

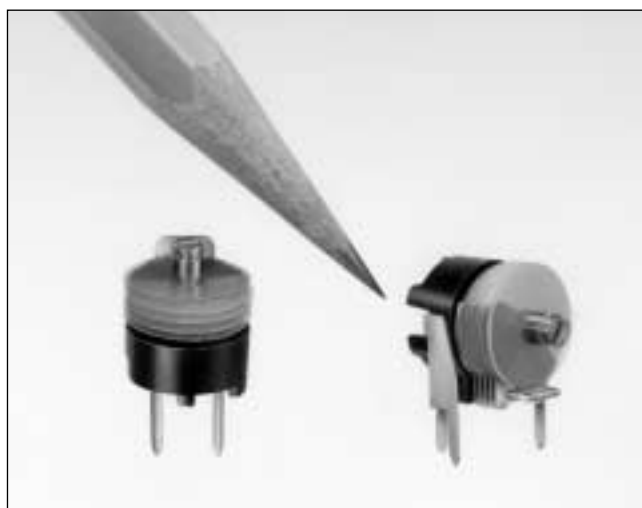
FILMTRIM[®] PLASTIC DIELECTRIC CAPACITORS

TYPES

- Six Dielectrics:
 - High temperature PTFE
 - Standard PTFE
 - Polypropylene
 - Polyimide
 - Polycarbonate
 - Polyphenyl sulfide
- SMD and lead-through-hole mounting
- Top, bottom and side mount models
- Wide capacitance ranges
- Compact sizes
- Low cost for commercial/industrial applications
- Linear capacitance change vs. rotation

APPLICATIONS

- Mobile Radios
- Transmitters
- Pagers
- Instruments
- Electronic Games
- Wireless Security and Fire Alarms
- CATV



MODIFICATIONS AND VARIATIONS AVAILABLE

- Special capacitance ranges
- Special terminal sizes and shapes
- Extended adjust shafts
- High temperature versions for PTFE
- Silver and/or gold plating



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10 mm TOP/BOTTOM & SIDE ADJUST

SPECIFICATIONS

Voltage Rating: 200 VDC (High temp PTFE),
100 VDC (all others)

Dielectric Withstanding Voltage:
300 VDC (High temp PTFE), 200 VDC (all others)

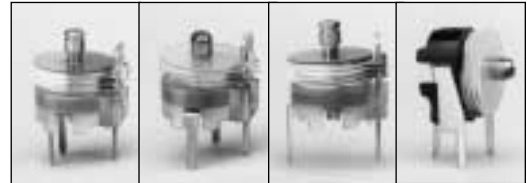
Contact Resistance: 0.010 Ohms max

Insulation Resistance: 10⁴ megohms min

Torque: 15 to 360 g-cm (0.2 to 5 oz-in)

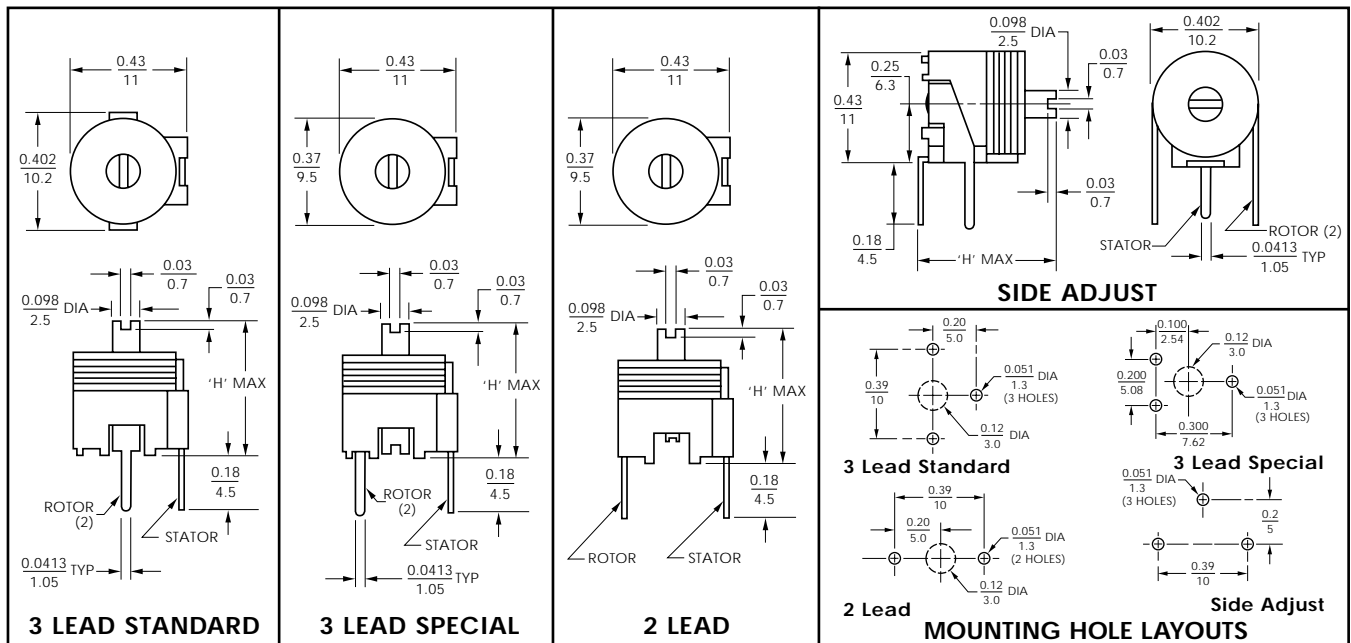
FEATURES

- Choice of dielectrics: High Temp PTFE, Standard PTFE, Polypropylene (PP), or Polycarbonate (PC)
- Linear capacitance change vs. rotation
- Wide capacitance ranges



Dielectric	Capacitance (pF)		Q min (1MHz)	TCC (ppm/°C)	Operating Temperature (°C)	'H' max in/mm	Color Code	Top/Bottom 3 Lead-Std. Model No.	Top/Bottom 3 Lead-Spec. Model No.	Top/Bottom 2 Leads Model No.	Side Model No.
	min	max									
PTFE*, High Temp	2.5	15.0	1500	0 ± 250	-40 to +125	0.402/10.2	Red	GXF15000	GXF15003	GXF15004	GXT15000
	3.0	25.0	1500	0 ± 250	-40 to +125	0.402/10.2	Clear	GXF25000	GXF25003	GXF25004	GXT25000
	4.0	40.0	1500	0 ± 250	-40 to +125	0.402/10.2	Yellow	GXF40000	GXF40003	GXF40004	GXT40000
	5.5	60.0	1500	0 ± 250	-40 to +125	0.449/11.4	Blue	GXF60000	GXF60003	GXF60004	GXT60000
	6.0	75.0	1500	0 ± 250	-40 to +125	0.449/11.4	Violet	GXF75000	GXF75003	GXF75004	GXT75000
	8.0	90.0	1500	0 ± 250	-40 to +125	0.488/12.4	Orange	GXF90000	GXF90003	GXF90004	GXT90000
PTFE	2.0	13.0	1500	0 ± 400	-40 to +85	0.402/10.2	Blue	GXC13000	GXC13003	GXC13004	GXD13000
	3.0	26.0	1500	0 ± 350	-40 to +85	0.402/10.2	Green	GXC26000	GXC26003	GXC26004	GXD26000
	3.5	38.0	1500	0 ± 300	-40 to +85	0.402/10.2	Clear	GXC38000	GXC38003	GXC38004	GXD38000
	6.0	60.0	1500	0 ± 300	-40 to +85	0.449/11.4	Yellow	GXC60000	GXC60003	GXC60004	GXD60000
	7.0	75.0	1500	0 ± 300	-40 to +85	0.449/11.4	Red	GXC75000	GXC75003	GXC75004	GXD75000
	8.0	90.0	1500	0 ± 300	-40 to +85	0.488/12.4	Violet	GXC90000	GXC90003	GXC90004	GXD90000
	10.0	150.0	1500	0 ± 300	-40 to +85	0.488/12.4	Orange	GXC15100	GXC15103	GXC15104	N/A
PP	2.0	15.0	1000	0 ± 400	-40 to +70	0.402/10.2	Blue	GYC15000	GYC15003	GYC15004	GXD15000
	3.0	20.0	1000	0 ± 400	-40 to +70	0.402/10.2	Green	GYC20000	GYC20003	GYC20004	GXD20000
	3.5	40.0	1000	0 ± 350	-40 to +70	0.402/10.2	Clear	GYC40000	GYC40003	GYC40004	GXD40000
	4.5	65.0	1000	0 ± 350	-40 to +70	0.402/10.2	Yellow	GYC65000	GYC65003	GYC65004	GXD65000
PC	8.0	80.0	200	0 ± 200	-40 to +85	0.402/10.2	Red	GZC80000	GZC80003	GZC80004	GZD80000
	9.0	100.0	200	0 ± 400	-40 to +85	0.449/11.4	Violet	GZC10100	GZC10103	GZC10104	GZD10100
	9.0	120.0	200	0 ± 350	-40 to +85	0.449/11.4	Orange	GZC12100	GZC12103	GZC12104	GZD12100
	10.0	150.0	200	0 ± 350	-40 to +85	0.472/12.0	Orange	GZC15100	GZC15103	GZC15104	GZD15100
	12.0	180.0	200	0 ± 350	-40 to +85	0.472/12.0	Orange	GZC18100	GZC18103	GZC18104	GZD18100

* Gold plated metal parts are standard on GXF and GXT models shown above.



All dimensions are in / mm.

PART NUMBERING SYSTEM

<u>GX</u>		<u>A</u>		<u>9R0</u>	<u>00</u>	
Dielectric		Form Factor		Cap Code	Modifications (Top Adjust Models)	
Symbol	Description	Symbol	Description	Industry Standard, i.e.	Symbol	Description
GC	PPS (Polyphenyl Sulfide)	A	8 mm Top/Bottom Adjust	1R6 = 1.6 pF,	01	6 x 8 mm, 2 leads, GXE and GXQ series only
GSX**	PTFE (Polytetrafluor- oethylene)	B	8 mm Side Adjust	400 = 40.0 pF,	02	8 mm, 2 leads
		C	10 mm Top/Bottom Adjust, 11 x 13 mm Top/Bottom Adjust	301 = 300.0 pF	03	10 mm, 3 lead, special
GX	PTFE (Polytetrafluor- oethylene)	D	10 mm Side Adjust		04	10 mm, 2 leads
		E*	6 x 8 mm Top/Bottom Adjust, 8 mm Top/Bottom Adjust		11	6 x 8 mm, 3 leads
GY	PP (Polypropylene)	F*	10 mm Top/Bottom Adjust		12	11 x 13 mm, housing protected (available on all 10 mm top and bottom adjust units)
GZ	PC or PI (Polycarbonate or Polyimide)	L	5 mm Top Adjust, 7 mm Economy		25	Ammo pack version for GCL only
		N	16 mm Top Adjust			
		P	16 mm Side Adjust			
		Q*	6 x 8 mm Side Adjust			
		R*	8 mm Side Adjust			
T*	10 mm Side Adjust					

* Extended temperature range: -40°C to +125°C

** GSX parts do not conform to part numbering system above.

For other modifications such as high temperature base material or special lead plating, contact factory.

SPECIFICATION NOTES

- Parts are 100% tested for capacitance range and dielectric withstanding voltage.
- Capacitance range specified is that which is guaranteed, and is measured at 1 MHz at room temperature.
- Q factor is measured at maximum rated capacitance and at room temperature.
- Dielectric strength is measured at maximum rated capacitance and room temperature, with test voltage (as listed for each model) applied for 60 seconds.
- Insulation resistance is measured at maximum rated capacitance and room temperature and at rated voltage, unless otherwise specified.
- Temperature coefficient of capacitance (TCC) is measured at 1 MHz over the operating temperature range, with capacitor set at maximum rated capacitance.
- Axial load during tuning should not exceed 200 grams force. At maximum axial load, capacitance change is no more than 15%.
- Capacitors should not be operated outside of rated capacitance range and working voltage.

Soldering and Cleaning

of FILMTRIM® Trimmer Capacitors

Soldering Methods

- Reflow soldering for GSX series
Pre-heat: 140°C ±10°C for 2 to 3 minutes.
Soldering: 200 to 250°C within 25 seconds.
(Peak soldering temperature: 250°C maximum).
- Dip soldering (does not apply to GSX models)
260°C ±10°C for 7 seconds maximum.
- Hand soldering (for lead-through-hole models)
Soldering: Tip temperature 350°C ±10°C for 3 to 4 seconds
- Hand soldering (GSX models)
Preheating: Fully preheat on a hot plate with a surface temperature of 100 to 150°C.
Soldering: 260°C ±10°C for 5 seconds maximum.

Cleaning

- Water soluble fluxes and detergents with a water flush after soldering of the boards can be used for GX, GY and GZ models.
- Do not immerse FILMTRIM models in chlorinated or fluorinated hydrocarbon solvents as this would adversely affect the plastic dielectrics and base materials. Some customers have successfully used GX models in scrubbers or sprayers where only the bottom of the printed circuit boards is exposed to solvents. If the process requires immersion in solvents for cleaning boards, the FILMTRIM capacitors should be hand soldered to board after the boards have been cleaned.