 0,7	0,3 - 3,0	CuZn
500-0887	3,3	0,7	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0888	5,3	2,7	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0889	7,2	4,6	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0890	9,1	6,5	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0891	11,4	8,8	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0892	14,1	11,4	4,06	.190-64UNS	0,6 x 0,7	0,7 - 3,6	CuZn
500-0818	6,3	4	3,2	M4 x 0,35	0,6 x 0,7	0,3 - 3,0	CuZn
500-0900	7,5	5,2	3,2	M4 x 0,35	0,6 x 0,7	0,3 - 3,0	CuZn
500-0901	9,7	7,4	3,2	M4 x 0,35	0,6 x 0,7	0,3 - 3,0	CuZn
500-0902	3,2	0,8	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0903	3,3	0,9	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0832	4,7	2,3	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0329	5,3	2,9	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0904	7,2	4,8	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0696	9,1	6,7	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0223	11,4	9	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0325	14,1	11,6	4	M5 x 0,35	0,6 x 0,7	0,7 - 3,6	CuZn
500-0906	8,7	6,2	5,3	M6,5 x 0,35	0,6 x 0,7	0,7 - 4,2	CuZn
500-0636	18,1	12,9	8,8	M10 x 0,5	0,8 x 0,9	1,5 - 3,5	CuZn
703-0267	4,5	2,3	2,1	M2,7 x 0,25	0,4 x 0,4	0,1 - 1,0	Invar
703-0269	7,8	5,6	2,1	M2,7 x 0,25	0,4 x 0,4	0,1 - 1,0	Invar
703-0270	5,5	3,3	2,1	M2,7 x 0,25	0,4 x 0,4	0,1 - 1,0	Invar
703-0279	9,2	5,9	3,86	M5 x 0,35	0,6 x 0,7	0,1 - 1,0	Invar

19.02.1996

**TRONSER TRIMMER**for
professional
electronics**MIKROWELLEN-ABSTIMMSCHRAUBEN - DIELEKTRISCHER ROTOR**
MICROWAVE TUNING SCREWS - DIELECTRIC ROTOR

Stabmaterial: S = Saphir, Q = Quarz, A = Aluminiumoxid Al_2O_3 , P = Dielektrischer Kunststoff
Rod material: S = Sapphire, Q = Quartz, A = Aluminum Oxide Al_2O_3 , P = Dielectric Plastic

Bemaßung in Millimeter - Dimensions in Millimeter

Teile-Nr Part No	Gesamtlänge Overall Length A	Stablänge Rod Length B	Rotor Ø C	Gewinde Thread D	Einstellschlitz Breite x Tiefe Adjustment Slot Width x Depth	Einstell- drehmoment Tuning Torque Ncm	Stab- material Rod Material
703-0263	7,2	4,2	1,58	M2,3 x 0,25	0,4 x 0,4	0,1 - 1,0	P
703-0268	6,6	3,5	1,57	094-80UNS	0,4 x 0,5	0,1 - 1,0	A
703-0272	17,2	14	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0280	5,7	2,5	0,89	094-80UNS	0,4 x 0,4	0,1 - 1,0	S
703-0281	6,6	3,5	1,58	094-80UNS	0,4 x 0,4	0,1 - 1,0	Q
703-0283	7,6	4,5	1,58	094-80UNS	0,4 x 0,4	0,1 - 1,0	S
703-0284	10,9	7,8	1,58	190-80UNS	0,6 x 0,7	0,7 - 3,6	A
703-0285	17,1	14	1,58	190-80UNS	0,6 x 0,7	0,7 - 3,6	A
703-0286	5,6	2,2	3,86	190-80UNS	0,6 x 0,7	0,7 - 3,6	S
703-0304	6,5	3,5	1,57	094-80UNS	0,4 x 0,5	0,1 - 1,0	S
703-0305	14	10,6	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0306	17,1	12,5	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0307	9,5	4,9	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0308	8,9	4,3	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	MCT-25
703-0309	12,2	8,8	3,86	M5 x 0,35	0,5 x 0,5	0,7 - 3,6	A
703-0311	21,7	18,3	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0312	12,2	8,8	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0313	15,9	12,7	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0315	14	10,6	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0316	23	19	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0317	24,4	21	3,86	190-64UNS	0,5 x 0,5	0,7 - 3,6	A
703-0318	19,3	14,7	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	MCT-18
703-0319	17,5	12,9	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	MCT-25
703-0321	9,5	4,9	1,56	190-64UNS	0,5 x 0,5	0,7 - 3,6	MCT-18
703-0322	12,8	8,8	1,02	M4 x 0,35	0,6 x 0,4	0,7 - 3,6	MCT-30
703-0323	8,8	4,9	1,56	156-64UNS	0,6 x 0,4	0,7 - 3,6	A
703-0327	9,6	6,6	1,56	094-80UNS	0,4 x 0,5	0,1 - 1,0	S

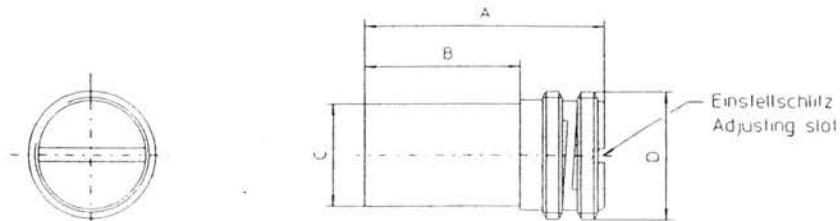
11.08.1997



TRONSER TRIMMER

for
professional
electronics

MIKROWELLEN-ABSTIMMSCHRAUBEN - DIELEKTRISCHER ROTOR
MICROWAVE TUNING SCREWS - DIELECTRIC ROTOR



Stabmaterial: S = Saphir, Q = Quarz, A = Aluminiumoxid Al_2O_3 , P = Dielektrischer Kunststoff
Rod material: S = Sapphire, Q = Quartz, A = Aluminum Oxide Al_2O_3 , P = Dielectric Plastic

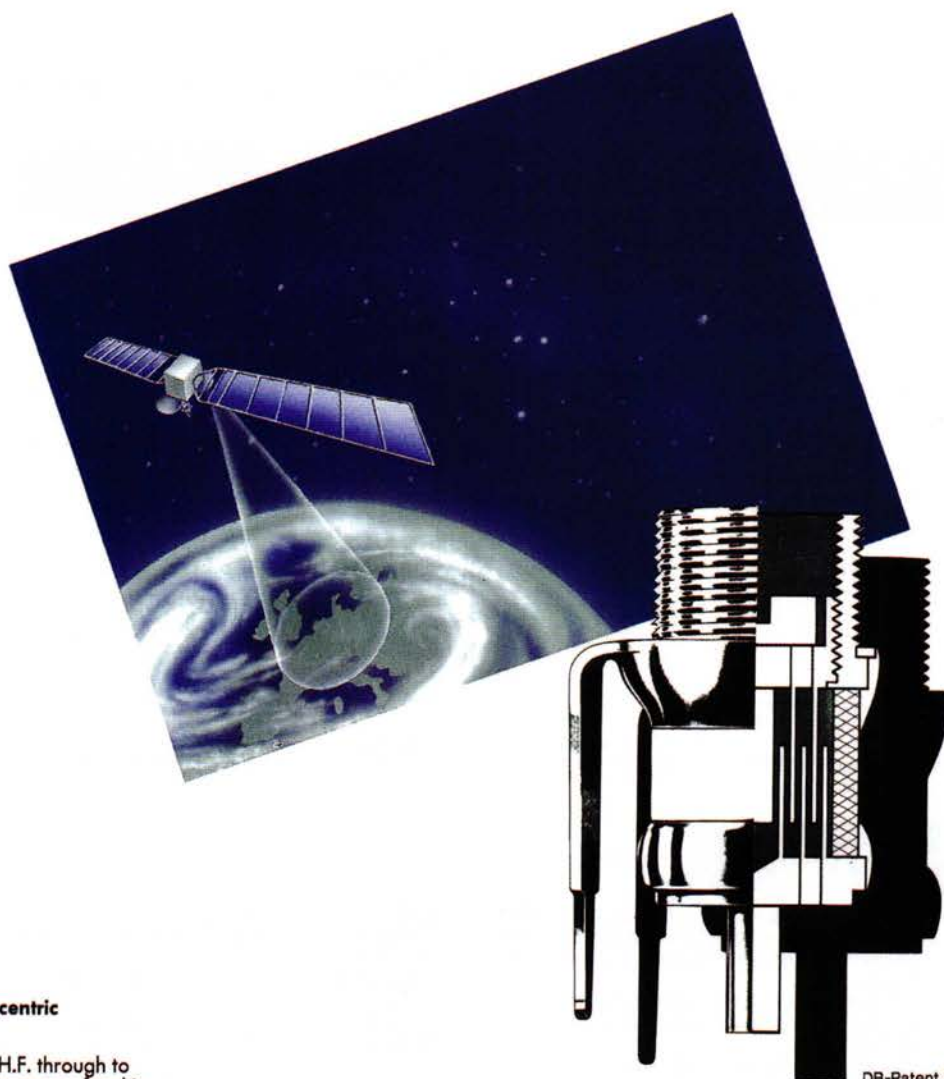
Bemaßung in Millimeter - Dimensions in Millimeter

Teile-Nr Part No.	Gesamtlänge Overall Length A	Stab- länge Rod Length B	Rotor $\varnothing$ C	Gewinde Thread D	Einstellschlitz Breite x Tiefe Adjustment Slot Width x Depth	Einstell- drehmoment Tuning Torque Ncm	Stab- material Rod Material
703-0328	17,1	12,5	1,56	.190-64UNS	0,5 x 0,5	0,7 - 3,6	A 96%
703-0329	9,5	4,9	1,56	.190-64UNS	0,5 x 0,5	0,7 - 3,6	A 96%
703-0332	6,5	3,5	1,5	.094-80UNS	0,4 x 0,4	0,1 - 1,0	A 99,7%

20.07.1999



TRONSER TRIMMER



60-Series Miniature Concentric Air Trimmer Capacitors

Designed to operate at V.H.F. through to microwave frequencies this range of multi-turn trimmers have Q Factors in excess of 5000 at 200 MHz with a self-resonant frequency greater than 2 GHz. A unique rotor construction ensures complete surface area contact between rotor and bushing giving a contact resistance of less than 1 milliohm and resulting in very high Q performance with no mechanical backlash. It also provides uniform torque with low dynamic noise.

DB-Patent 2 300 693

AIR TUBULAR TRIMMERS



TRONSER TRIMMER
60-0404-10003-000

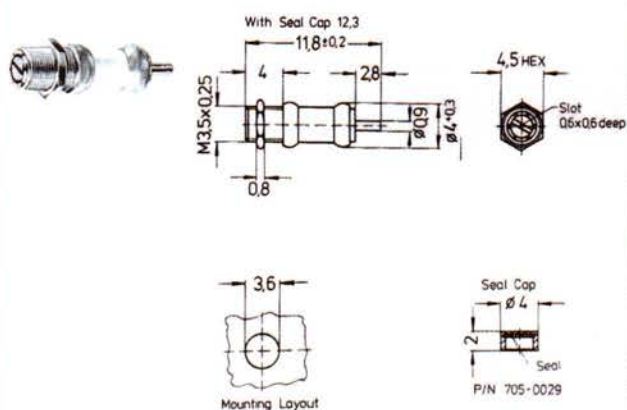


Figure 1

All Dimensions in mm



TRONSER TRIMMER
60-0409-10003-000

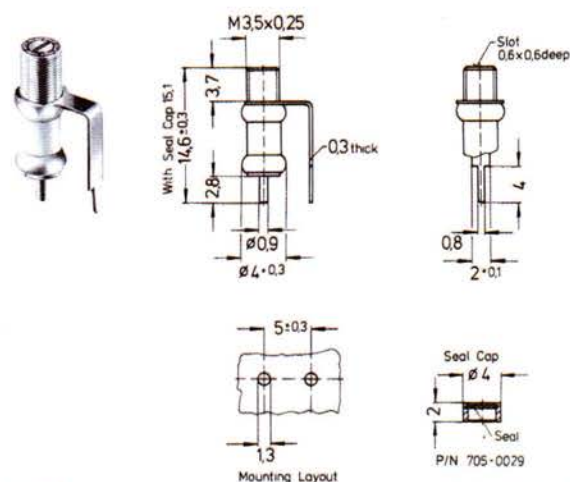


Figure 2

All Dimensions in mm



TRONSER TRIMMER
60-0410-10003-000

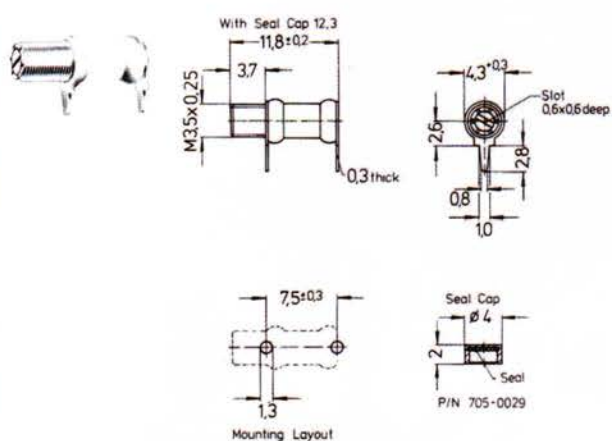


Figure 3

All Dimensions in mm



TRONSER TRIMMER
60-0411-10003-000

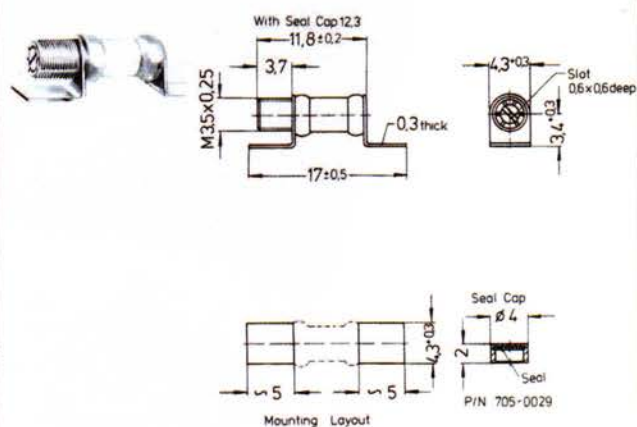


Figure 4

All Dimensions in mm



Technical Data

ROTOR

Tubes machined from solid brass, gold plated.
High Q - due to unique construction with large contact area between bushing and entire rotor thread

STATOR DIELECTRIC

Tubes machined out of solid brass, gold plated
Air (No plastic guiding elements or stop) -
Air gap 0,1 mm

INSULATOR TEMPERATURE RANGE

High density Alumina Al_2O_3 , glazed
-65°C to +125°C

LIFE MOUNTING TORQUE ADJUSTMENT ACCURACY VIBRATION SHOCK

>75 Cycles
max. 10 Ncm (for 60-0404-10003-000)

<1% of adjusted value

60 g at 10-2000 Hz
1500 g for 0,5 msec

Through the use of high temperature solder the trimmers will withstand solder temperatures of 300°C for 10 sec max.

Figure No.	Part Number	Cmin pF	Cmax pF	Test Voltage VDC	Q-Factor at 200 MHz	T.C. $\times 10^{-6}/^{\circ}C$	I.R. MΩ	Torque Ncm	max. Stop Torque Ncm
1	60-0404-10003-000	0,3	3,5	250	>5000	+50±30	>10 ⁶	0,3-2,0	2,0
2	60-0409-10003-000	0,4	3,5	250	>5000	+50±30	>10 ⁶	0,3-2,0	2,0
3	60-0410-10003-000	0,3	3,5	250	>5000	+50±30	>10 ⁶	0,3-2,0	2,0
4	60-0411-10003-000	0,3	3,5	250	>5000	+50±30	>10 ⁶	0,3-2,0	2,0



TRONER TRIMMER
60-0601-10007-000

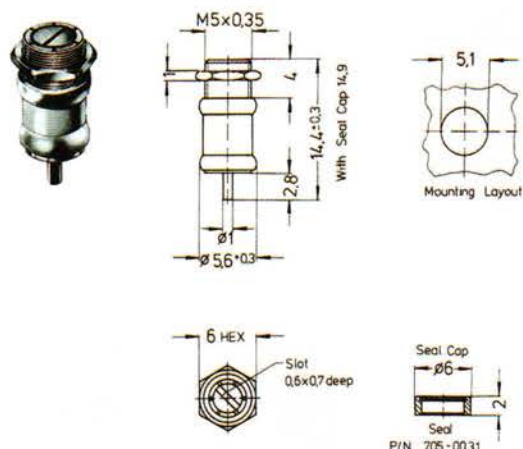


Figure 5

All Dimensions in mm



TRONER TRIMMER
60-0603-10007-000

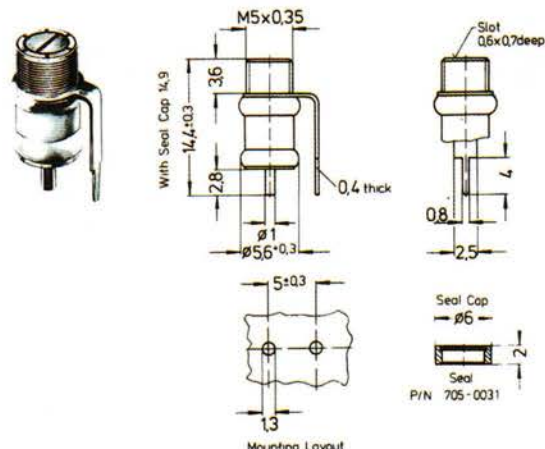


Figure 6

All Dimensions in mm



TRONER TRIMMER
60-0605-10007-000

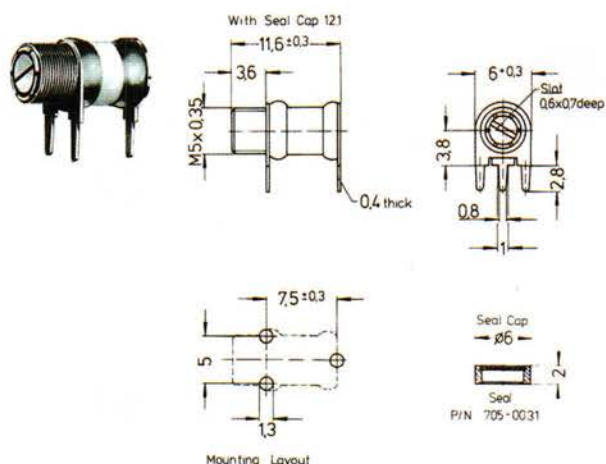


Figure 7

All Dimensions in mm



TRONER TRIMMER
60-0607-10007-000

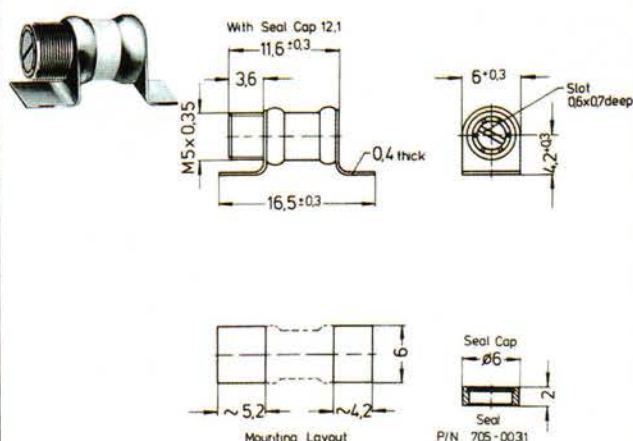


Figure 8

All Dimensions in mm



Technical Data

ROTOR

Tubes machined from solid brass, gold plated.
High Q – due to unique construction with large contact area between bushing and entire rotor thread

STATOR DIELECTRIC

Tubes machined out of solid brass, gold plated
Air (No plastic guiding elements or stop) –
Air gap 0,1 mm

INSULATOR TEMPERATURE RANGE

High density Alumina Al_2O_3 , glazed
-65°C to +125°C

LIFE MOUNTING TORQUE ADJUSTMENT ACCURACY VIBRATION SHOCK

>75 Cycles
max. 30 Ncm (for 60-0601-10007-000)
<1% of adjusted value
60 g at 10-2000 Hz
1500 g for 0,5 msec

Through the use of high temperature solder the trimmers will withstand solder temperatures of 300°C for 10 sec max.

Figure No.	Part Number	Cmin pF	Cmax pF	Test Voltage VDC	Q-Factor at 200 MHz	T.C. $\times 10^{-6}/^{\circ}C$	I.R. M Ω	Torque Ncm	max. Stop Torque Ncm
5	60-0601-10007-000	0,7	7,0	250	>5000	+60±30	>10 ⁶	0,3-3,0	6,0
6	60-0603-10007-000	0,8	7,0	250	>5000	+60±30	>10 ⁶	0,3-3,0	6,0
7	60-0605-10007-000	0,7	7,0	250	>5000	+60±30	>10 ⁶	0,3-3,0	6,0
8	60-0607-10007-000	0,7	7,0	250	>5000	+60±30	>10 ⁶	0,3-3,0	6,0



TRONSER TRIMMER
60-0713-10011-000
60-0713-10016-000

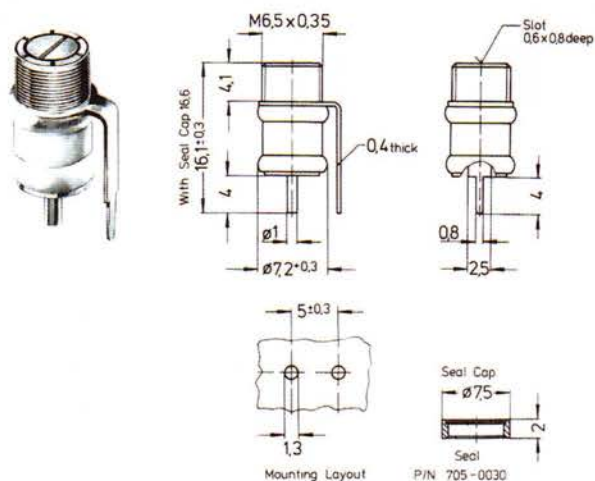


Figure 9

All Dimensions in mm



TRONSER TRIMMER
60-0714-10011-000
60-0714-10016-000

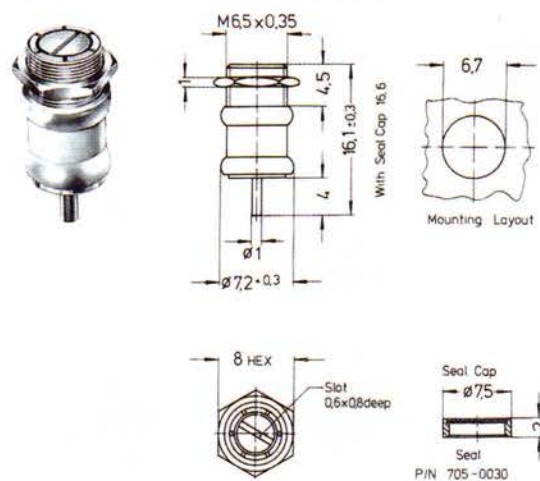


Figure 10

All Dimensions in mm



TRONSER TRIMMER
60-0715-10011-000
60-0715-10016-000

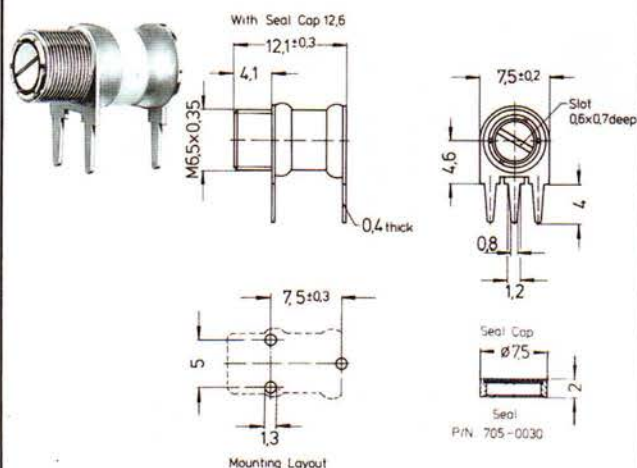


Figure 11

All Dimensions in mm



TRONSER TRIMMER
60-0716-10011-000
60-0716-10016-000

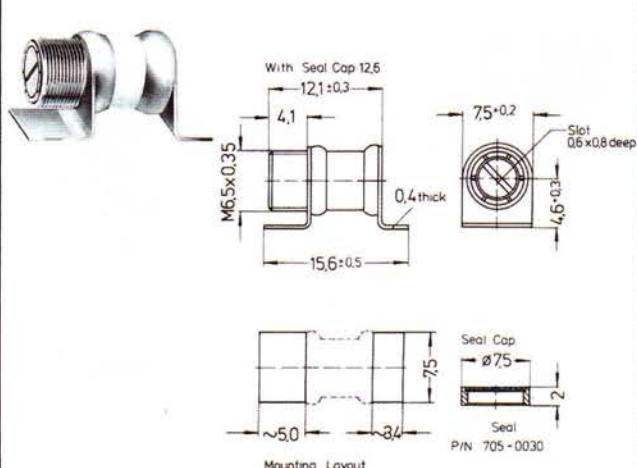


Figure 12

All Dimensions in mm



Technical Data

ROTOR

Tubes machined from solid brass, gold plated.
High Q – due to unique construction with large contact area between bushing and entire rotor thread

STATOR DIELECTRIC

Tubes machined out of solid brass, gold plated
Air (No plastic guiding elements or stop) –
Air gap 0,1mm

INSULATOR TEMPERATURE RANGE

High density Alumina Al_2O_3 , glazed
-65°C to +125°C

LIFE MOUNTING TORQUE ADJUSTMENT ACCURACY VIBRATION SHOCK

>75 Cycles
max. 50 Ncm (for 60-0714-100 . . -000)
<1% of adjusted value
60 g at 10-2000 Hz
1500 g for 0,5 msec

Through the use of high temperature solder the trimmers will withstand solder temperatures of 300°C for 10 sec max.

Figure No.	Part Number	Cmin pF	Cmax pF	Test Voltage VDC	Q-Factor at 200 MHz	T.C. $\times 10^{-6}/^{\circ}C$	I.R. MΩ	Torque Ncm	max. Stop Torque Ncm
9	60-0713-10011-000	1,2	11,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
10	60-0714-10011-000	1,1	11,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
11	60-0715-10011-000	1,1	11,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
12	60-0716-10011-000	1,1	11,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
9	60-0713-10016-000	1,2	16,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
10	60-0714-10016-000	1,1	16,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
11	60-0715-10016-000	1,1	16,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0
12	60-0716-10016-000	1,1	16,0	250	>5000	+ 65 ± 30	>10 ⁶	0,7-3,6	8,0



TRONSER TRIMMER
60-0720-15...-000

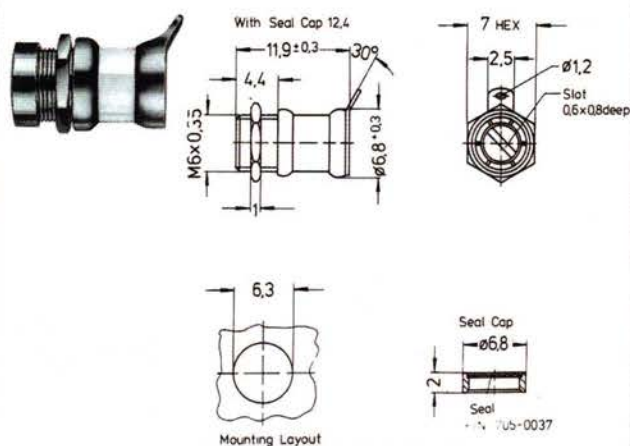


Figure 13

All Dimensions in mm



TRONSER TRIMMER
60-0721-15...-000

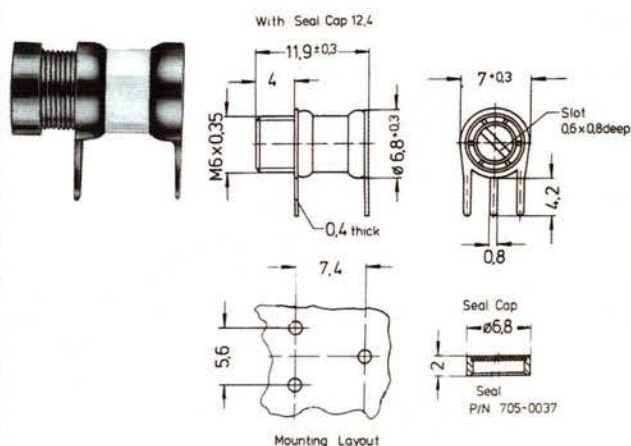


Figure 14

All Dimensions in mm



TRONSER TRIMMER
60-0722-15...-000

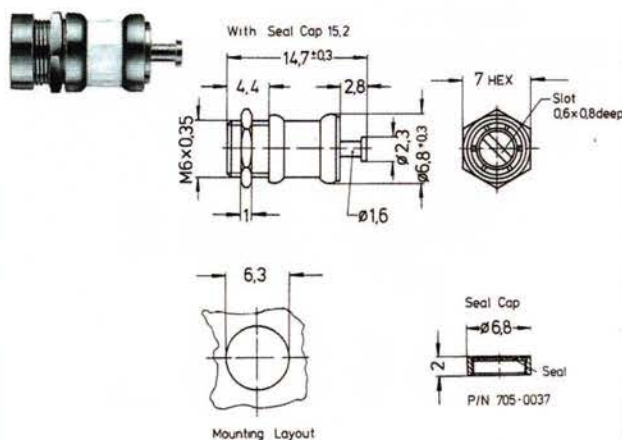


Figure 15

All Dimensions in mm



TRONSER TRIMMER
60-0733-10007-000

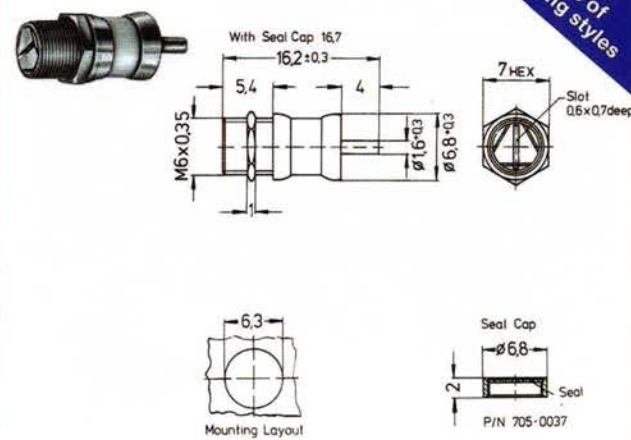


Figure 16

All Dimensions in mm



Technical Data

ROTOR

Tubes machined from solid brass, gold plated.
High Q - due to unique construction with large
contact area between bushing and entire rotor
thread

STATOR DIELECTRIC

Tubes machined out of solid brass, gold plated
Air (No plastic guiding elements or stop) -
Air gap 0,1mm

INSULATOR TEMPERATURE RANGE

High density Alumina Al_2O_3 , glazed
-65°C to +125°C

LIFE MOUNTING TORQUE ADJUSTMENT ACCURACY VIBRATION SHOCK

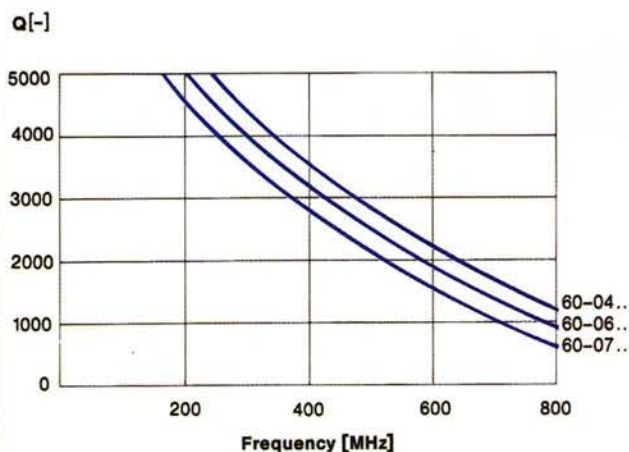
>75 Cycles
max. 50 Ncm (for 60-0720-..., 60-0722-...,
60-0733-...)
<1% of adjusted value
60 g at 10-2000 Hz
1500 g for 0,5 msec

Through the use of high temperature solder the trimmers will with-
stand solder temperatures of 300°C for 10 sec max.

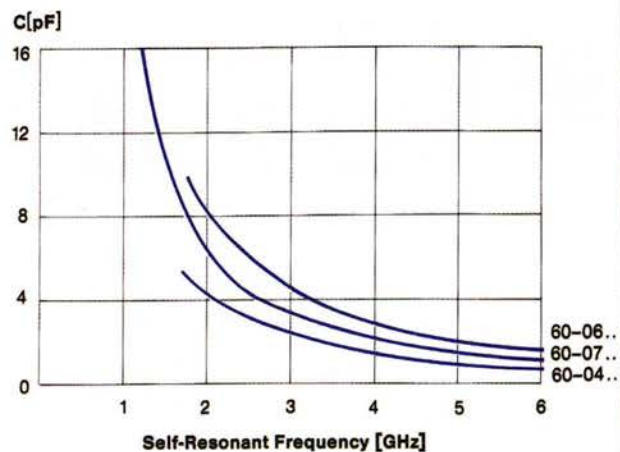
Figure No.	Part Number	Cmin pF	Cmax pF	Test Voltage VDC	Q-Factor at 200MHz	T.C. $\times 10^{-6}/^{\circ}C$	I.R. MΩ	Torque Ncm	max. Stop Torque Ncm
13	60-0720-15010-000	0,8	10,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
13	60-0720-15014-000	1,0	14,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
14	60-0721-15010-000	0,8	10,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
14	60-0721-15014-000	1,0	14,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
15	60-0722-15010-000	0,8	10,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
15	60-0722-15014-000	1,0	14,0	250	>5000	0±15	>10 ⁶	0,7-3,6	8,0
16	60-0733-10007-000	0,8	7,0	250	>5000	60±10	>10 ⁶	0,7-3,6	8,0



Q-Factor vs Frequency

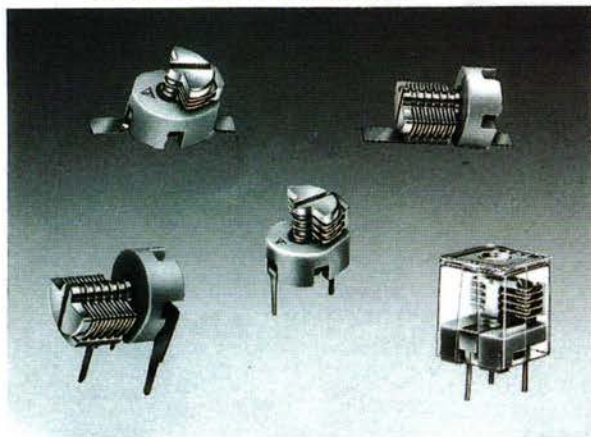


Self-Resonant Frequency



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AIR PLATE TRIMMERS



TRONSER TRIMMER

Microwave Tuning Elements Sapphire Trimmers



TRONSER TRIMMER

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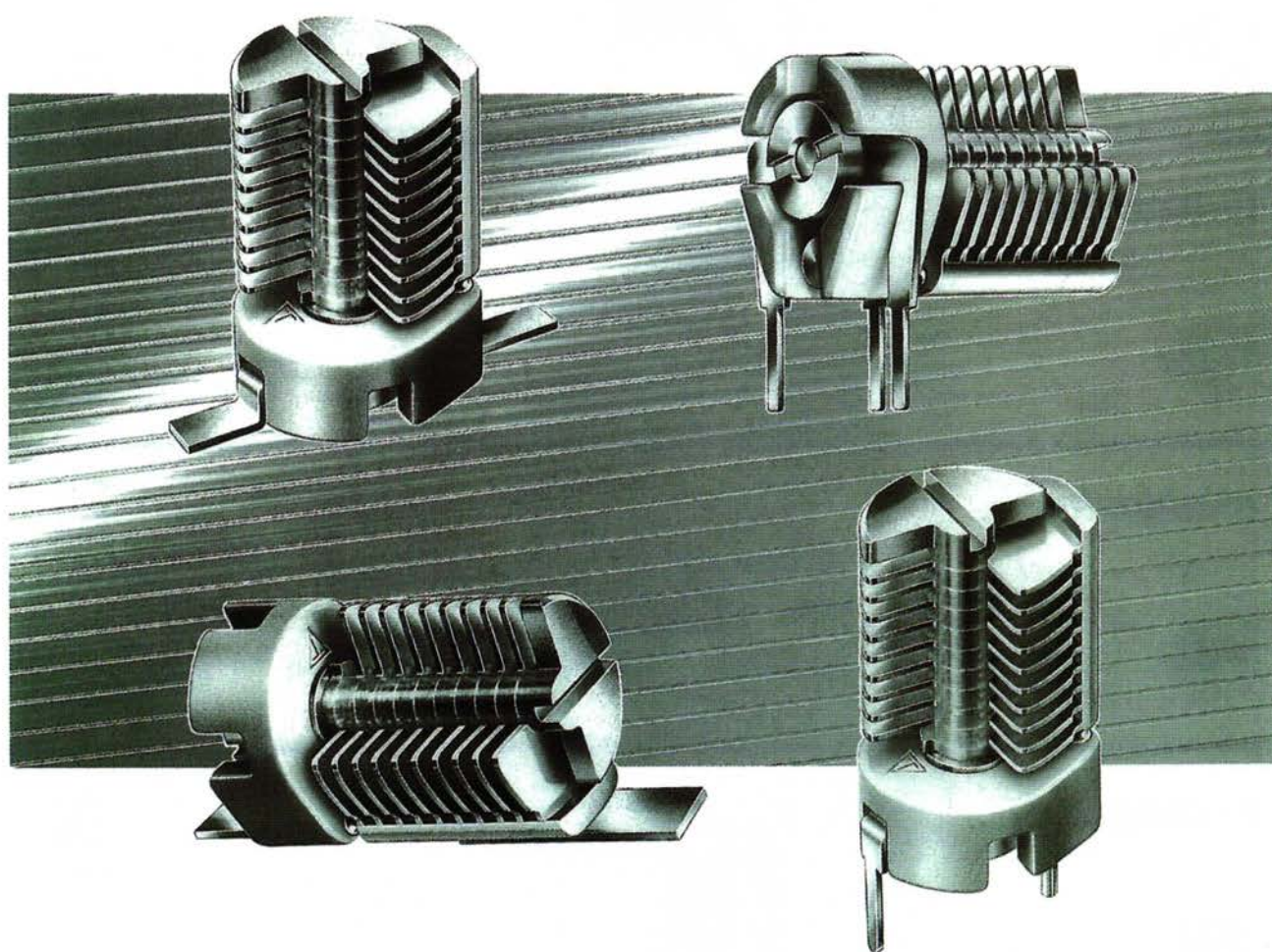
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**10-08 ..
HIGH Q
MINIATURE AIR-TRIMMER
CAPACITORS**

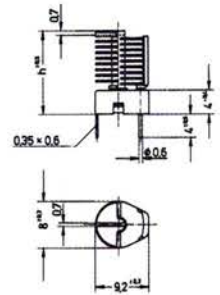
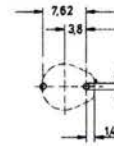
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M 1:1



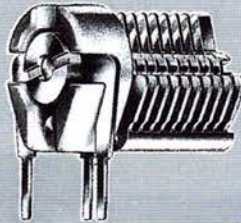
Mounting Layout



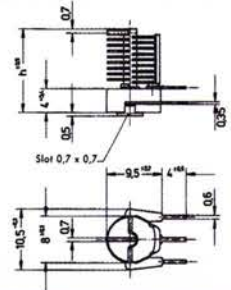
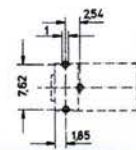
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M 1:1



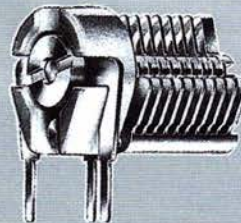
Mounting Layout



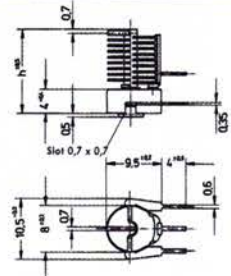
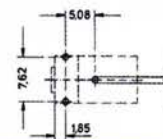
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M 1:1



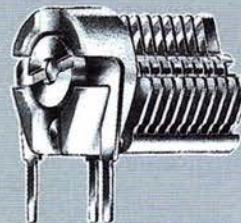
Mounting Layout



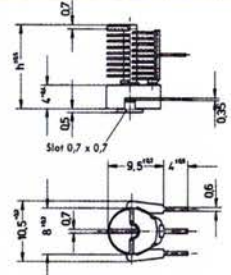
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M 1:1



Mounting Layout



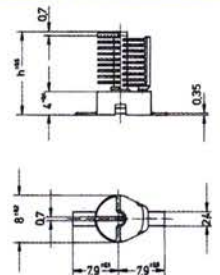
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M 1:1



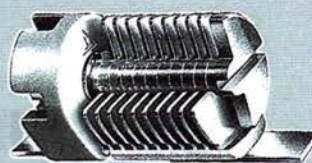
Mounting Layout



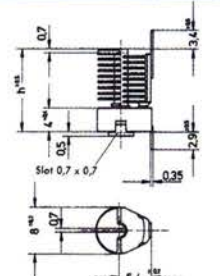
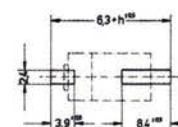
10-0806-20...-...



M 1:1



Mounting Layout





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Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0801-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,2
10-0801-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,3
10-0801-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,5
10-0801-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,7
10-0801-20012-000	1,6	11,4	6/6	60 ± 15	11,1	1,8
10-0801-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,0
10-0801-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,1
10-0801-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,3
10-0801-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,4
10-0801-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,5
10-0801-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,7

Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0802-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,3
10-0802-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,4
10-0802-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,6
10-0802-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,8
10-0802-20012-000	1,6	11,4	6/6	60 ± 15	11,1	1,9
10-0802-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,1
10-0802-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,2
10-0802-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,4
10-0802-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,5
10-0802-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,6
10-0802-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,8

Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0803-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,3
10-0803-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,4
10-0803-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,6
10-0803-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,8
10-0803-20012-000	1,6	11,4	6/6	60 ± 15	11,1	1,9
10-0803-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,1
10-0803-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,2
10-0803-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,4
10-0803-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,5
10-0803-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,6
10-0803-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,8

Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0804-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,3
10-0804-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,4
10-0804-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,6
10-0804-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,8
10-0804-20012-000	1,6	11,4	6/6	60 ± 15	11,1	1,9
10-0804-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,1
10-0804-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,2
10-0804-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,4
10-0804-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,5
10-0804-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,6
10-0804-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,8

Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0805-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,4
10-0805-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,5
10-0805-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,7
10-0805-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,9
10-0805-20012-000	1,6	11,4	6/6	60 ± 15	11,1	2,0
10-0805-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,2
10-0805-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,3
10-0805-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,5
10-0805-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,6
10-0805-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,7
10-0805-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,9

Type	C min pF	C max pF	Plates	TKc $\times 10^{-6}/^{\circ}\text{C}$	Height h mm	Weight g
10-0806-20004-000	1,0	3,7	2/2	60 ± 15	7,5	1,4
10-0806-20006-000	1,1	5,8	3/3	60 ± 15	8,4	1,5
10-0806-20008-000	1,3	7,8	4/4	60 ± 15	9,3	1,7
10-0806-20010-000	1,4	9,8	5/5	60 ± 15	10,2	1,9
10-0806-20012-000	1,6	11,4	6/6	60 ± 15	11,1	2,0
10-0806-20014-000	1,8	13,7	7/7	60 ± 15	12,0	2,2
10-0806-20016-000	1,9	16,1	8/8	60 ± 15	12,9	2,3
10-0806-20018-000	2,1	17,5	9/9	60 ± 15	13,8	2,5
10-0806-20020-000	2,2	19,9	10/10	60 ± 15	14,7	2,6
10-0806-20022-000	2,5	22,0	11/11	60 ± 15	15,6	2,7
10-0806-20024-000	2,6	23,8	12/12	60 ± 15	16,5	2,9

Miniature Air Variable Capacitors 10-08...-20...-000

Descriptive Code C 221 (IEC 418-4)

Rotors and Stators are precision machined from solid brass extrusion and silver-plated

Stators soldered to solid brass rivets which are shrink-fitted into the ceramic base.

Typical Value of Q
1 MHz-8000
50 MHz-6000
100 MHz-4000
200 MHz-1500

Air Gap 0,20 mm (.008 INCH)

Test Voltage 300 V RMS

Insulation Resistance $> 25\,000\ \text{M}\ \Omega$

Torque 1.0-5.0 Ncm
(1.5/7.0 INOZ)

Ceramic Base Steatite, Grad L - 423 or better, silicon impregnated

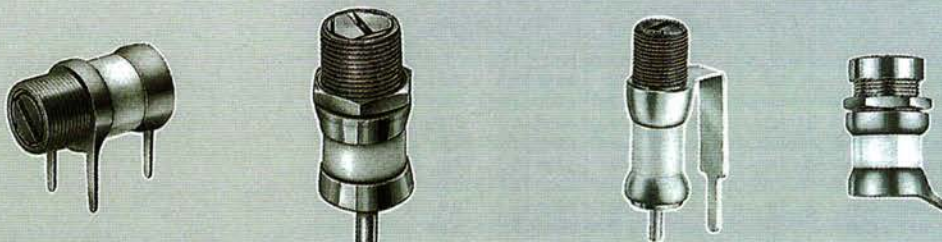
Terminals fire-tinned,
Solderability Test
IEC 28-2-20



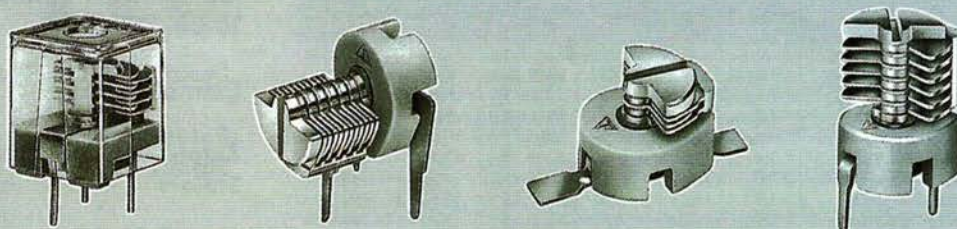
TRONSER TRIMMER

for
professional
electronics

Air Tubular Trimmer



Air Plate Trimmer



Sapphire Trimmer



Tuning Elements



Alfred Tronser GmbH

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Fax: +49 (0) 70 82-798-1 55
Internet: www.tronser.com
E-Mail: info@tronser.com

Tronser, Inc.

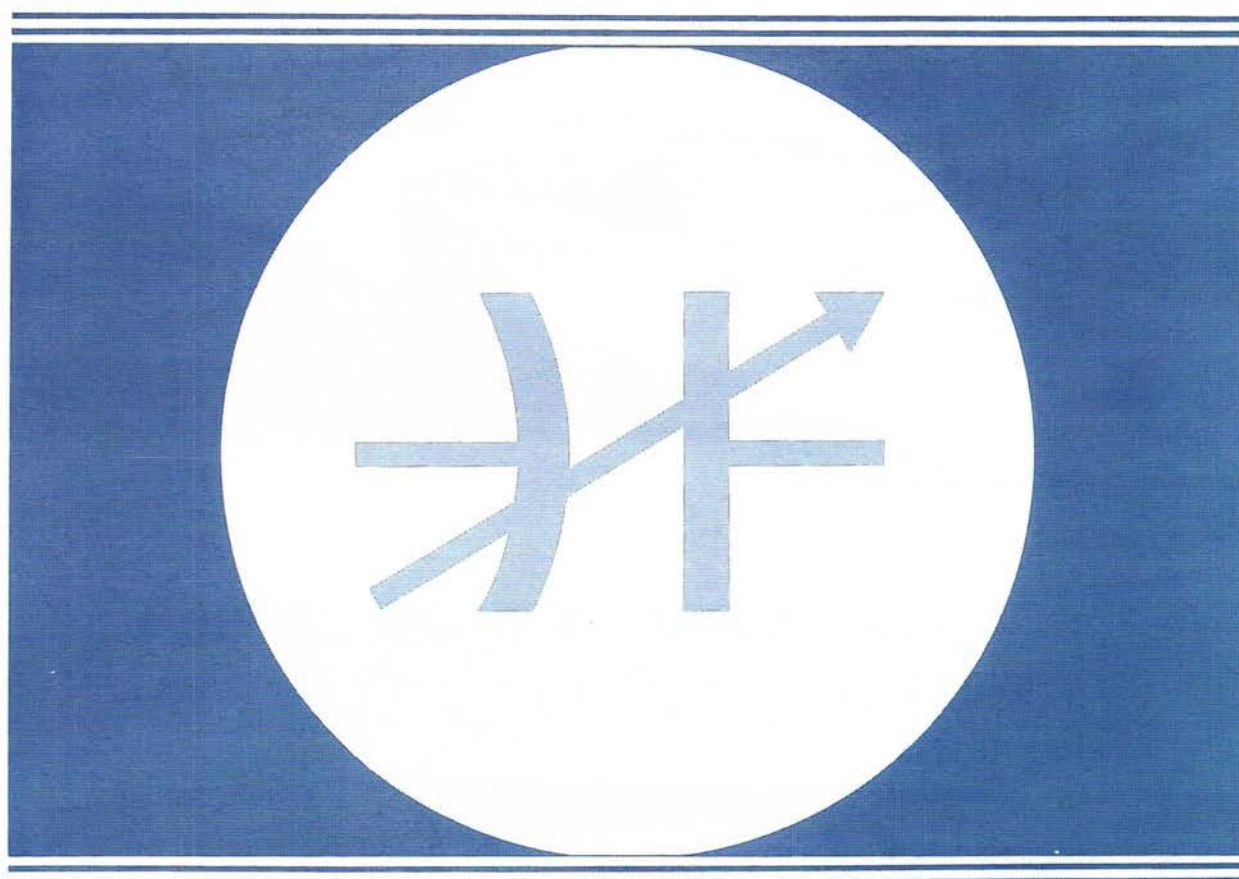
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The knowledge of the high standards for Trimmer Capacitors has made us the preferred partner of professional electronics companies around the world. 40 years of experience in the design, production and service have given us the competence in which you can depend. With Sapphire-, Air Tubular-, Air Plate-Trimmer and Tuning Elements from TRONSER in „Standard“- or „Custom“-design you can be assured of the continued and future success of your products. Let TRONSER be the partner of your success.

Talk to us.

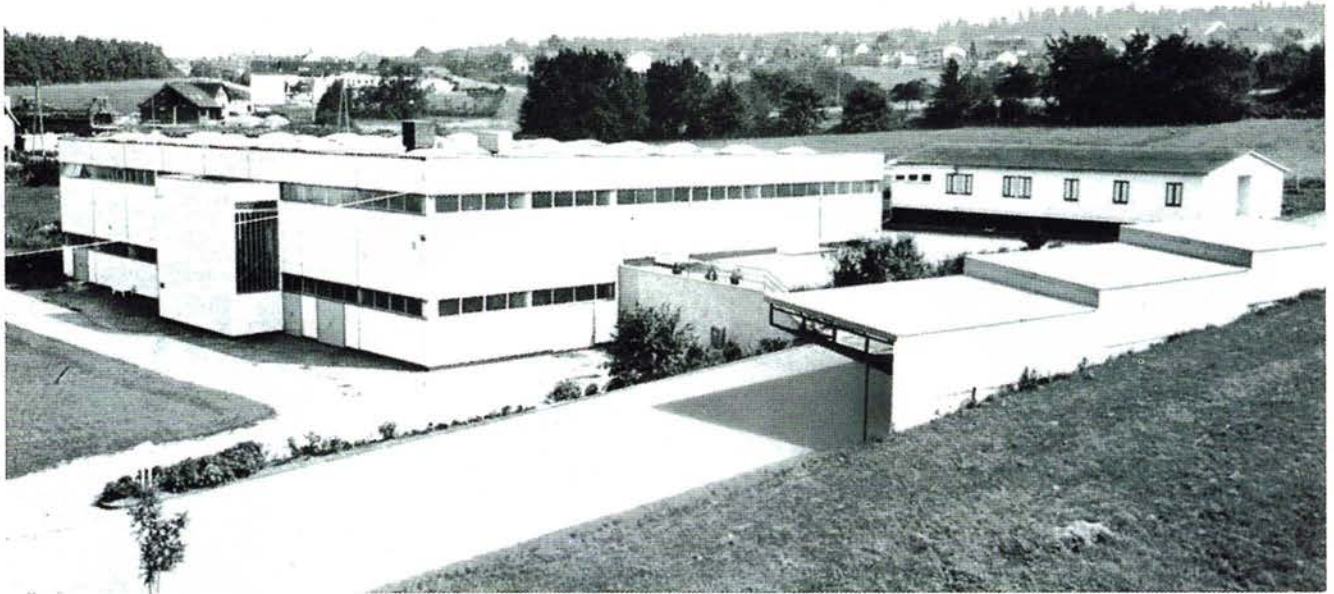


TRIM-TRONICS INC



VARIABLE AIR CAPACITORS

CREATIVE TECHNOLOGY — PRECISION MANUFACTURE — TRADITION OF QUALITY



Manufacturing facilities of Alfred Tronser GmbH.



Manufacturing and warehouse facilities of Trim-Tronics, Inc.



TRIM-TRONICS INC

TRIM-TRONICS, INC., a subsidiary of and combined with Alfred Tronser, GmbH, West Germany, has over 35 years of experience in design, manufacture and application of variable capacitors.

TRIM-TRONICS, INC., from its United States manufacturing facilities, offers a wide variety of air-plate, concentric ring and sapphire trimmer capacitors. In addition, Tronser manufactures an array of capacitors, including differential and butterfly types with air-dielectric, as well as tubular ceramic trimmers.

One of TRIM-TRONICS specialties is custom design. We welcome you to submit your specifications.

Features of TRIM-TRONICS variable capacitors:

- ▼ Different mounting possibilities
- ▼ Wide capacitance ranges
- ▼ High Q-factors
- ▼ Low temperature-coefficient
- ▼ Small dimensions
- ▼ High mechanical and electrical stability
- ▼ Special surface finished — Silver, Gold, Rhodium, Nickel
- ▼ Extended or isolated shaft, isolated cap, dust-protection cap



TRIM-TRONICS INC

Design	Type	Mechanical and Electrical Data	Special Designs Special Manufacture
1 2	3 4 5 6	7 8 9 10 11	12 13 14
AB	C D	E F	G H

A = Design

- 1 = Plate trimmer and rotary capacitor
- 2 =
- 6 = Tubular trimmer

B = Dielectric

- 0 = Air
- 1 = Glass
- 2 = Ceramic
- 3 = Plastic film

C = Width of Base or Diameter in mm

D = Types

E = Air Gap (for air dielectric)

- 00 to 80 in 1/100 mm
- 81 to 99 Special dimensions of the air gap

- 81 = 1.40 mm
- 82 = 1.00 mm
- 83 = 1.15 mm
- 84 = 1.50 mm
- 85 = 1.80 mm
- 86 = 0.90 mm

F = Nominal Capacitance in pF

G = Special Finishes

- 0 = Silver
- 1 = Gold
- 2 = Rhodium
- 3 = Nickel

or Special Manufacture

- 9 = Special manufacture

H = Special Designs

- 11 = Insulated rotor cap
- 12 = Insulated rotor shaft
- 13 = Extended rotor shaft
- 15 = Rotor stop from top right hand side
- 16 = High temperature solder
- 20 = Protective coating
- 23 = Rotor stop from top left hand side
- 30 = Dust protection cap loose
- 31 = Dust protection cap mounted
- 32 = Attachment straps
- 33 = Attachment straps mounted
- 34 = Plastic packing boxes
- 35 = Mounting screws

Special Design Combinations

- 70 = 30 and 35
- 71 = 13 and 35
- 73 = 12 and 15
- 75 = 11 and 31
- 76 = 12 and 23
- 77 = 11 and 35
- 78 = 12 and 31
- 79 = 15 and 31
- 80 = 12 and 35

Example of Coding:

10-1107-20011-013 = Plate trimmer with air dielectric, Type 1107 (width of base 11 mm), air gap 0.20 mm, capacitance 11 pF, surface silver-plated, with extended rotor shaft.



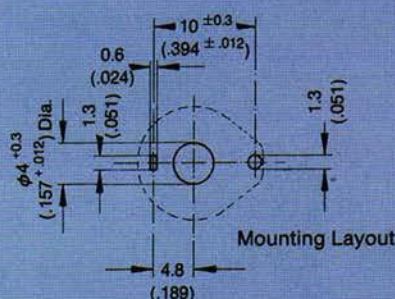
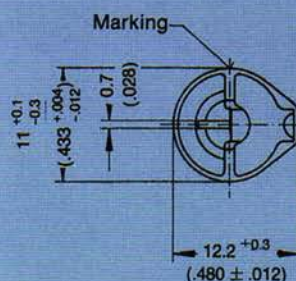
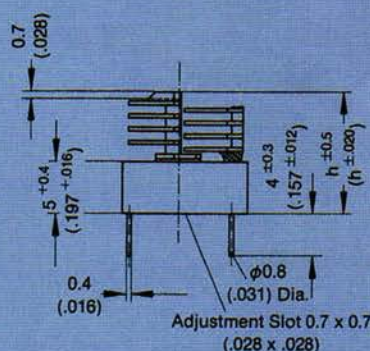
TRIM-TRONICS INC

10 1120 25 ■■■ ■■■



Printed Circuit Mounting

D.B. Pat. 1 614 892
G.B. Pat. 1 252 120
USA Pat. 3 675 288



Mounting Layout

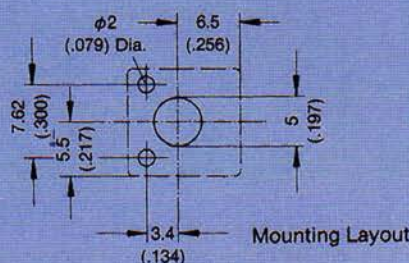
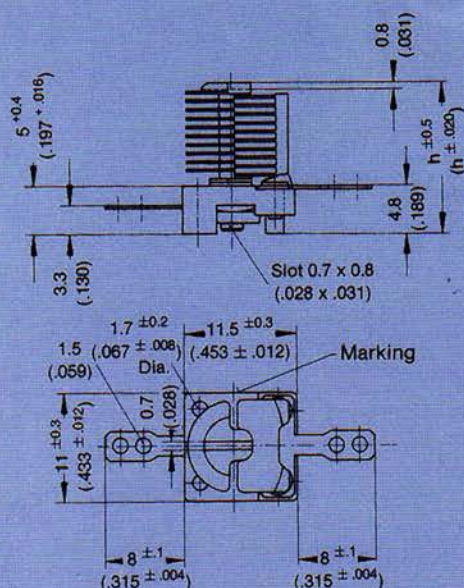
Rotor	Precision turned out of solid brass-extrusion, galvanic silver-plated. Snug fit in brass bushing.
Stator	Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivet which are shrink-fitted into the ceramic base.
Ceramic Base	High density steatite.
Mounting	Rotor and Stator pin leads for printed circuit board mounting.
Termination	Rotor and Stator leads silver-plated, tinned for easy soldering.
Adjustments	Adjustable from both sides.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHZ	IR MOhm	Test Voltage RMS	Height h mm (inch)
10-1120-25004-000	1.2	4.0	.25 (.010)	4	2.8-5.6	+45	5000	> 1000	500	9.7 (.382)
10-1120-25006-000	1.3	6.0	.25 (.010)	6	2.8-5.6	+45	5000	> 1000	500	11.0 (.433)
10-1120-25008-000	1.5	8.0	.25 (.010)	8	2.8-5.6	+45	5000	> 1000	500	12.3 (.484)
10-1120-25010-000	1.6	10.5	.25 (.010)	10	2.8-5.6	+45	5000	> 1000	500	13.6 (.535)
10-1120-25012-000	1.7	12.5	.25 (.010)	12	2.8-5.6	+45	5000	> 1000	500	14.9 (.587)
10-1120-25015-000	1.9	15.0	.25 (.010)	14	2.8-5.6	+45	5000	> 1000	500	16.2 (.638)
10-1120-25017-000	2.0	17.0	.25 (.010)	16	2.8-5.6	+45	5000	> 1000	500	17.5 (.689)
10-1120-25019-000	2.2	19.0	.25 (.010)	18	2.8-5.6	+45	5000	> 1000	500	18.8 (.740)
10-1120-25021-000	2.3	21.0	.25 (.010)	20	2.8-5.6	+45	5000	> 1000	500	20.1 (.791)



Screw Mounting



Mounting Layout

Rotor	Precision turned out of solid brass-extrusion, galvanic silver-plated. Rotor lead terminal is riveted to the brass bushing, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.
Stator	Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.
Ceramic Base	High density steatite, silicone impregnated for better electrical properties. Surface-ground for more secure mounting.
Mounting	With two hex-head screws including washer and nut. See page 20.
Termination	Rotor and Stator leads silver-plated, tinned for easy soldering.
Adjustments	Adjustable from both sides.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

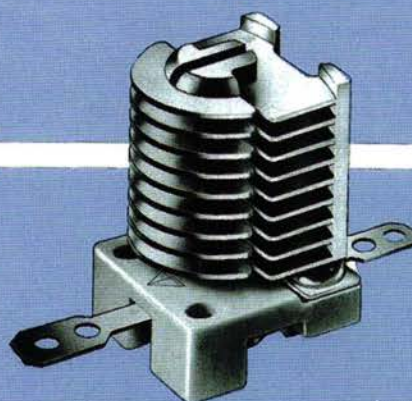
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC x10 ⁻⁶ /°C ±20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1107-20005-000	1.5	5.0	.20 (.008)	4	3.5-7.0	+80	5000	> 1000	300	8.7 (.343)	10.4 (.409)
10-1107-20008-000	1.6	8.0	.20 (.008)	6	3.5-7.0	+80	5000	> 1000	300	9.6 (.378)	10.4 (.409)
10-1107-20011-000	1.7	11.0	.20 (.008)	8	3.5-7.0	+80	5000	> 1000	300	10.5 (.413)	13.8 (.543)
10-1107-20014-000	1.9	14.0	.20 (.008)	10	3.5-7.0	+60	5000	> 1000	300	11.4 (.449)	13.8 (.543)
10-1107-20017-000	2.0	17.0	.20 (.008)	12	3.5-7.0	+60	5000	> 1000	300	12.3 (.484)	13.8 (.543)
10-1107-20019-000	2.1	19.5	.20 (.008)	14	3.5-7.0	+60	5000	> 1000	300	13.2 (.520)	13.8 (.543)
10-1107-20023-000	2.2	23.0	.20 (.008)	16	3.5-7.0	+55	5000	> 1000	300	14.1 (.555)	16.7 (.657)
10-1107-20026-000	2.3	26.5	.20 (.008)	18	3.5-7.0	+55	5000	> 1000	300	15.0 (.591)	16.7 (.657)
10-1107-20028-000	2.4	28.5	.20 (.008)	20	3.5-7.0	+55	5000	> 1000	300	15.9 (.626)	16.7 (.657)
10-1107-20032-000	2.5	32.0	.20 (.008)	22	3.5-7.0	+50	5000	> 1000	300	16.8 (.661)	18.6 (.732)
10-1107-20034-000	2.6	34.5	.20 (.008)	24	3.5-7.0	+50	5000	> 1000	300	17.7 (.697)	18.6 (.732)

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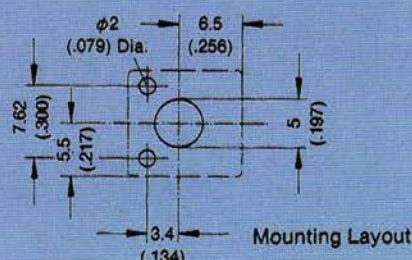
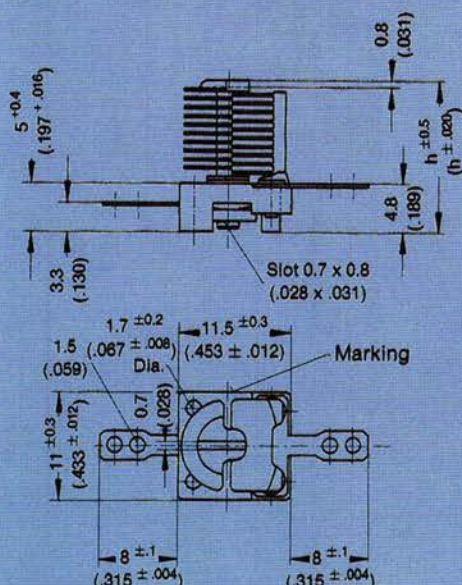


TRIM-TRONICS INC

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Screw Mounting



Rotor	Precision turned out of solid brass-extrusion, galvanic silver-plated. Rotor lead terminal is riveted to the brass bushing, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.
Stator	Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.
Ceramic Base	High density steatite, silicone impregnated for better electrical properties. Surface-ground for more secure mounting.
Mounting	With two hex-head screws including washer and nut. See page 20.
Termination	Rotor and Stator leads silver-plated, tinned for easy soldering.
Adjustments	Adjustable from both sides.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC x10 ⁻⁶ /°C ±20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1107-25004-000	1.5	4.0	.25 (.010)	4	3.5-7.0	+70	5000	> 1000	500	9.5 (.374)	10.4 (.409)
10-1107-25008-000	1.7	6.5	.25 (.010)	6	3.5-7.0	+80	5000	> 1000	500	10.8 (.425)	13.8 (.543)
10-1107-25008-000	1.8	8.8	.25 (.010)	8	3.5-7.0	+50	5000	> 1000	500	12.1 (.476)	13.8 (.543)
10-1107-25010-000	1.9	10.8	.25 (.010)	10	3.5-7.0	+50	5000	> 1000	500	13.4 (.528)	13.8 (.543)
10-1107-25013-000	2.1	13.3	.25 (.010)	12	3.5-7.0	+50	5000	> 1000	500	14.7 (.579)	16.7 (.657)
10-1107-25016-000	2.2	16.0	.25 (.010)	14	3.5-7.0	+50	5000	> 1000	500	16.0 (.630)	16.7 (.657)
10-1107-25018-000	2.3	18.5	.25 (.010)	16	3.5-7.0	+50	5000	> 1000	500	17.3 (.681)	18.6 (.732)
10-1107-25021-000	2.5	21.0	.25 (.010)	18	3.5-7.0	+40	5000	> 1000	500	18.6 (.732)	21.3 (.839)
10-1107-25023-000	2.6	23.5	.25 (.010)	20	3.5-7.0	+40	5000	> 1000	500	19.9 (.783)	21.3 (.839)

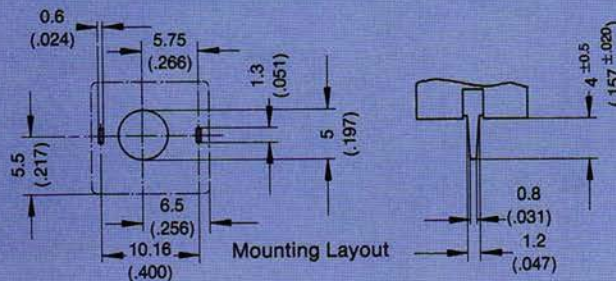
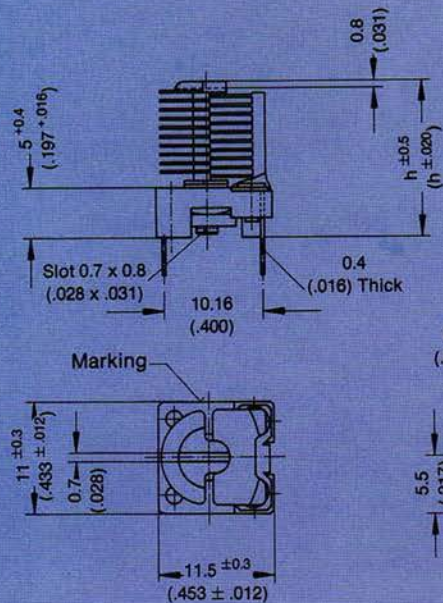


TRIM-TRONICS INC

10 1108 20....



Printed Circuit Mounting



Rotor

Precision turned out of solid brass-extrusion, galvanic silver-plated. Rotor lead terminal is riveted to the brass bushing, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.

Stator

Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.

Ceramic Base Mounting

High density steatite, silicone impregnated for better electrical properties.

Termination

Rotor and Stator pin leads for printed circuit board mounting.

Adjustments

Adjustable from both sides.

Marking

Nominal capacitance in pF.

Mechanical and Electrical Data

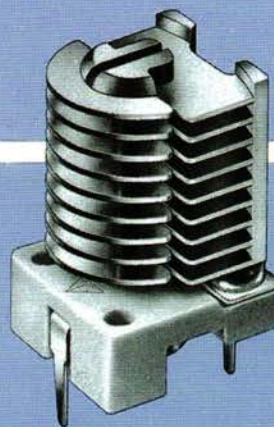
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-4}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1108-20005-000	1.5	5.0	.20 (.008)	4	3.5-7.0	+80	5000	> 1000	300	8.7 (.343)	10.4 (.409)
10-1108-20008-000	1.6	8.0	.20 (.008)	6	3.5-7.0	+80	5000	> 1000	300	9.6 (.378)	10.4 (.409)
10-1108-20011-000	1.7	11.0	.20 (.008)	8	3.5-7.0	+80	5000	> 1000	300	10.5 (.413)	13.8 (.543)
10-1108-20014-000	1.9	14.0	.20 (.008)	10	3.5-7.0	+60	5000	> 1000	300	11.4 (.449)	13.8 (.543)
10-1108-20017-000	2.0	17.0	.20 (.008)	12	3.5-7.0	+60	5000	> 1000	300	12.3 (.484)	13.8 (.543)
10-1108-20019-000	2.1	19.5	.20 (.008)	14	3.5-7.0	+60	5000	> 1000	300	13.2 (.520)	13.8 (.543)
10-1108-20023-000	2.2	23.0	.20 (.008)	16	3.5-7.0	+55	5000	> 1000	300	14.1 (.555)	16.7 (.657)
10-1108-20026-000	2.3	26.5	.20 (.008)	18	3.5-7.0	+55	5000	> 1000	300	15.0 (.591)	16.7 (.657)
10-1108-20028-000	2.4	28.5	.20 (.008)	20	3.5-7.0	+55	5000	> 1000	300	15.9 (.626)	16.7 (.657)
10-1108-20032-000	2.5	32.0	.20 (.008)	22	3.5-7.0	+50	5000	> 1000	300	16.8 (.661)	18.6 (.732)
10-1108-20034-000	2.6	34.5	.20 (.008)	24	3.5-7.0	+50	5000	> 1000	300	17.7 (.697)	18.6 (.732)

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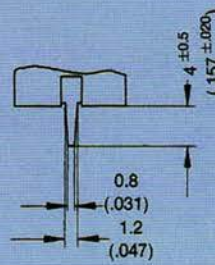
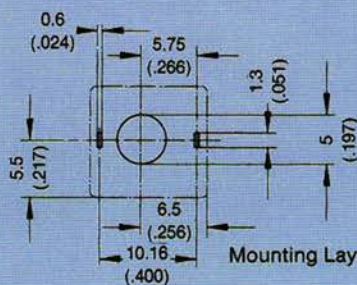
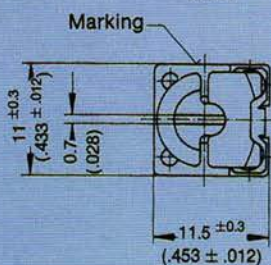
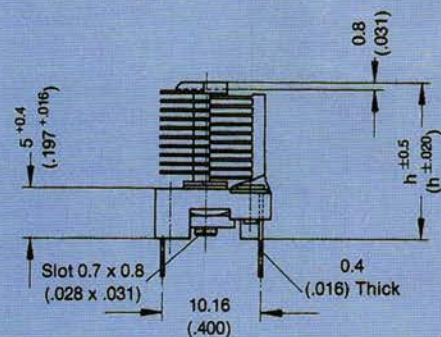


TRIM-TRONICS INC

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Printed Circuit Mounting



Rotor	Precision turned out of solid brass-extrusion, galvanic silver-plated. Rotor lead terminal is riveted to the brass bushing, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.
Stator	Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.
Ceramic Base	High density steatite, silicone impregnated for better electrical properties.
Mounting	Rotor and Stator pin leads for printed circuit board mounting.
Termination	Rotor and Stator leads silver-plated, tinned for easy soldering.
Adjustments	Adjustable from both sides.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC x10 ⁻⁶ /°C ±20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1108-25004-000	1.5	4.0	.25 (.010)	4	3.5-7.0	+70	5000	> 1000	500	9.5 (.374)	10.4 (.409)
10-1108-25006-000	1.7	6.5	.25 (.010)	6	3.5-7.0	+60	5000	> 1000	500	10.8 (.425)	13.8 (.543)
10-1108-25008-000	1.8	8.8	.25 (.010)	8	3.5-7.0	+50	5000	> 1000	500	12.1 (.476)	13.8 (.543)
10-1108-25010-000	1.9	10.8	.25 (.010)	10	3.5-7.0	+50	5000	> 1000	500	13.4 (.528)	13.8 (.543)
10-1108-25013-000	2.1	13.3	.25 (.010)	12	3.5-7.0	+50	5000	> 1000	500	14.7 (.579)	16.7 (.657)
10-1108-25016-000	2.2	16.0	.25 (.010)	14	3.5-7.0	+50	5000	> 1000	500	16.0 (.630)	16.7 (.657)
10-1108-25018-000	2.3	18.5	.25 (.010)	16	3.5-7.0	+50	5000	> 1000	500	17.3 (.681)	18.6 (.732)
10-1108-25021-000	2.5	21.0	.25 (.010)	18	3.5-7.0	+40	5000	> 1000	500	18.6 (.732)	21.3 (.839)
10-1108-25023-000	2.6	23.5	.25 (.010)	20	3.5-7.0	+40	5000	> 1000	500	19.9 (.783)	21.3 (.839)

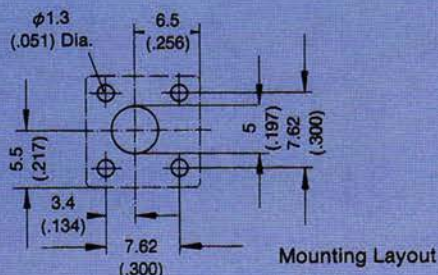
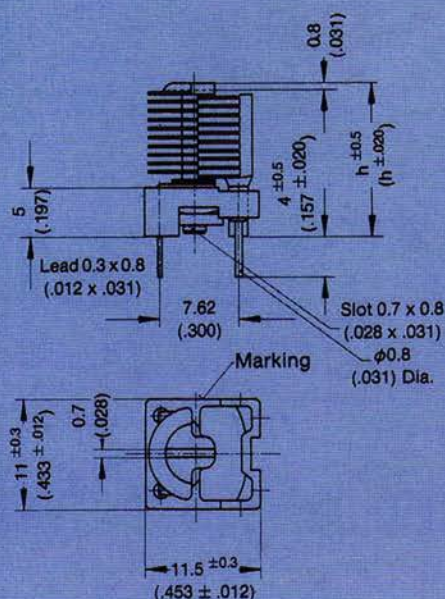


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Printed Circuit Mounting, Double Leads



Mounting Layout

- Rotor** Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor terminal is soldered to the brass bushing, which is riveted to the ceramic base, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.
- Stator** Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.
- Ceramic Base** High density steatite, silicone impregnated for better electrical properties.
- Mounting** Two Rotor and two Stator pin leads for printed circuit board mounting.
- Termination** Two Rotor and two Stator leads silver-plated, tinned for easy soldering. This design provides low inductance.
- Adjustments** Adjustable from both sides.
- Marking** Nominal capacitance in pF.

Mechanical and Electrical Data

Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-4}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1111-20005-000	1.5	5.0	.20 (.008)	4	3.5-7.0	+80	5000	> 1000	300	9.2 (.362)	10.4 (.409)
10-1111-20008-000	1.6	8.0	.20 (.008)	6	3.5-7.0	+80	5000	> 1000	300	10.1 (.398)	13.8 (.543)
10-1111-20011-000	1.7	11.0	.20 (.008)	8	3.5-7.0	+80	5000	> 1000	300	11.0 (.433)	13.8 (.543)
10-1111-20014-000	1.9	14.0	.20 (.008)	10	3.5-7.0	+80	5000	> 1000	300	11.9 (.469)	13.8 (.543)
10-1111-20017-000	2.0	17.0	.20 (.008)	12	3.5-7.0	+80	5000	> 1000	300	12.8 (.504)	13.8 (.543)
10-1111-20019-000	2.1	19.5	.20 (.008)	14	3.5-7.0	+80	5000	> 1000	300	13.7 (.539)	16.7 (.657)
10-1111-20023-000	2.2	23.0	.20 (.008)	16	3.5-7.0	+55	5000	> 1000	300	14.6 (.575)	16.7 (.657)
10-1111-20026-000	2.3	26.5	.20 (.008)	18	3.5-7.0	+55	5000	> 1000	300	15.5 (.610)	16.7 (.657)
10-1111-20028-000	2.4	28.5	.20 (.008)	20	3.5-7.0	+55	5000	> 1000	300	16.4 (.646)	18.6 (.732)
10-1111-20032-000	2.5	32.0	.20 (.008)	22	3.5-7.0	+50	5000	> 1000	300	17.3 (.681)	18.6 (.732)
10-1111-20034-000	2.6	34.5	.20 (.008)	24	3.5-7.0	+50	5000	> 1000	300	18.2 (.717)	21.3 (.839)

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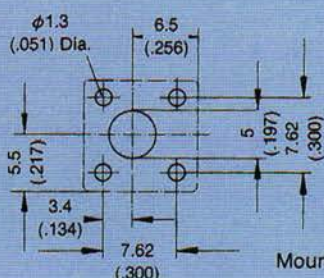
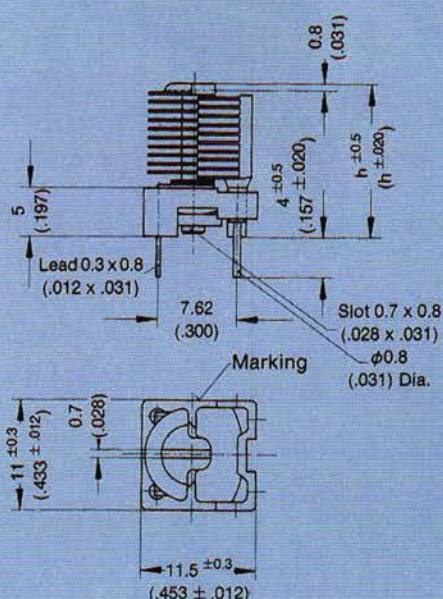


TRIM-TRONICS INC

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Printed Circuit Mounting, Double Leads



Mounting Layout

Rotor	Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor terminal is soldered to the brass bushing, which is riveted to the ceramic base, providing large contact area for a higher Q factor. Separate rotor-spring for more uniform torque range.
Stator	Precision milled out of solid brass-extrusion, galvanic silver-plated, soldered to solid brass rivets which are shrink-fitted into the ceramic base.
Ceramic Base	High density steatite, silicone impregnated for better electrical properties.
Mounting	Two Rotor and two Stator pin leads for printed circuit board mounting.
Termination	Two Rotor and two Stator leads silver-plated, tinned for easy soldering. This design provides low inductance.
Adjustments	Adjustable from both sides.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

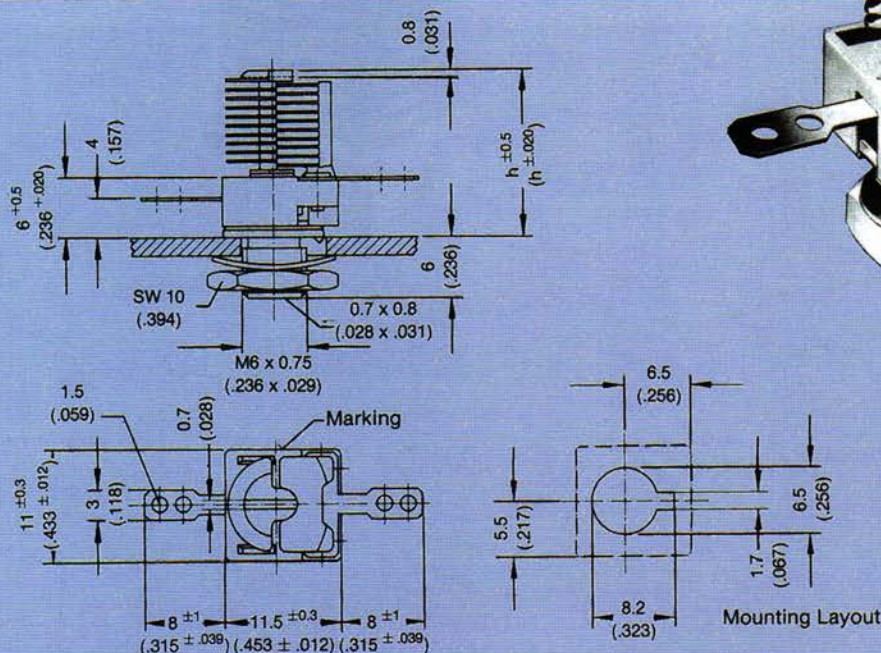
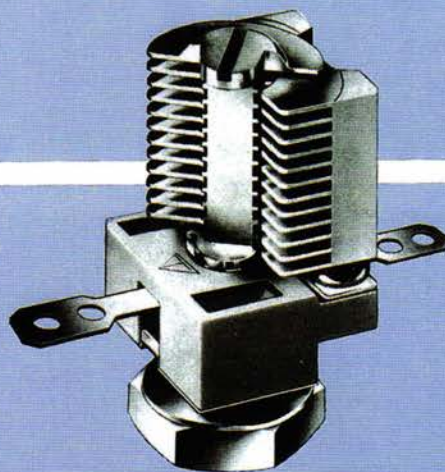
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC x10 ⁻⁴ /°C ±20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust-cap mm (inch)
10-1111-25004-000	1.5	4.0	.25 (.010)	4	3.5-7.0	+70	5000	> 1000	500	10.0 (.394)	13.8 (.543)
10-1111-25006-000	1.7	6.5	.25 (.010)	6	3.5-7.0	+60	5000	> 1000	500	11.3 (.445)	13.8 (.543)
10-1111-25008-000	1.8	8.8	.25 (.010)	8	3.5-7.0	+50	5000	> 1000	500	12.6 (.496)	13.8 (.543)
10-1111-25010-000	1.9	10.8	.25 (.010)	10	3.5-7.0	+50	5000	> 1000	500	13.9 (.547)	16.7 (.657)
10-1111-25013-000	2.1	13.3	.25 (.010)	12	3.5-7.0	+50	5000	> 1000	500	15.2 (.598)	16.7 (.657)
10-1111-25016-000	2.2	16.0	.25 (.010)	14	3.5-7.0	+50	5000	> 1000	500	16.5 (.650)	18.6 (.732)
10-1111-25018-000	2.3	18.5	.25 (.010)	16	3.5-7.0	+50	5000	> 1000	500	17.8 (.701)	18.6 (.732)
10-1111-25021-000	2.5	21.0	.25 (.010)	18	3.5-7.0	+40	5000	> 1000	500	19.1 (.752)	21.3 (.839)
10-1111-25023-000	2.6	23.5	.25 (.010)	20	3.5-7.0	+40	5000	> 1000	500	20.4 (.803)	21.3 (.839)

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TRIM-TRONICS INC

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Rotor Stator

Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor is snug fit in brass bushing. Precision turned out of solid brass-extrusion, galvanic silver-plated, soldered to rivets that are shrink fitted into the ceramic base.

Ceramic Base Mounting

High density steatite, silicone impregnated for better electrical properties.

Termination Adjustments

Central mounting with disc spring bushing and hex nut. Maximum tightening torque 100 Ncm (140 oz. ins). Rotor and stator leads silver-plated tinned for easy soldering.

Marking

Adjustable from both sides.
Nominal capacitance in pF.

Mechanical and Electrical Data

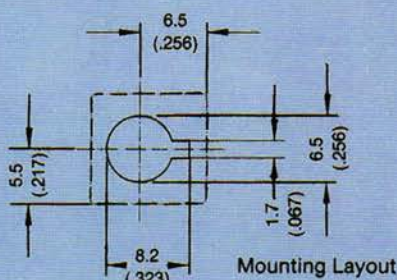
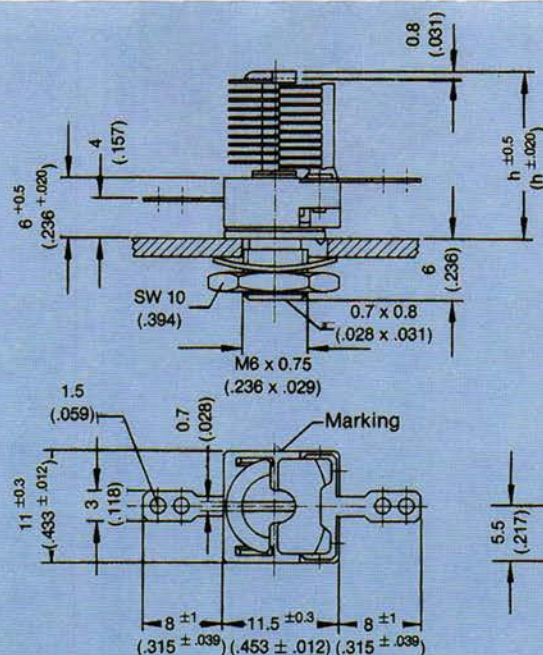
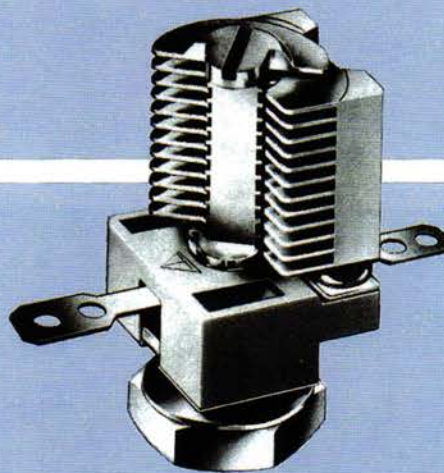
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust cover mm (inch)
10-1114-20005-000	1.8	5.6	.20 (.008)	4	3.5-7.0	+ 80	5000	>1000	300	9.7 (.382)	11.4 (.449)
10-1114-20008-000	1.9	8.5	.20 (.008)	6	3.5-7.0	+ 80	5000	>1000	300	10.6 (.417)	11.4 (.449)
10-1114-20011-000	2.0	11.5	.20 (.008)	8	3.5-7.0	+ 80	5000	>1000	300	11.5 (.453)	14.8 (.583)
10-1114-20014-000	2.1	14.8	.20 (.008)	10	3.5-7.0	+ 60	5000	>1000	300	12.4 (.488)	14.8 (.583)
10-1114-20017-000	2.3	17.5	.20 (.008)	12	3.5-7.0	+ 60	5000	>1000	300	13.3 (.524)	14.8 (.583)
10-1114-20019-000	2.4	20.3	.20 (.008)	14	3.5-7.0	+ 60	5000	>1000	300	14.2 (.559)	14.8 (.583)
10-1114-20023-000	2.6	24.0	.20 (.008)	16	3.5-7.0	+ 55	5000	>1000	300	15.1 (.594)	17.7 (.697)
10-1114-20026-000	2.7	27.0	.20 (.008)	18	3.5-7.0	+ 55	5000	>1000	300	16.0 (.630)	17.7 (.697)
10-1114-20028-000	2.8	29.0	.20 (.008)	20	3.5-7.0	+ 55	5000	>1000	300	16.9 (.665)	17.7 (.697)
10-1114-20032-000	2.9	32.5	.20 (.008)	22	3.5-7.0	+ 50	5000	>1000	300	17.8 (.701)	19.6 (.772)
10-1114-20034-000	2.9	35.0	.20 (.008)	24	3.5-7.0	+ 50	5000	>1000	300	18.7 (.736)	19.6 (.772)

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TRIM-TRONICS INC

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**Rotor
Stator**

Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor is snug fit in brass bushing. Precision turned out of solid brass-extrusion, galvanic silver-plated, soldered to rivets that are shrink fitted into the ceramic base.

**Ceramic Base
Mounting
Termination
Adjustments
Marking**

High density steatite, silicone impregnated for better electrical properties.
Central mounting with disc spring bushing and hex nut. Maximum tightening torque 100 Ncm (140 oz. ins).
Rotor and stator leads silver-plated tinned for easy soldering.
Adjustable from both sides.
Nominal capacitance in pF.

Mechanical and Electrical Data

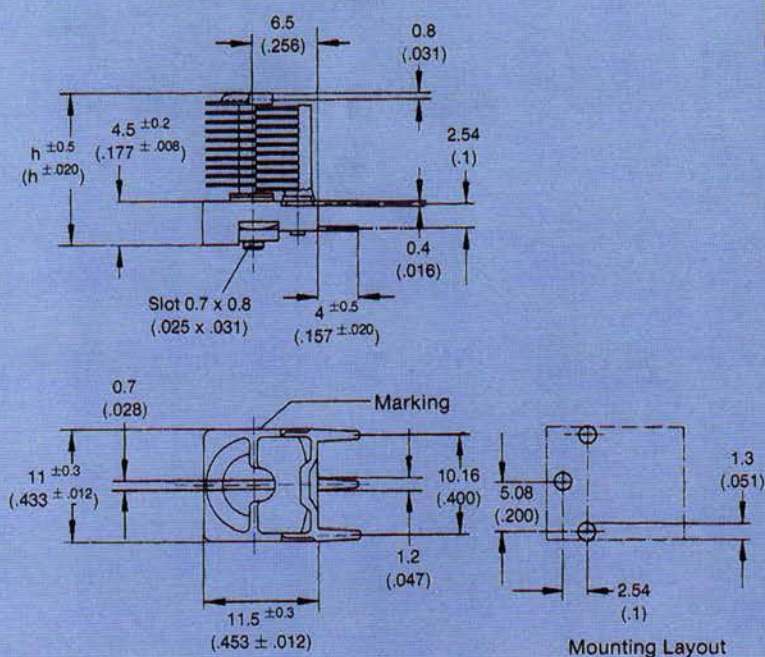
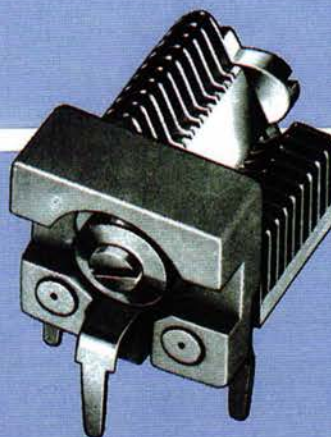
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust cover mm (inch)
10-1114-25004-000	1.9	4.3	.25 (.010)	4	3.5-7.0	+70	5000	>1000	500	10.5 (.413)	11.4 (.449)
10-1114-25006-000	2.1	6.8	.25 (.010)	6	3.5-7.0	+60	5000	>1000	500	11.8 (.465)	14.8 (.583)
10-1114-25008-000	2.2	9.1	.25 (.010)	8	3.5-7.0	+50	5000	>1000	500	13.1 (.516)	14.8 (.583)
10-1114-25010-000	2.3	11.2	.25 (.010)	10	3.5-7.0	+50	5000	>1000	500	14.4 (.567)	17.7 (.697)
10-1114-25013-000	2.5	13.8	.25 (.010)	12	3.5-7.0	+50	5000	>1000	500	15.7 (.618)	17.7 (.697)
10-1114-25016-000	2.6	16.5	.25 (.010)	14	3.5-7.0	+50	5000	>1000	500	17.0 (.669)	17.7 (.697)
10-1114-25018-000	2.7	19.0	.25 (.010)	16	3.5-7.0	+50	5000	>1000	500	18.3 (.720)	19.6 (.772)
10-1114-25021-000	2.8	21.5	.25 (.010)	18	3.5-7.0	+40	5000	>1000	500	19.6 (.772)	22.3 (.878)
10-1114-25023-000	2.9	24.0	.25 (.010)	20	3.5-7.0	+40	5000	>1000	500	20.9 (.823)	22.3 (.878)

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Rotor Stator

Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor is snug fit in brass bushing. Precision turned out of solid brass-extrusion, galvanic silver-plated, soldered to rivets shrink fitted into the ceramic base.

Ceramic Base Mounting

High density steatite, silicone impregnated for better electrical properties. With one rotor and two stator leads for printed circuit board mounting.

Termination Adjustments Marking

With one rotor and two stator leads tinned for easy soldering. Adjustable from both sides. Nominal capacitance in pF.

Mechanical and Electrical Data

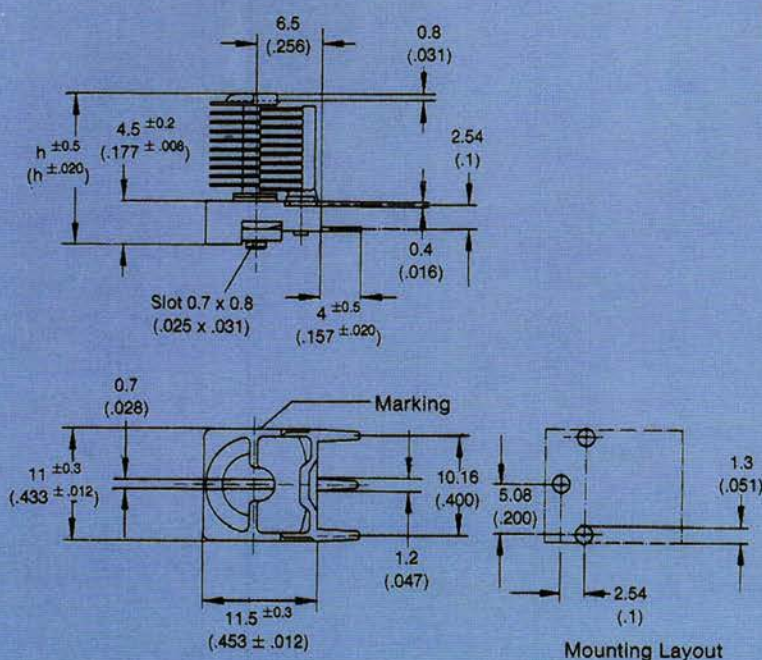
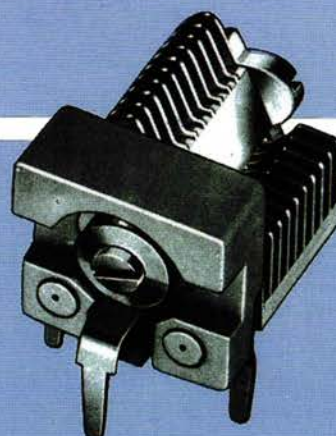
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust cover mm (inch)
10-1116-20005-000	1.7	5.6	.20 (.008)	4	3.5-7.0	+80	5000	>1000	300	8.2 (.323)	13.8 (.543)
10-1116-20008-000	1.8	8.5	.20 (.008)	6	3.5-7.0	+80	5000	>1000	300	9.1 (.358)	13.8 (.543)
10-1116-20011-000	1.9	11.0	.20 (.008)	8	3.5-7.0	+80	5000	>1000	300	10.0 (.394)	13.8 (.543)
10-1116-20014-000	2.0	14.5	.20 (.008)	10	3.5-7.0	+60	5000	>1000	300	10.9 (.429)	13.8 (.543)
10-1116-20017-000	2.1	17.0	.20 (.008)	12	3.5-7.0	+60	5000	>1000	300	11.8 (.465)	13.8 (.543)
10-1116-20019-000	2.3	20.0	.20 (.008)	14	3.5-7.0	+60	5000	>1000	300	12.7 (.500)	13.8 (.543)
10-1116-20023-000	2.4	24.0	.20 (.008)	16	3.5-7.0	+55	5000	>1000	300	13.6 (.535)	16.8 (.661)
10-1116-20026-000	2.5	26.5	.20 (.008)	18	3.5-7.0	+55	5000	>1000	300	14.5 (.571)	16.8 (.661)
10-1116-20028-000	2.7	29.0	.20 (.008)	20	3.5-7.0	+55	5000	>1000	300	15.4 (.606)	16.8 (.661)
10-1116-20032-000	2.8	32.0	.20 (.008)	22	3.5-7.0	+50	5000	>1000	300	16.3 (.642)	18.6 (.732)
10-1116-20034-000	2.8	35.0	.20 (.008)	24	3.5-7.0	+50	5000	>1000	300	17.2 (.677)	18.6 (.732)

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TRIM-TRONICS INC

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**Rotor
Stator**

Precision turned out of solid brass-extrusion, galvanic silver-plated. The rotor is snug fit in brass bushing. Precision turned out of solid brass-extrusion, galvanic silver-plated, soldered to rivets shrink fitted into the ceramic base.

**Ceramic Base
Mounting**

High density steatite, silicone impregnated for better electrical properties.

**Termination
Adjustments**

With one rotor and two stator leads for printed circuit board mounting.

With one rotor and two stator leads tinned for easy soldering.

Marking

Adjustable from both sides.

Nominal capacitance in pF.

Mechanical and Electrical Data

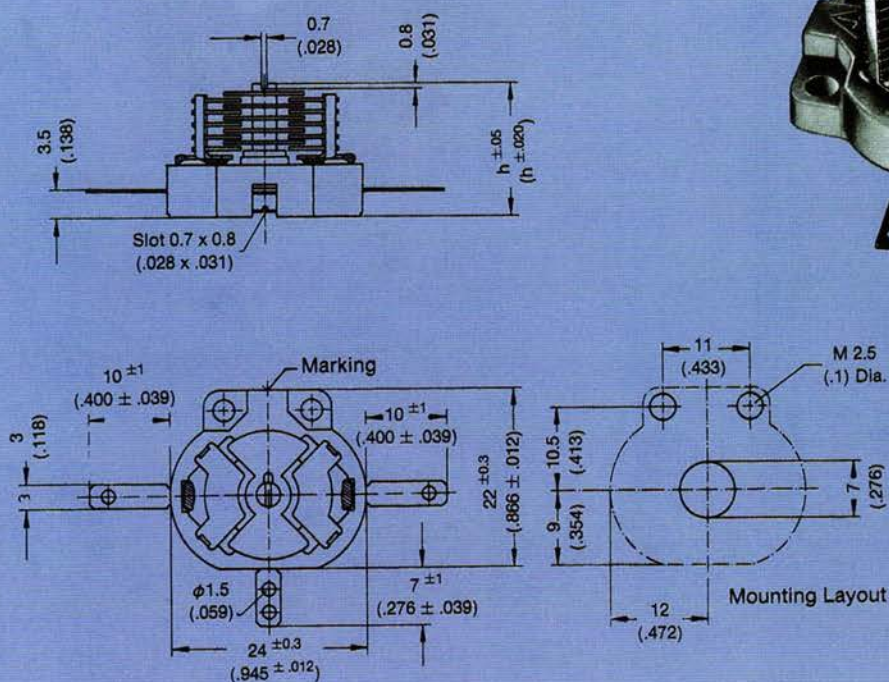
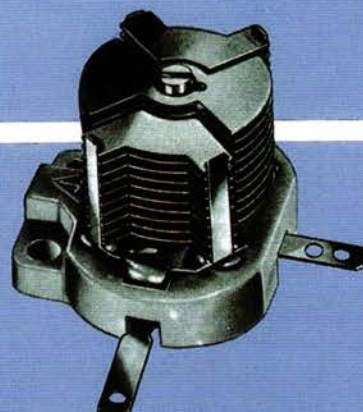
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)	Height H w/dust cover mm (inch)
10-1116-25004-000	1.7	4.0	.25 (.010)	4	3.5-7.0	+ 70	5000	>1000	500	9.0 (.354)	13.8 (.543)
10-1116-25006-000	1.9	6.5	.25 (.010)	6	3.5-7.0	+ 60	5000	>1000	500	10.3 (.406)	13.8 (.543)
10-1116-25008-000	2.0	8.8	.25 (.010)	8	3.5-7.0	+ 50	5000	>1000	500	11.6 (.457)	13.8 (.543)
10-1116-25010-000	2.1	10.8	.25 (.010)	10	3.5-7.0	+ 50	5000	>1000	500	12.9 (.508)	13.8 (.543)
10-1116-25013-000	2.3	13.3	.25 (.010)	12	3.5-7.0	+ 50	5000	>1000	500	14.2 (.559)	16.8 (.661)
10-1116-25016-000	2.5	16.5	.25 (.010)	14	3.5-7.0	+ 50	5000	>1000	500	15.5 (.610)	16.8 (.661)
10-1116-25018-000	2.7	19.0	.25 (.010)	16	3.5-7.0	+ 50	5000	>1000	500	16.8 (.661)	18.6 (.732)
10-1116-25021-000	2.8	21.5	.25 (.010)	18	3.5-7.0	+ 40	5000	>1000	500	18.1 (.713)	20.8 (.819)
10-1116-25023-000	2.9	24.0	.25 (.010)	20	3.5-7.0	+ 40	5000	>1000	500	19.4 (.764)	20.8 (.819)



TRIM-TRONICS INC

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10 2201 80 ■■■ ■■■



Rotor
Stator
Ceramic Base
Mounting
Termination
Adjustments
Marking

Plates made from alloy are soldered into slots on the rotor shaft which is snug fit in a brass bushing.
Plates made from alloy are soldered onto a brass frame.
High density steatite, silicone impregnated for better electrical properties.
With two screws including washer and nut. Must be ordered separate.
One rotor and one stator lead for each section tinned for easy soldering.
Adjustable from both sides.
Nominal capacitance in pF.

Mechanical and Electrical Data

Type	Stator/Stator		Air Gap mm (inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(inch)
10-2201-25003-000	1.1	3.5	.25 (.010)	2 x 3	3	3.5-7.0	+ 45	5000	>1000	500	14.5	(.571)
10-2201-25006-000	1.3	6.0	.25 (.010)	2 x 5	5	3.5-7.0	+ 45	5000	>1000	500	18.3	(.720)
10-2201-25012-000	1.5	12.5	.25 (.010)	2 x 10	10	3.5-7.0	+ 45	5000	>1000	500	23.8	(.937)

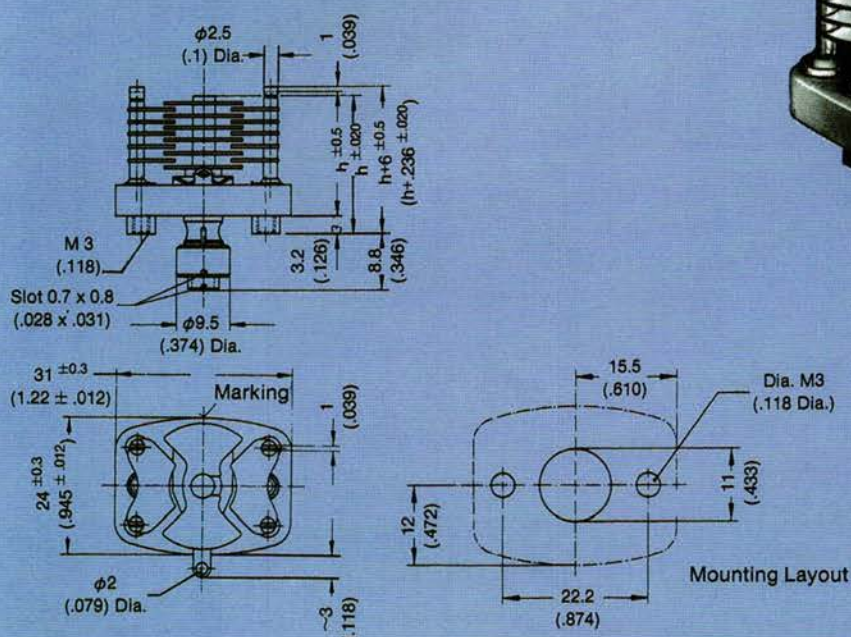
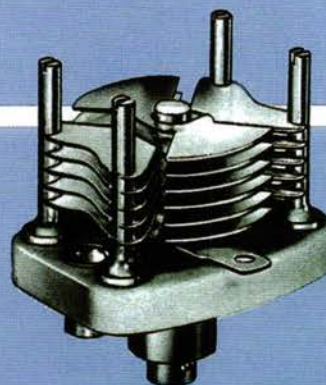
Type	Stator/Stator		Air Gap mm (inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(inch)
10-2201-80002-000	1.0	1.9	.80 (.031)	2 x 3	3	3.5-7.0	+ 30	5000	>1000	1000	15.9	(.626)
10-2201-80003-000	1.2	2.8	.80 (.031)	2 x 5	5	3.5-7.0	+ 30	5000	>1000	1000	21.1	(.831)

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TRIM-TRONICS INC

10 2404 55



Rotor
Stator
Ceramic Base
Mounting
Termination
Adjustments
Marking

Silver-plated brass plates soldered into slots on rotor shaft, snug fit into brass bushing.
Silver-plated brass plates soldered to brass mounting pins.
High density steatite, silicone impregnated for better electrical properties.
With two screws including washer and nut. Must be ordered separately.
One rotor soldering tab and two stator mounting pins.
Adjustable by shaft.
Nominal capacitance in pF.

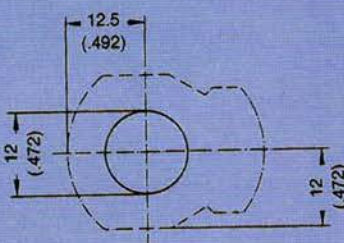
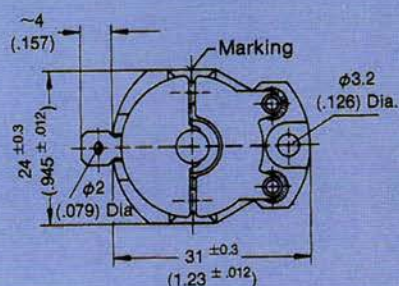
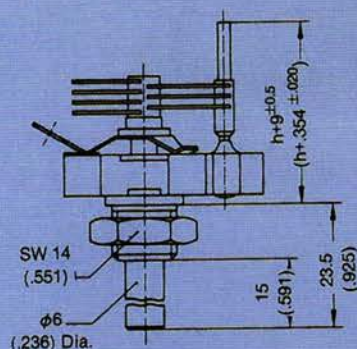
Mechanical and Electrical Data

Type	Stator/Stator		Air Gap mm (Inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(Inch)
10-2404-55014-000	3.0	14.0	.55 (.022)	2 x 5	6	4.25-14.0	+ 65	5000	>1000	1000	24.0	(.945)



TRIM-TRONICS INC

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Mounting Layout

Rotor

Stator

Ceramic Base

Mounting

Termination

Adjustments

Marking

Silver-plated brass plates soldered into slots on rotor shaft, snug fit into brass bushing.

Silver-plated brass plates soldered to brass mounting pins.

High density steatite, silicone impregnated for better electrical properties.

Central mounting with a M10 x .75 mounting nut. Maximum tightening torque 100 Ncm (140 oz. in.).

One rotor solder tab and stator solder pins.

Adjustable by extended rotor shaft.

Nominal capacitance in pF.

Mechanical and Electrical Data

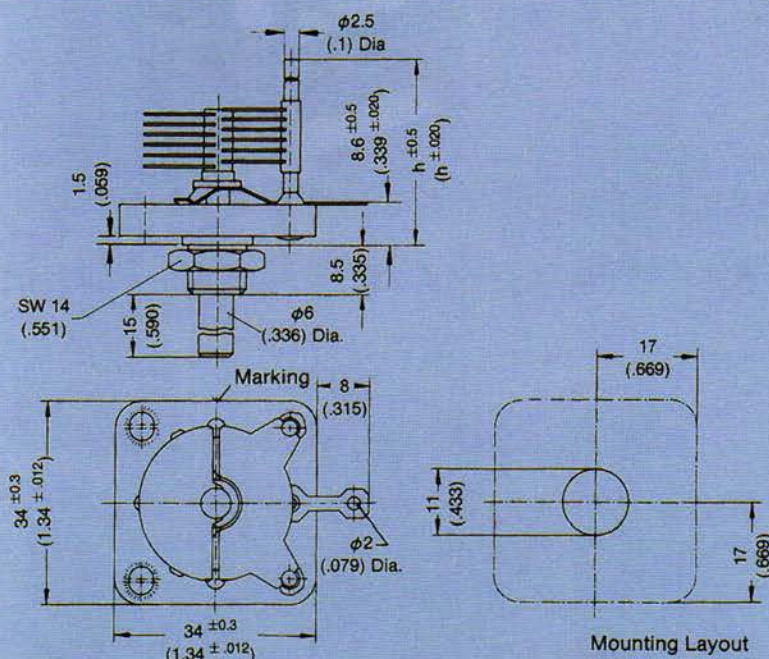
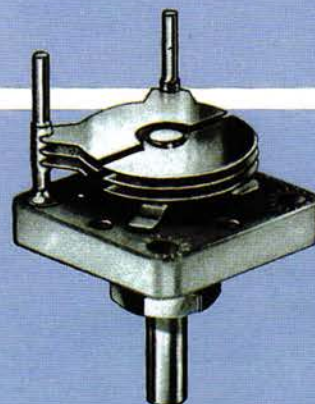
Type	C (min) pF	C (max) pF	Air Gap mm (inch)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 30	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
										mm	(inch)
10-2421-40020-000	3.5	23.0	.40 (.010)	7	4.25-14.0	+ 45	5000	>1000	750	18.9	(.744)
10-2421-40050-000	4.5	50.0	.40 (.010)	15	4.25-14.0	+ 45	5000	>1000	750	25.9	(1.020)
10-2421-40070-000	6.0	70.0	.40 (.010)	19	4.25-14.0	+ 45	5000	>1000	750	29.1	(1.146)
10-2421-40090-000	6.5	93.0	.40 (.010)	27	4.25-14.0	+ 45	5000	>1000	750	34.7	(1.366)
10-2421-40140-000	8.5	142.0	.40 (.010)	39	4.25-14.0	+ 45	5000	>1000	750	45.3	(1.783)



TRIM-TRONICS INC

10 3411 50 ■■■ ■■■

10 3411 81 ■■■ ■■■



Rotor	Silver-plated brass plates soldered into slots on rotor shaft, snug fit into brass bushing.
Stator	Silver-plated brass plates soldered to brass mounting pins.
Ceramic Base	High density steatite, silicone impregnated for better electrical properties.
Mounting	Central mounting with a M10 x .75 mounting nut. Maximum tightening torque 100 Ncm (140 oz. in.).
Termination	One rotor solder tab and two stator solder pins.
Adjustments	Adjustable by extended rotor shaft.
Marking	Nominal capacitance in pF.

Mechanical and Electrical Data

Type	C (min) pF	C (max) pF	Air Gap mm (inches)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 30	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)
10-3411-50020-000	3.5	24.0	.50 (.020)	6	4.25-14.0	+ 60	5000	>1000	1000	17.9 (.705)
10-3411-50050-000	4.5	50.0	.50 (.020)	12	4.25-14.0	+ 60	5000	>1000	1000	23.3 (.917)
10-3411-50100-000	7.5	100.0	.50 (.020)	24	4.25-14.0	+ 60	5000	>1000	1000	34.1 (1.34)
10-3411-50140-000	10.0	146.0	.50 (.020)	34	4.25-14.0	+ 60	5000	>1000	1000	43.1 (1.70)

Type	C (min) pF	C (max) pF	Air Gap mm (inches)	Total Plates	Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 30	Q 1MHz	IR MOhm	Test Voltage RMS	Height h mm (inch)
10-3411-81013-000	4.5	13.5	1.40 (.055)	8	4.25-14.0	+ 20	5000	>1000	2000	25.0 (1.0)
10-3411-81030-000	6.5	30.0	1.40 (.055)	17	4.25-14.0	+ 20	5000	>1000	2000	40.5 (1.59)

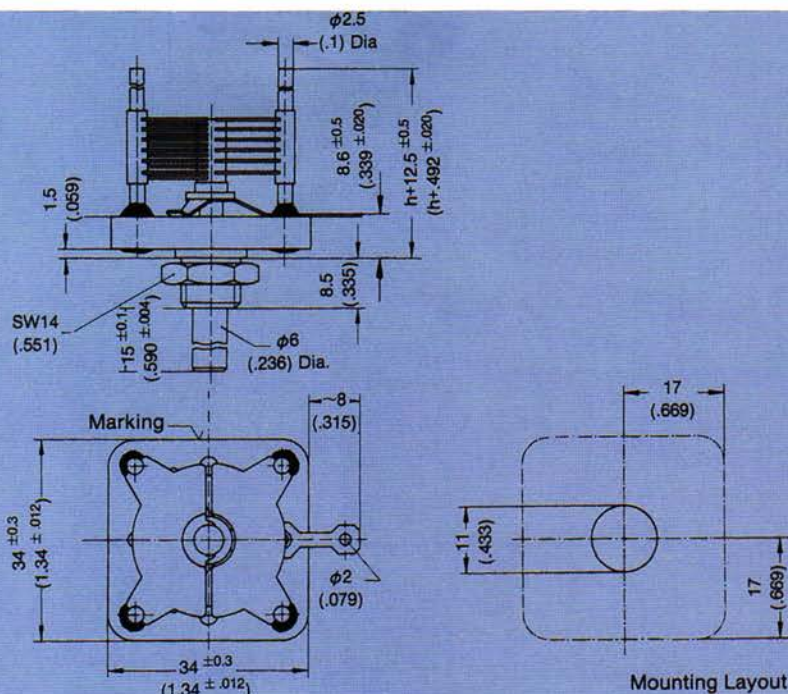
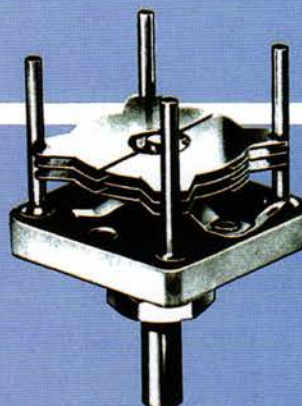
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TRIM-TRONICS INC

10 3412 50 ■■■ ■■■

10 3412 81 ■■■ ■■■



Rotor
Stator
Ceramic Base
Mounting
Termination
Adjustments
Marking

Silver-plated brass plates soldered into slots on rotor shaft, snug fit into brass bushing.
Silver-plated brass plates soldered to brass mounting pins.
High density steatite, silicone impregnated for better electrical properties.
Central mounting with a M10 x .75 mounting nut. Maximum tightening torque 100 Ncm (140 oz. in.).
One rotor soldering tab and four stator solder pins.
Adjustment is by extended shaft.
Nominal capacitance in pF.

Mechanical and Electrical Data

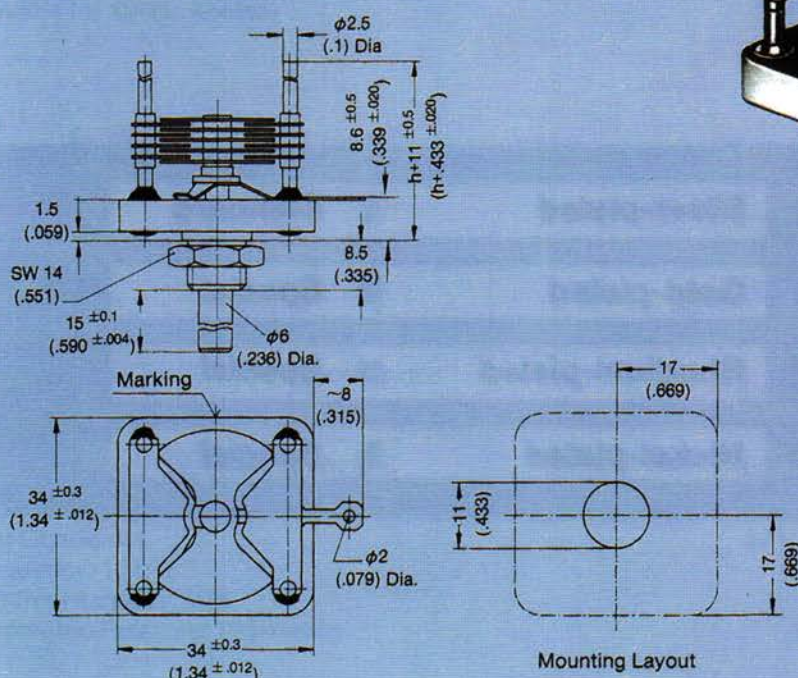
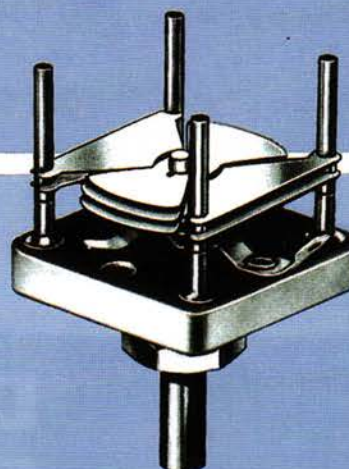
Type	Rotor/Stator		Air Gap mm (inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(inch)
10-3412-50020-000	3.5	24.0	.50 (.020)	2 x 3	3	4.25-14.0	+ 30	5000	>1000	1000	20.6	(.811)
10-3412-50050-000	4.5	50.0	.50 (.020)	2 x 6	6	4.25-14.0	+ 30	5000	>1000	1000	23.8	(.937)
10-3412-50100-000	7.5	100.0	.50 (.020)	2 x 12	12	4.25-14.0	+ 30	5000	>1000	1000	33.1	(1.30)
10-3412-50140-000	10.0	146.0	.50 (.020)	2 x 17	17	4.25-14.0	+ 30	5000	>1000	1000	43.1	(1.70)

Type	Rotor/Stator		Air Gap mm (inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(inch)
10-3412-81012-000	4.5	13.5	1.40 (.055)	2 x 4	4	4.25-14.0	+ 20	5000	>1000	2000	26.0	(1.02)
10-3412-81022-000	6.0	24.0	1.40 (.055)	2 x 7	7	4.25-14.0	+ 20	5000	>1000	2000	37.0	(1.46)
10-3412-81030-000	7.0	30.0	1.40 (.055)	2 x 9	8	4.25-14.0	+ 20	5000	>1000	1000	41.0	(1.61)



TRIM-TRONICS INC

10 3416 75 ■ ■ ■ ■ ■



Rotor
Stator
Ceramic Base
Mounting
Termination
Adjustments
Marking

Silver-plated brass plates soldered into slots on rotor shaft, snug fit into brass bushing.
Silver-plated brass plates soldered to brass mounting pins.
High density steatite, silicone impregnated for better electrical properties.
Central mounting with a M10 x .75 mounting nut. Maximum tightening torque 100 Ncm (140 oz. in.).
One rotor soldering tab and four stator solder pins.
Adjustment is by extended shaft.
Nominal capacitance in pF.

Mechanical and Electrical Data

Type	Stator/Stator		Air Gap mm (inch)	Number of Plates		Torque In. Oz.	TC $\times 10^{-6}/^{\circ}\text{C}$ ± 20	Q 1MHz	IR MOhm	Test Voltage RMS	Height h	
	C (min) pF	C (max) pF		Stator	Rotor						mm	(inch)
10-3416-75008-000	1.8	8.0	.75 (.030)	2 x 4	5	4.25-14.0	+ 40	5000	>1000	1000	24.0	(.945)
10-3416-75020-000	3.5	20.0	.75 (.030)	2 x 11	12	4.25-14.0	+ 40	5000	>1000	1000	40.0	(1.57)
10-3416-75040-000	6.0	40.0	.75 (.030)	2 x 22	23	4.25-14.0	+ 40	5000	>1000	1000	65.0	(2.56)



TRIM-TRONICS INC

SPECIAL DESIGNS FOR:

10 1107 20... 10 1108 20... 10 1111 25...
10 1107 25... 10-1108 25... 10 1111 25...

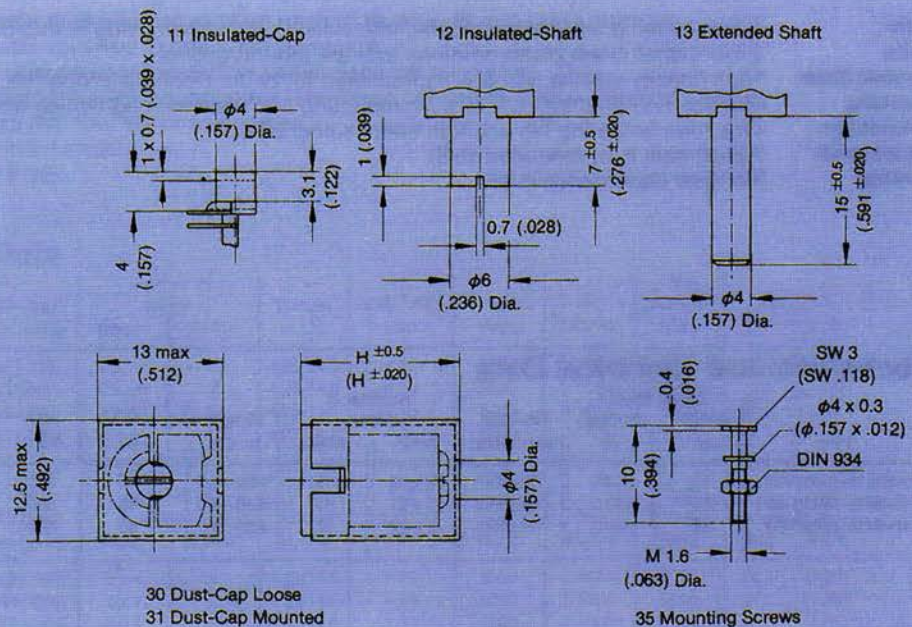
SURFACE FINISHES:

Shown in 12th position
of the part number

0	Silver-plated	Standard
1	Gold-plated	Special
2	Rhodium-plated	Special
3	Nickel-plated	Special

SPECIAL DESIGN:

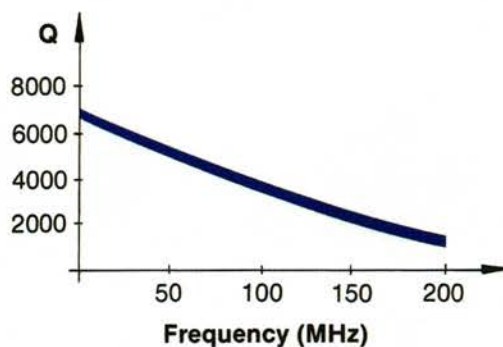
Shown in 13th & 14th
position of part number





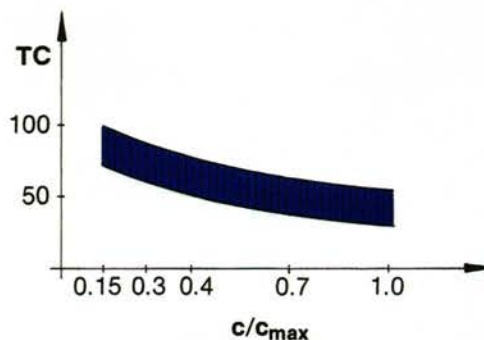
TYPICAL PERFORMANCE CURVES FOR 10-11.. TRIMMER SERIES

Quality-Factor versus Frequency
(Typical for 10-11..-Series)

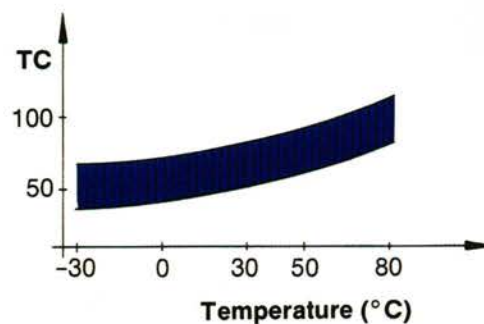


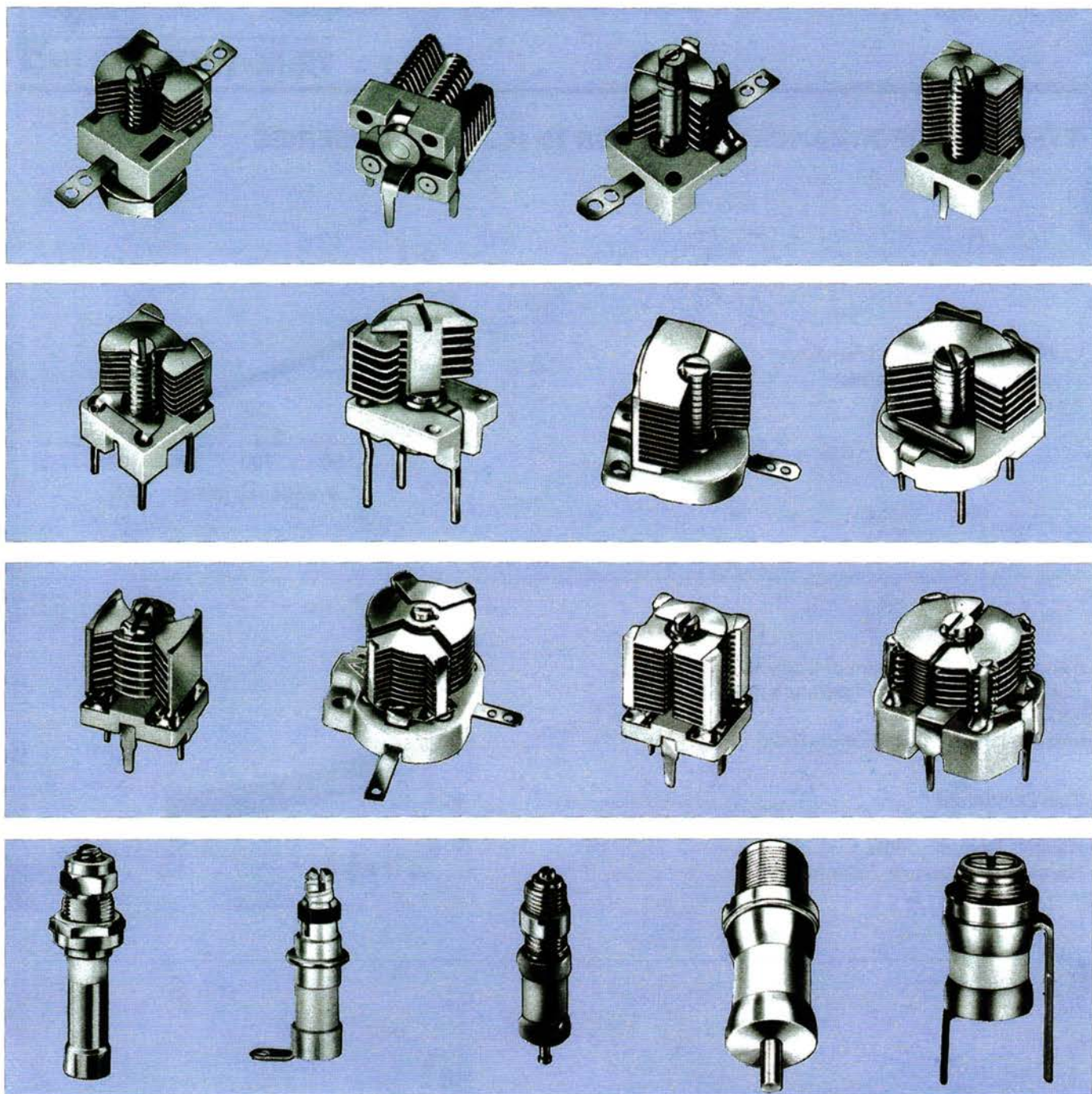
Temperature-Coefficient of Capacitance
(average value in the temperature range from
-30°C to +80°C)
versus Adjusted Capacitance Ratio

Test Conditions
Frequency: 1 MHz
Relative Humidity: 50%
Barometric Pressure: 760 mmHg



Temperature-Coefficient of Capacitance
(average value of total capacitance range)
versus Temperature





2763 ROUTE 20 EAST
CAZENOVIA, NEW YORK 13035
TEL: (315) 655-9528 / FAX: (315) 655-2149



TRIM-TRONICS INC



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 TEL (フリーダイヤル):0120-17-9629 (いーな、クロニクス)
 FAX (フリーダイヤル):0120-81-9629 (はい、クロニクス)
 E-mail : sales@chronix.co.jp
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CHRONIX

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