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Sprague-Goodman

ENGINEERING BULLETIN
SG-500D
Supercedes SG-500C

MICA DIELECTRIC COMPRESSION TRIMMER CAPACITORS

FEATURES

- Very large capacitance ranges
- High Q
- Good RF current handling capability
- Many forms and mounting styles

SPECIFICATIONS

Operating Temperature Range: –35°C to +85°C

Maximum Capacitance: When set at the tight position (tight defined as 28 oz-in/2.0 kg-cm), the maximum capacitance will be no less than the value indicated in the table.

Minimum Capacitance: When adjusting screw is rotated 3 turns from tight position (2 turns for types 1, 5, and 9), the minimum capacitance will be no greater than the value indicated in the table.

Voltage:	**Working** (VDC)	**Dielectric Withstanding** (VDC)
Type 1	250	500
Types 2, 3, 4	175	350
Type 5	500	1000
Types 6, 7, 8	250	500
Type 9	2000	2700

Insulation Resistance: 100,000 megohms min at 25°C

Q: Minimum Q at 1 MHz per graph (for units which have nominal maximum capacitance ≤ 1000 pF).

Dissipation Factor: Maximum DF = 0.004 at 1 kHz (for units which have nominal maximum capacitance > 1000 pF).

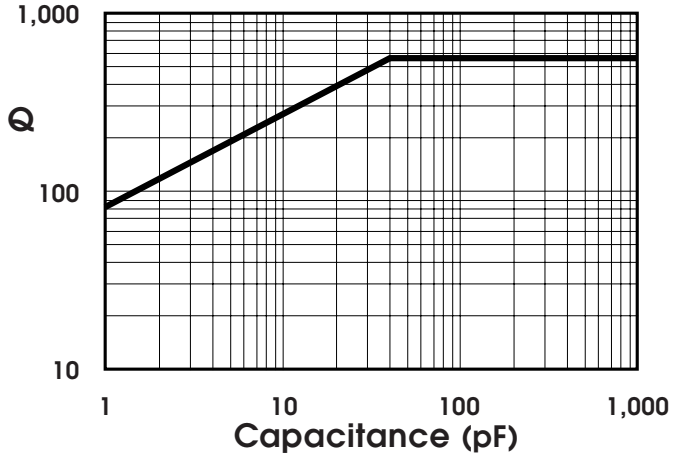
Capacitance change with temperature (capacitor set at 1/4 to 1/2 turn from the tight position):

Types 1, 5, 9 = ± (2.5% + 0.3 pF)
Types 2, 3, 4, 6, 7, 8 = ± (1.5% + 0.3 pF)

Capacitance drift with temperature (capacitor set at 1/4 to 1/2 turn from the tight position):

Types 1, 5, 9 = ± (2.0% + 0.5 pF)
Types 2, 3, 4, 6, 7, 8 = ± (1.5% + 0.5 pF)

Q vs Capacitance
(1 MHz)



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PART NUMBERING SYSTEM

GM — Mica Dielectric

A — MOUNTING STYLES

- A = Bracket mount for wired assembly
- B = Printed circuit mount, top adjust, 4 terminals
- C = Printed circuit mount, top adjust, 2 terminals
- D = Printed circuit mount, side adjust, 2 terminals
- E = Panel mount, 1/4" long bushing
- F = Panel mount, 3/16" long bushing
- G = Panel mount, 9/32" long bushing
- H = Panel mount, 3/16" long split bushing

2 — TYPE

Symbol	Size (in/mm)
1 =	0.875 x 0.938 (22.2 x 23.8)
2 =	0.375 x 0.531 (9.53 x 13.5)
3 =	0.375 x 0.750 (9.53 x 19.1)
4 =	0.625 x 0.750 (15.9 x 19.1)
5 =	0.875 x 0.938 (22.2 x 23.8)
6 =	0.375 x 0.531 (9.53 x 13.5)
7 =	0.375 x 0.750 (9.53 x 19.1)
8 =	0.625 x 0.750 (15.9 x 19.1)
9 =	0.875 x 0.938 (22.2 x 23.8)

00 — Code

00 — MODIFICATIONS

- 00 = Standard*
- 01 = Mica Insulated Screw
- 02 = Ceramic Insulated Screw
- 03 = Guide Cup for Screw (Types 2, 3, 4, 6, 7 and 8)
- 04 = Guide Cup and Mica Insulated Screw

*Types 1, 5, and 9 are normally supplied with mica insulated screw (Mod 01)

Types 2 and 6

Capacitance Range (pF)		
min	max	Model No.[1]
2.5	7	GM__20000
4	20	GM__20200
8	45	GM__20300
12	65	GM__20400
16	90	GM__20500
25	115	GM__20600
55	285	GM__20700
90	340	GM__20800

[1] Insert letter A, B, C, or D in blank space for mounting style required.
For type 6, substitute 6 for 2 in the fourth character of the catalog number.
Example: GMA20200 becomes GMA60200

Types 3 and 7

Capacitance Range (pF)		
min	max	Model No.[2]
2.5	12	GM__30000
3.5	25	GM__30100
7.0	40	GM__30200
16.0	100	GM__30300
25.0	150	GM__30400
40.0	200	GM__30500
56.0	250	GM__30600
75.0	300	GM__30700
95.0	350	GM__30800
115.0	400	GM__30900
130.0	450	GM__31000
150.0	500	GM__31100
170.0	550	GM__31200
200.0	600	GM__31300
220.0	650	GM__31400
240.0	700	GM__31500

[2] Insert letter A, B, C, or D in blank space for mounting style required.
For type 7, substitute 7 for 3 in the fourth character of the catalog number.
Example: GMA30200 becomes GMA70200

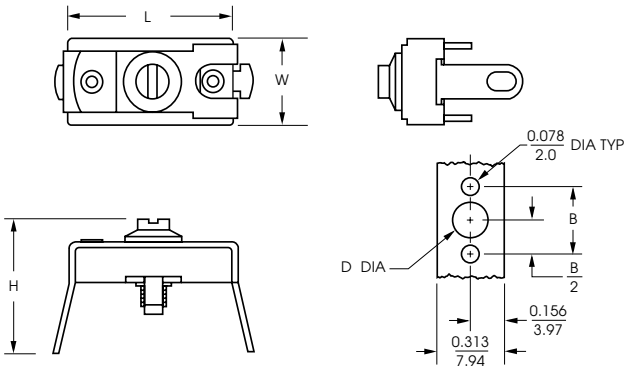
Types 4 and 8

Capacitance Range (pF)		
min	max	Model No.[3]
3	15	GM__40000
5	30	GM__40100
10	80	GM__40200
20	180	GM__40300
45	280	GM__40400
75	380	GM__40500
105	480	GM__40600
140	580	GM__40700
175	680	GM__40800
215	790	GM__40900
260	900	GM__41000
300	1000	GM__41100
330	1100	GM__41200
360	1200	GM__41300
380	1300	GM__41400
420	1400	GM__41500

[3] Insert letter A, B, C, or D in blank space for mounting style required.
For type 8, substitute 8 for 4 in the fourth character of the catalog number.
Example: GMA40200 becomes GMA80200

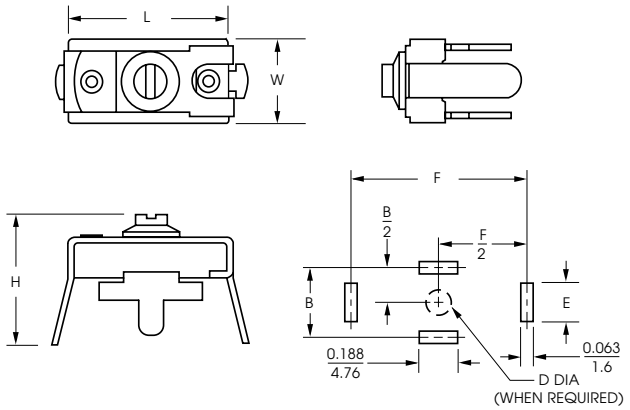
SPRAGUE-GOODMAN MICA DIELECTRIC TRIMMER CAPACITORS
TYPES 2, 3 and 4 (175 WVDC)
TYPES 6, 7 and 8 (250 WVDC)

Mounting Style A



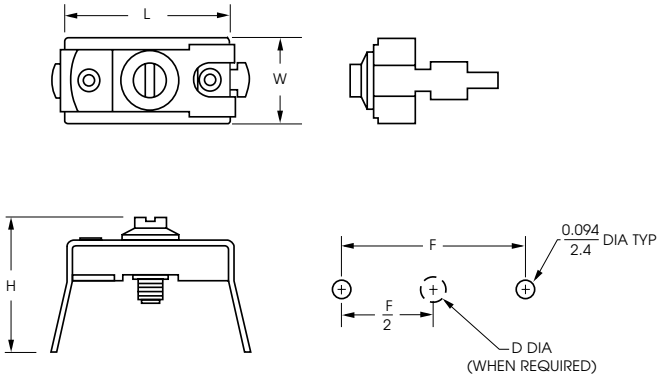
SUGGESTED HOLE LAYOUT FOR MOUNTING BRACKET

Mounting Style B



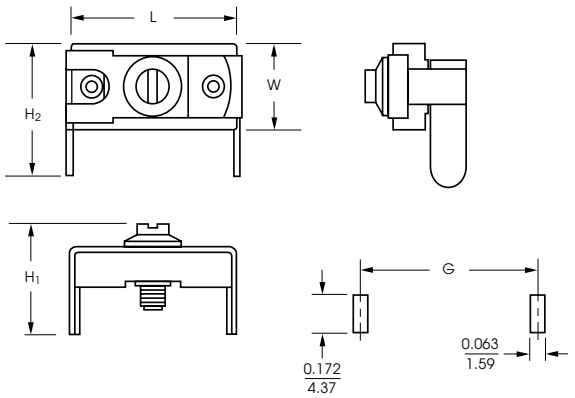
SUGGESTED PRINTED CIRCUIT LAYOUT

Mounting Style C



SUGGESTED PRINTED CIRCUIT LAYOUT

Mounting Style D

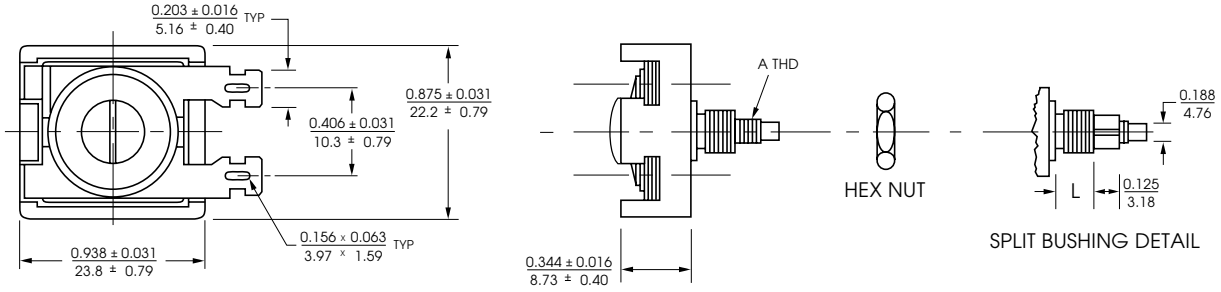


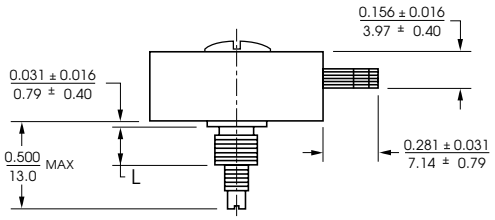
SUGGESTED PRINTED CIRCUIT LAYOUT

Type	L	W	H	H_1	H_2	B	D	E	F	G
2 & 6	0.531 13.5	0.375 9.53	0.719 18.3	0.563 14.3	0.719 18.3	0.315 8.00	0.175 4.45	0.188 4.76	0.563 14.3	0.594 15.1
3 & 7	0.750 19.1	0.375 9.53	0.781 19.8	0.625 15.9	0.625 15.9	0.315 8.00	0.175 4.45	0.188 4.76	0.813 20.6	0.781 19.8
4 & 8	0.750 19.1	0.625 15.9	0.781 19.8	0.563 14.3	0.969 24.6	0.546 13.9	0.206 5.23	0.281 7.14	0.813 20.6	0.813 20.6

Dimensions are in/mm.

SPRAGUE-GOODMAN MICA DIELECTRIC TRIMMER CAPACITORS
TYPES 1, 5 and 9





Style	L	A (Thread)	Special Feature
E	0.250 / 6.35	#12-40 UNS-2	None
F	0.188 / 4.76	1/4-40 UNS-2	None
G	0.281 / 7.14	1/4-40 UNS-2	None
H	0.188 / 4.76	1/4-40 UNS-2	Split Bushing

Dimensions are in/mm.

Type 1

Working Voltage: 250 VDC Test Voltage: 500 VDC		
Capacitance Range (pF)		
min	max	Model No.[4]
15	130	GM__10201
65	340	GM__10301
115	550	GM__10401
190	760	GM__10501
275	970	GM__10601
350	1180	GM__10701
450	1390	GM__10801
550	1600	GM__10901
650	1890	GM__11001
780	2110	GM__11101
880	2330	GM__11201
1150	2605	GM__11301
1300	2830	GM__11401
1400	3055	GM__11501

Type 5

Working Voltage: 500 VDC Test Voltage: 1000 VDC		
Capacitance Range (pF)		
min	max	Model No.[4]
15	120	GM__50201
65	320	GM__50301
100	500	GM__50401
180	690	GM__50501
265	880	GM__50601
340	1070	GM__50701
425	1260	GM__50801
525	1415	GM__50901
615	1600	GM__51001
730	1785	GM__51101
800	1970	GM__51201
1000	2155	GM__51301
1100	2340	GM__51401
1200	2525	GM__51501

Type 9

Working Voltage: 2000 VDC Test Voltage: 2700 VDC		
Capacitance Range (pF)		
min	max	Model No.[4]
10	48	GM__90201
45	105	GM__90301
70	160	GM__90401
95	230	GM__90501
100	270	GM__90601
170	350	GM__90701
190	380	GM__90801
250	480	GM__90901

[4] Insert letter E, F, G or H in blank space for mounting style (Style H not available in Type 9). Model numbers are shown with the "01" modification, calling for a mica insulated screw, which is the way types 1, 5, and 9 are normally supplied.

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