



### Features

- Tight DC breakdown voltage tolerance ( $\pm 10\%$ )
- Long-life tungsten or molybdenum electrodes
- Rugged ceramic-to-metal or glass-to-metal construction

### Applications

- Test equipment
- Video displays
- Pulse generators
- Medical electronics

### Description

High Energy Devices' TG Legacy Series of two electrode sparkgaps excel in applications that require the efficient transfer of high voltage, high energy pulses and DC overvoltage protection for magnetrons, diodes, capacitors, etc.

### Voltage Range

Series	DC Breakdown Voltage	Units
TG Two Electrode	.2-60.0	kV

Devices in the TG Two Electrode Legacy Series with other breakdown voltages in the .2-60.0kV range are available upon request. Also refer to the SB/SG Series Spark Gaps for additional product availability.

### Ordering Information

A complete part number is represented by the information contained in the Part Number column of the specification table.

Specifications (@25°C)

Part Number	DC Breakdown Voltage (kV ± 10%)	Initial Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Repetitive Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Package Outline	Dimension A (Inches)	Dimension B (Inches)	Dimension C (Inches)
TG6	2.50	-	-	1	0.620 max	0.455 ± .031	0.188 max
TG8 <sup>(1)</sup>	2.50	-	-	1	0.620 max	1.000 ± .031	0.125 max
TG9	3.00	-	-	1	0.620 max	0.460 ± .031	0.188 max
TG14	12.50	19.0 - 28.0	17.0 - 21.0	2	-	-	-
TG15 <sup>(1)</sup>	3.00	-	-	1	0.620 max	1.000 ± .031	0.125 max
TG16 <sup>(1)</sup>	3.00	-	-	1	0.620 max	1.000 ± .031	0.125 max
TG17	2.60	-	-	1	0.620 max	0.455 ± .031	0.188 max
TG19 <sup>(2)</sup>	2.20	-	-	1	0.620 max	0.455 ± .031	0.275 ± .075
TG20A	21.00	17.0 - 24.0	-	7	2.250 ± .125	-	-
TG22	1.00	-	-	1	0.620 max	0.435 ± .031	0.188 max
TG24	15.50	35.5 max	-	2	-	-	-
TG25	0.40	-	-	1	0.600 ± .030	1.100 ± .031	0.250 max
TG26A	0.75	-	-	2	-	-	-
TG27A	1.00	-	-	2	-	-	-
TG28A	1.25	-	-	2	-	-	-
TG29	1.50	-	-	2	-	-	-
TG30	2.00	-	-	2	-	-	-
TG31	2.50	-	-	2	-	-	-
TG32	3.00	-	-	2	-	-	-
TG33	4.00	-	-	2	-	-	-
TG34	5.00	-	-	2	-	-	-
TG35	6.00	-	-	2	-	-	-
TG36	8.00	-	-	2	-	-	-
TG37	10.00	-	-	2	-	-	-
TG38	12.50	-	-	2	-	-	-
TG39	15.00	-	-	2	-	-	-
TG40	17.50	-	-	2	-	-	-
TG41A	0.75	-	-	3	-	-	-
TG42A	1.00	-	-	3	-	-	-
TG43A	1.25	-	-	3	-	-	-
TG44	1.50	-	-	3	-	-	-
TG45	2.00	-	-	3	-	-	-
TG46	2.50	-	-	3	-	-	-
TG47	3.00	-	-	3	-	-	-
TG48	4.00	-	-	3	-	-	-
TG49	5.00	-	-	3	-	-	-
TG50	6.00	-	-	3	-	-	-
TG51	8.00	-	-	3	-	-	-
TG52	10.00	-	-	3	-	-	-
TG53	12.50	-	-	3	-	-	-
TG54	15.00	-	-	3	-	-	-
TG55	17.50	-	-	3	-	-	-
TG56	20.00	-	-	4	3.750 ± .125	-	-
TG57	25.00	-	-	4	3.750 ± .125	-	-
TG58	30.00	-	-	4	4.000 ± .188	-	-
TG59	40.00	-	-	4	4.250 ± .188	-	-
TG60	50.00	-	-	4	4.500 ± .188	-	-

<sup>(1)</sup> 6-32 tapped hole in non-tubulated end.

<sup>(2)</sup> Identical tubulation on both ends.

<sup>(3)</sup> The voltage level at which the spark discharge occurs when a unipolarity pulse train is applied to the gap. Typically, the pulse repetition rate is 400 pps (pulses/second) with a rise time of 0.3 μs and a pulse width of 0.5 μs. The "initial" range specifies at what increasing voltage the gap begins to fire and the "rep" range specifies at what decreasing voltage the gap ceases to fire repetitively.

<sup>(4)</sup> Pulse repetition rate is 1500pps instead of the standard 400pps.

<sup>(5)</sup> Though outlines 2, 3, and 3A are identical, the electrode materials and configurations vary internally.

<sup>(6)</sup> Though outlines 4 and 4A are identical, gaps with outline 4A have heavier internal construction to withstand more severe shock and vibration.

### Specifications (@25°C)

Part Number	DC Breakdown Voltage (kV ± 10%)	Initial Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Repetitive Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Package Outline	Dimension A (Inches)	Dimension B (Inches)	Dimension C (Inches)
TG61	0.75	-	-	5	0.770 ± .062	0.310 ± .020	0.520 ± .022
TG62	1.00	-	-	5	0.770 ± .062	0.310 ± .020	0.520 ± .022
TG63	1.25	-	-	5	0.770 ± .062	0.310 ± .020	0.520 ± .022
TG64	1.50	-	-	5	0.770 ± .062	0.310 ± .020	0.520 ± .022
TG65	2.00	-	-	5	0.770 ± .062	0.310 ± .020	0.520 ± .022
TG66	2.50	-	-	5	0.790 ± .062	0.310 ± .020	0.540 ± .022
TG67	3.00	-	-	5	0.790 ± .062	0.310 ± .020	0.540 ± .022
TG68	4.00	-	-	5	0.820 ± .062	0.340 ± .020	0.570 ± .022
TG69	5.00	-	-	5	0.820 ± .062	0.340 ± .020	0.570 ± .022
TG70	6.00	-	-	5	0.820 ± .062	0.340 ± .020	0.570 ± .022
TG71	8.00	-	-	5	0.860 ± .062	0.380 ± .020	0.610 ± .022
TG72	10.00	-	-	5	0.860 ± .062	0.380 ± .020	0.610 ± .022
TG73	12.50	-	-	5	0.965 ± .062	0.490 ± .020	0.715 ± .022
TG74	15.00	-	-	5	0.965 ± .062	0.490 ± .020	0.715 ± .022
TG75	17.50	-	-	5	0.965 ± .062	0.490 ± .020	0.715 ± .022
TG76	0.40 ± 0.05	-	-	1	0.600 ± .030	0.494 ± .031	0.250 max
TG77	-	9.0 - 11.5	9.0 - 11.5	special	-	-	-
TG78	1.00	-	-	1A	0.620 max	0.425 ± .031	-
TG79	2.50	-	-	2	-	-	-
TG82	15.00	15.0 - 19.0	13.0 - 18.0	7A	0.950 ± .050	-	-
TG83	16.50	16.0 - 22.0 <sup>(4)</sup>	16.0 - 22.0 <sup>(4)</sup>	2	-	-	-
TG84	30.00	31.0 - 43.0 <sup>(4)</sup>	31.0 - 43.0 <sup>(4)</sup>	4	4.000 ± .188	-	-
TG85	15.00	9.0 - 11.5	9.0 - 11.5	special	-	-	-
TG86	0.60	-	-	1A	0.620 max	0.537 ± .031	-
TG87	0.80	-	-	1A	0.620 max	0.537 ± .031	-
TG89 <sup>(2)</sup>	2.90	-	-	1	0.620 max	0.460 ± .031	0.188 max
TG90	20.00	17.0 - 24.0	-	special	-	-	-
TG98	0.345 ± .045	-	-	3A	-	-	-
TG99	2.75 ± 0.25	-	-	2	-	-	-
TG100	38.00	-	-	4	4.000 ± .188	0.440 ± .031	0.188 max
TG102	1.25	-	-	1A	0.620 max	0.440 ± .031	0.188 max
TG103	1.50	-	-	1A	0.620 max	0.445 ± .031	0.188 max
TG104	2.00	-	-	1A	0.620 max	0.445 ± .031	0.188 max
TG105	2.50	-	-	1A	0.620 max	0.445 ± .031	0.188 max
TG106	3.00	-	-	1A	0.620 max	0.487 ± .031	0.188 max
TG107	3.50	-	-	1A	0.620 max	0.487 ± .031	0.188 max
TG108	4.00	-	-	1A	0.620 max	0.487 ± .031	0.188 max
TG109	5.00	-	-	1A	0.620 max	0.487 ± .031	0.188 max
TG110	0.40	-	-	1A	0.620 max	-	-
TG112	2.20 ± 0.10	-	-	1	0.620 max	0.455 ± .031	0.275 ± .075
TG115	13.00 ± 1.00	-	-	3	-	-	-
TG116 <sup>(6)</sup>	25.00	-	-	4A	3.750 ± .125	-	-
TG117	21.00	17.0 - 24.0	-	7	2.000 ± .125	-	-
TG118	21.50	16.0 - 22.0	-	5	0.965 ± .062	0.490 ± .020	0.715 ± .022
TG119	45.00	-	-	4	4.250 ± .188	-	-
TG120	8.00	7.4 - 8.7	-	5	0.860 ± .062	0.380 ± .020	0.610 ± .022

<sup>(1)</sup> 6-32 tapped hole in non-tubulated end.

<sup>(2)</sup> Identical tubulation on both ends.

<sup>(3)</sup> The voltage level at which the spark discharge occurs when a unipolarity pulse train is applied to the gap. Typically, the pulse repetition rate is 400 pps (pulses/second) with a rise time of 0.3 μs and a pulse width of 0.5 μs. The "initial" range specifies at what increasing voltage the gap begins to fire and the "rep" range specifies at what decreasing voltage the gap ceases to fire repetitively.

<sup>(4)</sup> Pulse repetition rate is 1500pps instead of the standard 400pps.

<sup>(5)</sup> Though outlines 2, 3, and 3A are identical, the electrode materials and configurations vary internally.

<sup>(6)</sup> Though outlines 4 and 4A are identical, gaps with outline 4A have heavier internal construction to withstand more severe shock and vibration.

Specifications (@25°C)

Part Number	DC Breakdown Voltage (kV ± 10%)	Initial Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Repetitive Pulse Breakdown Voltage (kV) <sup>(3)</sup>	Package Outline	Dimension A (Inches)	Dimension B (Inches)	Dimension C (Inches)
TG131	30.00	33.0	25.0	4A	4.000 ± .188	-	-
TG132	2.00	-	-	special	-	-	-
TG133	9.00	9.0 - 11.5	9.0 - 11.5	7A	0.192 ± .010	-	-
TG135	2.00	-	-	special	-	-	-
TG139	0.50	-	-	1A	0.487 ± .031	-	-
TG140	0.60	-	-	3A	-	-	-
TG148	6.00	7.5	6.0	special	-	-	-
TG149	2.00	-	-	9	0.620 max	0.219 max	-
TG152	0.50	-	-	special	-	-	-
TG153	0.38 ± 0.02	-	-	1A	0.487 ± .031	-	-
TG155	1.40	-	-	2	-	-	-
TG156	2.625 ± 0.125	-	-	1	0.620 max	1.000 ± .031	0.188 max
TG157	1.20	-	-	9	0.515 max	0.125 max	-
TG160	13.13 ± 0.63	-	-	2	-	-	-
TG161	1.58 ± 0.08	-	-	2	-	-	-
TG162	21.00 ± 1.00	-	-	4	3.750 ± .125	-	-
TG163	31.50 ± 3.00	-	-	4	4.000 ± .188	-	-
TG166	0.40	-	-	9	0.515 max	0.125 max	-
TG167	0.60	-	-	9	0.515 max	0.125 max	-
TG168	0.80	-	-	9	0.515 max	0.125 max	-
TG169	1.00	-	-	9	0.515 max	0.125 max	-
TG171	3.00	-	-	9	0.620 max	0.219 max	-
TG172	3.50	-	-	9	0.620 max	0.219 max	-
TG173	4.00	-	-	9	0.620 max	0.219 max	-
TG174	5.00	-	-	9	0.620 max	0.219 max	-
TG175	6.00	6.0 - 7.5	6.0 - 7.5	9	0.620 max	0.219 max	-
TG176	6.00	-	-	7	2.25 ± .125	-	-
TG183	35.00	-	-	4	4.000 ± .188	-	-
TG184 <sup>(5)</sup>	7.00	-	-	3A	-	-	-
TG186	20.50 ± 1.50	-	-	4	3.750 ± .125	-	-
TG187	1.50	-	-	3	-	-	-
TG188 <sup>(1)</sup>	0.60	-	-	1	0.620 max	1.000 ± .031 max	0.188 max
TG189	0.50	-	-	9	0.515 max	0.125 nom	-
TG191 <sup>(2)</sup>	0.45	-	-	1	0.620 max	0.455 ± .031	0.275 ± .075
TG192	31.00 ± 3.0	28.0 - 39.0	-	4	4.000 ± .188	-	-
TG193	2.30	-	-	special	-	-	-
TG194	60.00 ± 8.0	-	-	4	4.500 ± .188	-	-
TG196	9.00	9.0 - 11.5	9.0 - 11.5	7A	0.500 ± 0.30	-	-
TG197	18.375 ± 0.875	-	-	2	-	-	-
TG198 <sup>(1)</sup>	1.60	-	-	1	0.620 max	1.000 ± .031	0.125 max
TG249	0.18 ± 0.05	-	-	1A	0.450 ± .031	-	-
TG359	0.345 ± 0.45	-	-	special	-	-	-
TG366A	14.00	-	-	special	-	-	-
TG373	21.00	-	-	special	-	-	-
TG375	20.5 - 24.0	-	-	4	4.000 ± .188	-	-
TG376	14.80 - 18.15	-	-	4	4.000 ± .188	-	-

<sup>(1)</sup> 6-32 tapped hole in non-tubulated end.

<sup>(2)</sup> Identical tubulation on both ends.

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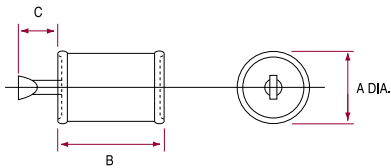
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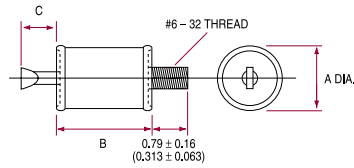
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### MECHANICAL DIMENSIONS mm/(inches)

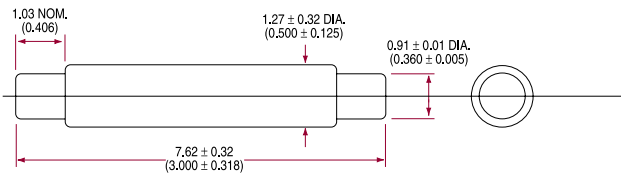
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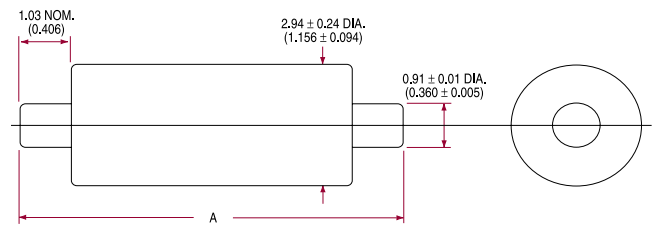
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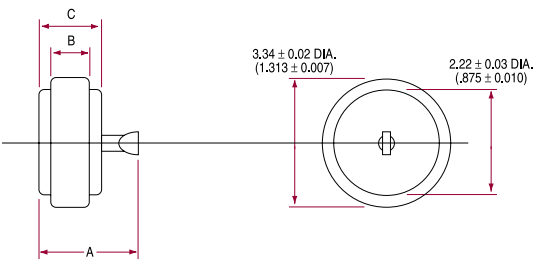
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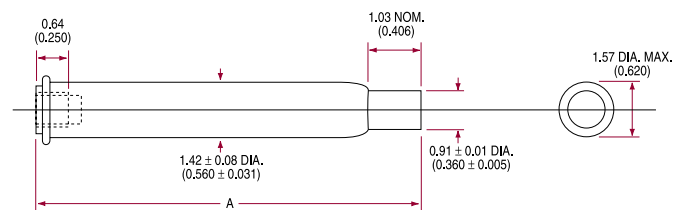
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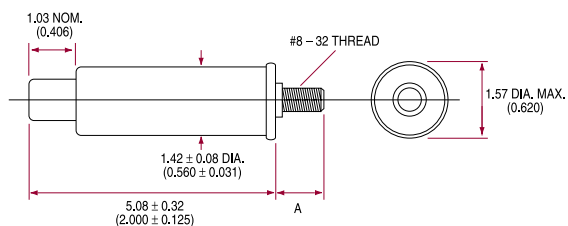
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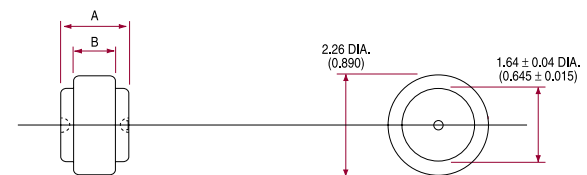
#### TG Legacy -7



#### TG Legacy -7A



#### TG Legacy -9



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