

## Two-Electrode Specialty Spark Gaps Selection Guide

Product Family	Power Gaps			Uni-Imps <sup>[Notes 2]</sup>		Spark Gaps
Voltage Range	350 - 20,000V					
Series <sup>[Notes 3,4]</sup>	PMT(275)	UMT(275)	PMT(301) <sup>[Notes 1,10]</sup>	UBD	UBT/UGT	SIG <sup>[Notes 12, 13]</sup>
Description	Two Electrode Ultra-Fast Surge Protection		Two Electrode Fast Surge Protection	Two Electrode Ultra-Fast Surge Protection		Two Electrode Long Life (Millions)
DC @ 100V/s Impulse @ 5kV/μs IR @ 100Vdc Capacitance @ 1 MHz	350 - 500V 750V 10 <sup>10</sup> Ohms 3.5pF	550 - 2,500V 760 - 3,440V 10 <sup>10</sup> Ohms 3.5pF	350 - 3,500V 1,150 - 4,470V <sup>[Note 10]</sup> 10 <sup>10</sup> Ohms 2.0pF	550 - 4,000V 660 - 4,800V 10 <sup>10</sup> Ohms 5.0 - 20.0pF	4,000 - 20,000V 4,800 - 24,000V 10 <sup>10</sup> Ohms 2.0 - 5.0pF	2,000 - 4,000V 5,000V 10 <sup>10</sup> Ohms 4.0pF
Surge Life Ratings	500 surges @ 1,000A (8/20)		6,000 - 68,100 surges @ 100A (8/20)	330 - 2,400 surges @ 3,000A (1/15)	1,300 surges @ 10,000A (1/5)	10,000 surges @ 3,000A (0.2/0.7)
Cumulative Charge Ratings <sup>[Note 8]</sup>	10 Coulombs		12 - 136 Coulombs	15 - 108 Coulombs	65 Coulombs	24,000 Coulombs
Applications	Avionic Military Industrial Medical		Avionic Military Industrial Medical	Antenna Feed Lines Military Industrial Medical		Avionic Military Industrial Medical

- Note (1) PMT(301) is the lowest capacitance Power Gap suitable for protection of high frequency antennas and transmission lines
- Note (2) Uni-Imps protect sensitive components against over voltages without regard to rate of voltage rise.
- Note (3) Specifications listed for Impulse Breakdown and Capacitance are maximum values while IR specifications are nominal values and Surge Life specifications are minimum values.
- Note (4) The range of values corresponds to the low and high member of the Series.
- Note (8) Life ratings on select members of a Series are determined by laboratory tests and are dependent on the cumulative charge, in coulombs (Q), that is passed during the tests.
- Note (10) Impulse Breakdown measurements taken at 80kV/μs.
- Note (12) Impulse Breakdown measurement taken at 7kV/μs.
- Note (13) The surge life ratings listed are conservative values based upon limited laboratory testing at HED. Over a two year period, a randomly selected SIG3.0 gap was life tested at 3.6 joules at three (3) shots per second with the dc breakdown voltage and insulation resistance monitored daily. After months of continuous operation and occurrence of over 35 million shots, there was essentially no change in dc breakdown voltage, even when subjected for 96 hour periods to extreme temperatures of -65°C and +125°C. Furthermore, the insulation resistance level remained above 10<sup>10</sup> ohms. As is true for all products, since the longevity of life is based upon test conditions, in order to best determine the operating life, it is recommended that tests be conducted by the customer under actual operating conditions.