

## MICROWAVE SAPPHIRE PISTONCAP® TRIMMER CAPACITORS

### FEATURES

- Sapphire dielectric
- Very high Q at UHF and microwave frequencies
- Subminiature – smallest PISTONCAP® types
- Choice of 2 configurations and 6 mounting styles to suit all RF structures
- Designed to meet MIL-C-14409D
- Precision high resolution adjustment:
  - 127 threads per inch for GU series, GW series and GN\_1R2\_ \_
  - 169 threads per inch for GN\_2R5\_ \_ to GN\_8R0\_ \_
- Extremely stable over temperature, frequency, voltage, etc.

### APPLICATIONS

Stable oscillators, frequency multipliers, filters, tuning cavities, coupling, etc.

### SPECIFICATIONS

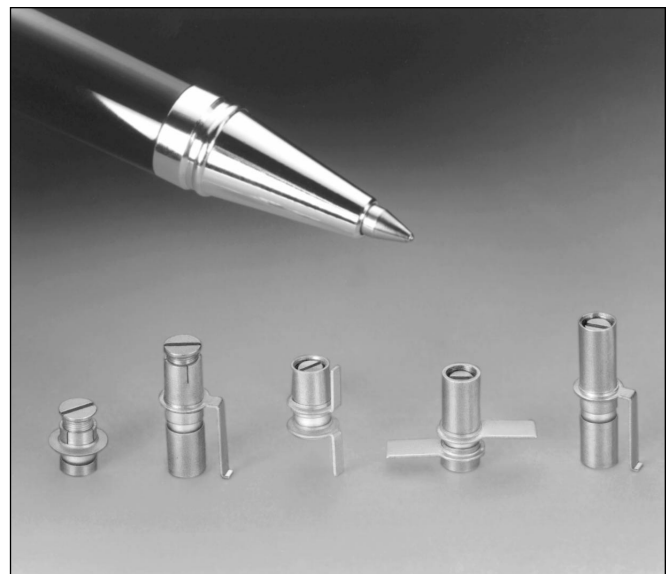
Operating temperature: -55°C to +125°C

Rated voltage: 500 VDC

Dielectric withstanding voltage: 1000 VDC

Contact resistance: 0.01 Ohms

Insulation resistance: 10<sup>6</sup> Megohms min at 500 VDC



Torque: 0.1 to 1.0 oz-in (7.2 to 72 g-cm) for GU series and GN\_1R2\_ \_  
0.2 to 2.0 oz-in (14.4 to 144 g-cm) for GW and GN\_2R5\_ \_ to GN\_8R0\_ \_

### PART NUMBERING SYSTEM

**GU**  
**Sapphire Dielectric**

GN  
GU  
GW

**C**  
**Mount Type**

C = PC Mount  
F = Flange Mount  
L = Horizontal Surface Mount  
N = Leadless  
R = Reverse Lead Mount  
V = Vertical Surface Mount  
Y = Vertical Surface Mount, Wide Lead

**Capacitance Code Industry Standard, i.e.**

1R2 = 1.2 pF  
100 = 10 pF

**00**  
**Modification Suffix**

00 = +350 ±100 ppm/°C (no marking)  
01 = as above, with PTFE protective cap  
50 = NPO ± 50 ppm/°C (± 75 for 8 pF models) (dimple or red ID mark on adjustment screw)  
51 = as above, with PTFE protective cap



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Fig. 1

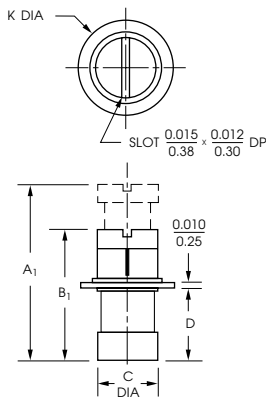
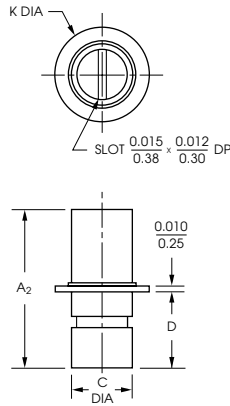


Fig. 2



**Type F -  
Flange Mount**



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ± 0.005 0.1	D	K ± 0.005 0.1	A <sub>2</sub>	Model No. Fig. 1	Model No. Fig. 2
min	max									
0.3	1.2	4000	$\frac{0.20}{5.2}$	$\frac{0.17}{4.4}$	$\frac{0.075}{1.9}$	$\frac{0.09}{2.3}$	$\frac{0.145}{3.68}$	$\frac{0.23}{5.8}$	GUF1R200 GUF1R250	GNF1R200 GNF1R250
0.4	2.5	3000	$\frac{0.20}{5.2}$	$\frac{0.17}{4.4}$	$\frac{0.118}{3.00}$	$\frac{0.09}{2.3}$	$\frac{0.185}{4.70}$	$\frac{0.23}{5.8}$	GWF2R500 GWF2R550	GNF2R500 GNF2R550
0.6	4.5	2000	$\frac{0.33}{8.4}$	$\frac{0.25}{6.5}$	$\frac{0.118}{3.00}$	$\frac{0.15}{3.8}$	$\frac{0.185}{4.70}$	$\frac{0.31}{7.9}$	GWF4R500 GWF4R550	GNF4R500 GNF4R550
0.8	8.0	1000	$\frac{0.57}{14}$	$\frac{0.41}{11}$	$\frac{0.118}{3.00}$	$\frac{0.25}{6.4}$	$\frac{0.185}{4.70}$	$\frac{0.47}{12}$	GWF8R000 GWF8R050	GNF8R000 GNF8R050

Fig. 1

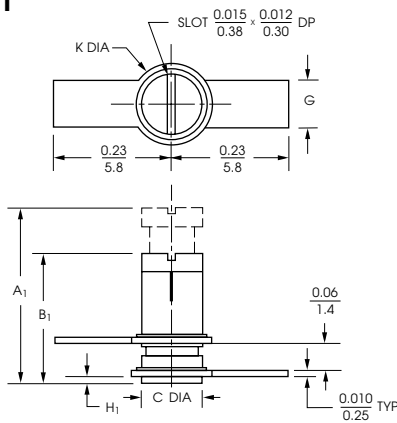
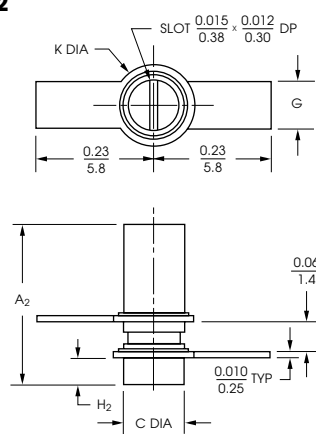


Fig. 2



**Type R -  
Reverse Lead Mount**



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ± 0.005 0.1	G	H <sub>1</sub>	K ± 0.005 0.1	A <sub>2</sub>	H <sub>2</sub>	Model No. Fig. 1	Model No. Fig. 2
min	max											
0.3	1.2	4000	$\frac{0.20}{5.2}$	$\frac{0.17}{4.4}$	$\frac{0.075}{1.9}$	$\frac{0.04}{1.0}$	-	$\frac{0.114}{2.90}$	$\frac{0.23}{5.8}$	$\frac{0.015}{0.38}$	GUR1R200 GUR1R250	GNR1R200 GNR1R250
0.4	2.5	3000	$\frac{0.20}{5.2}$	$\frac{0.17}{4.4}$	$\frac{0.118}{3.00}$	$\frac{0.09}{2.4}$	-	$\frac{0.16}{4.0}$	$\frac{0.23}{5.8}$	$\frac{0.015}{0.38}$	GWR2R500 GWR2R550	GNR2R500 GNR2R550
0.6	4.5	2000	$\frac{0.33}{8.4}$	$\frac{0.25}{6.5}$	$\frac{0.118}{3.00}$	$\frac{0.09}{2.4}$	-	$\frac{0.16}{4.0}$	$\frac{0.31}{7.9}$	$\frac{0.050}{1.3}$	GWR4R500 GWR4R550	GNR4R500 GNR4R550
0.8	8.0	1000	$\frac{0.57}{14}$	$\frac{0.41}{11}$	$\frac{0.118}{3.00}$	$\frac{0.09}{2.4}$	$\frac{0.14}{3.5}$	$\frac{0.16}{4.0}$	$\frac{0.47}{12}$	$\frac{0.14}{3.5}$	GWR8R000 GWR8R050	GNR8R000 GNR8R050

Dimensions are in/mm. Unless otherwise specified, tolerance is ±0.01/0.3, except slot tolerance is +0.001/0.03, -0.002/0.05 and lead thickness tolerance is ±0.002/0.05.

Fig. 1

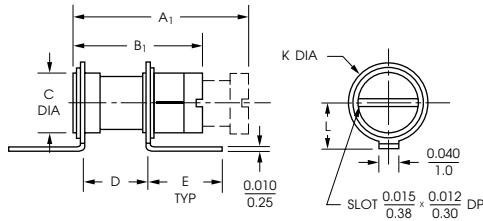
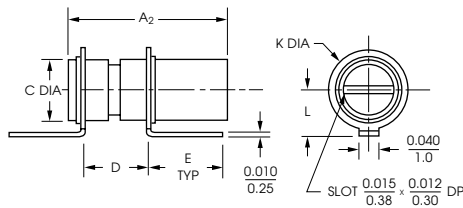
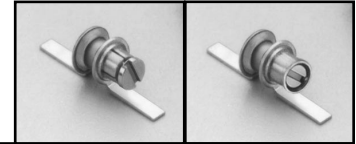


Fig. 2



**Type L -  
Horizontal Surface Mount**



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ±0.005 0.1	D	E	K ±0.005 0.1	L	A <sub>2</sub>	Model No. Fig. 1	Model No. Fig.2
min	max											
0.3	1.2	4000	0.20 5.2	0.17 4.4	0.075 1.9	0.08 2.1	0.171 4.34	0.114 2.90	0.07 1.8	0.23 5.8	GUL1R200	GNL1R200
											GUL1R250	GNL1R250
0.4	2.5	3000	0.20 5.2	0.17 4.4	0.118 3.00	0.08 2.1	0.147 3.73	0.158 4.01	0.09 2.4	0.23 5.8	GWL2R500	GNL2R500
											GWL2R550	GNL2R550
0.6	4.5	2000	0.33 8.4	0.25 6.5	0.118 3.00	0.13 3.3	0.147 3.73	0.158 4.01	0.09 2.4	0.31 7.9	GWL4R500	GNL4R500
											GWL4R550	GNL4R550
0.8	8.0	1000	0.57 14	0.41 11	0.118 3.00	0.25 6.4	0.147 3.73	0.158 4.01	0.09 2.4	0.47 12	GWL8R000	GNL8R000
											GWL8R050	GNL8R050

Fig. 1

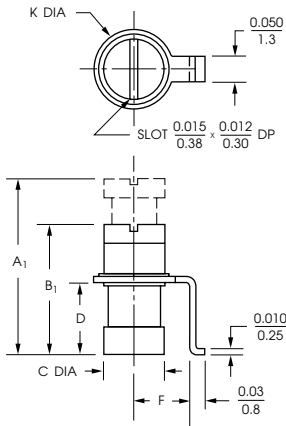
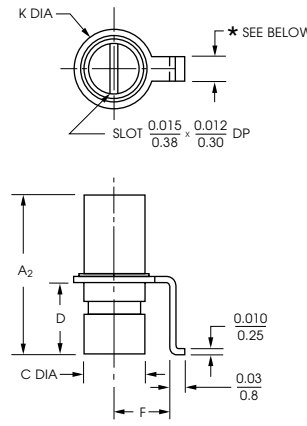


Fig. 2



**Type V -  
Vertical Surface Mount**



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ±0.005 0.1	D	F	K ±0.005 0.1	A <sub>2</sub>	Model No. Fig. 1	Model No. Fig.2*
min	max										
0.3	1.2	4000	0.20 5.2	0.17 4.4	0.075 1.9	0.09 2.3	0.08 1.9	0.114 2.90	0.23 5.8	GUV1R200	GNV1R200
										GUV1R250	GNV1R250
0.4	2.5	3000	0.20 5.2	0.17 4.4	0.118 3.00	0.09 2.3	0.11 2.8	0.158 4.01	0.23 5.8	GWV2R500	GN_2R500
										GWV2R550	GN_2R550
0.6	4.5	2000	0.33 8.4	0.25 6.5	0.118 3.00	0.15 3.8	0.11 2.8	0.158 4.01	0.31 7.9	GWV4R500	GN_4R500
										GWV4R550	GN_4R550
0.8	8.0	1000	0.57 14	0.41 11	0.118 3.00	0.25 6.4	0.11 2.8	0.158 4.01	0.47 12	GWV8R000	GN_8R000
										GWV8R050	GN_8R050

\* Insert letter "V" or "Y" to select lead width.  
GNV series has a lead width of 0.050/1.3  
GNY series has a lead width of 0.093/2.4

Dimensions are in/mm. Unless otherwise specified, tolerance is ±0.01/0.3, except slot tolerance is +0.001/0.03, -0.002/0.05 and lead thickness tolerance is ±0.002/0.05.

Fig. 1

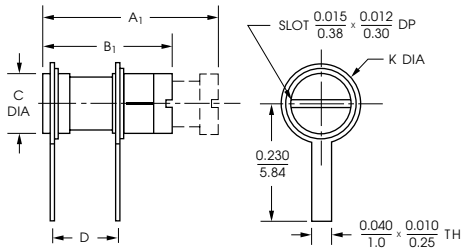
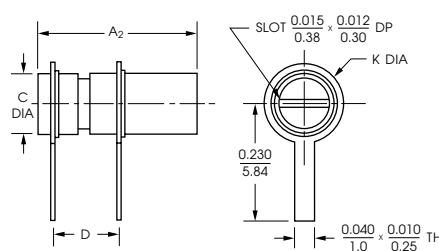
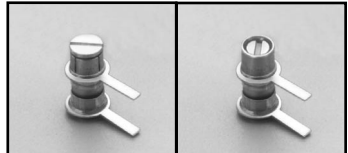


Fig. 2



Type C -  
PC Mount



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ± 0.005 / 0.1	D	K ± 0.005 / 0.1	A <sub>2</sub>	Model No. Fig. 1	Model No. Fig. 2
min	max									
0.3	1.2	4000	0.20 / 5.2	0.17 / 4.4	0.075 / 1.9	0.08 / 2.1	0.114 / 2.90	0.23 / 5.8	GUC1R200	GNC1R200
									GUC1R250	GNC1R250
0.4	2.5	3000	0.20 / 5.2	0.17 / 4.4	0.12 / 3.0	0.08 / 2.1	0.158 / 4.01	0.23 / 5.8	GWC2R500	GNC2R500
									GWC2R550	GNC2R550
0.6	4.5	2000	0.33 / 8.4	0.25 / 6.5	0.12 / 3.0	0.13 / 3.3	0.158 / 4.01	0.31 / 7.9	GWC4R500	GNC4R500
									GWC4R550	GNC4R550
0.8	8.0	1000	0.57 / 14	0.41 / 11	0.12 / 3.0	0.25 / 6.4	0.158 / 4.01	0.47 / 12	GWC8R000	GNC8R000
									GWC8R050	GNC8R050

Fig. 1

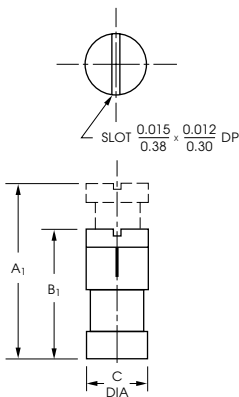
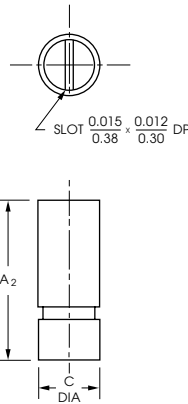
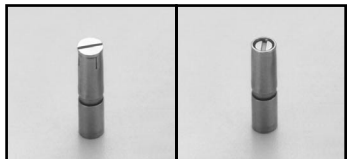


Fig. 2



Type N -  
Leadless



Capacitance (pF)		Q min (250 MHz)	A <sub>1</sub>	B <sub>1</sub>	C ± 0.005 / 0.1	A <sub>2</sub>	Model No. Fig. 1	Model No. Fig. 2
min	max							
0.3	1.2	4000	0.20 / 5.2	0.17 / 4.4	0.075 / 1.9	0.23 / 5.8	GUN1R200	GNN1R200
							GUN1R250	GNN1R250
0.4	2.5	3000	0.20 / 5.2	0.17 / 4.4	0.12 / 3.0	0.23 / 5.8	GWN2R500	GNN2R500
							GWN2R550	GNN2R550
0.6	4.5	2000	0.33 / 8.4	0.25 / 6.5	0.12 / 3.0	0.31 / 7.9	GWN4R500	GNN4R500
							GWN4R550	GNN4R550
0.8	8.0	1000	0.57 / 14	0.41 / 11	0.12 / 3.0	0.47 / 12	GWN8R000	GNN8R000
							GWN8R050	GNN8R050

Dimensions are in/mm. Unless otherwise specified, tolerance is ±0.01/0.3, except slot tolerance is +0.001/0.03, -0.002/0.05 and lead thickness tolerance is ±0.002/0.05.