

Gas Discharge Tube

2.8x3.5mm 2 Poles Square End

MGT3-2S series

MERITEK

FEATURE

- Storage and Operating Temperature: -40°C~+85°C
- Large Absorbing Transient Current Capacity
- Stable Breakdown Voltage
- Micro-Gap design
- High insulation resistance, Low capacitance ($\leq 0.5\text{pF}$)
- Meets MSL Level 1, Per J-STD-020
- UL Safety Approved Certification No: E223045



PART NUMBERING SYSTEM



MGT 3 E 090M CB2S
 (1) (2) (3) (4) (5)

No	Item	Digit	Description	
(1)	Product Code	MGT	MGT: Gas Discharge Tube Series	
(2)	Size Code	3	Diameter: 3mm	DxT : 2.8x3.5mm
(3)	Discharge Current	E	E: 1KA	8/20 μ s, 10times
(4)	Breakage Voltage	090M	090M: 90V \pm 20%	DC Spark Over Voltage, 100V/s
(5)	Series Code	CB2S	2 Poles Square End	Internal Control Reference

ELECTRICAL CHARACTERISTICS

Part Number	DC Spark-over Voltage	Impulse Spark-over Voltage max	Impulse Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance
	100V/s	1KV/ μ s	8/20 μ s, 10times	8/20 μ s 100A	VT	IR	1MHz
2.8x3.5mm	(V)	(V)	(KA)	(Times)	(V _{DC})	(G Ω)	(pF)
MGT3E090MCB2S	90 \pm 20%	650	1	300	50	1	0.5
MGT3E200MCB2S	200 \pm 20%	700	1	300	100	1	0.5
MGT3E300MCB2S	300 \pm 20%	900	1	300	100	1	0.5
MGT3E400MCB2S	400 \pm 20%	1100	1	300	100	1	0.5
MGT3E500NCB2S	500 \pm 30%	1300	1	300	100	1	0.5

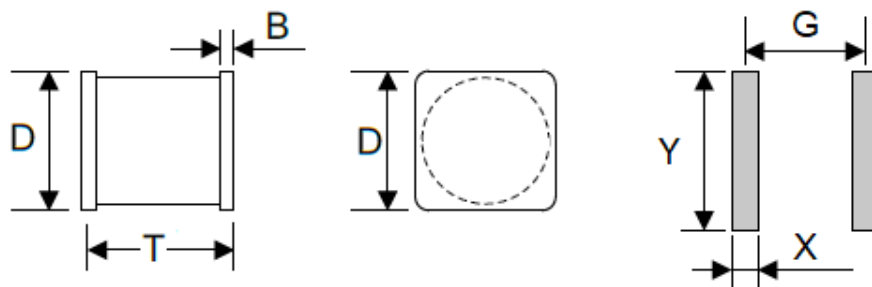
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DIMENSION AND RECOMMENDED PAD SIZE



Part Series	D	T	B	X	Y	G
MGT3-2S	2.8±0.2	3.5±0.2	0.5±0.1	Max 4.8	Max 2.8	Min2.2

Unit: mm

ELECTRICAL RATINGS

Item	Test Condition	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt = 100V/s$.	To meet the specified value
Maximum Impulse Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt = 1000V/\mu s$.	
Impulse Discharge Current	<p>Maximum 8/20 μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time, without causing the DC spark-over voltage to change more than 25% from its initial measured value.</p> <p style="text-align: center;">Crest Value</p> <p>The graph shows a typical 8/20 microsecond surge current waveform. The y-axis is labeled 'Current (%)' with values 0, 10, 50, 90, and 100. The x-axis is labeled 'Time' and 'Impulse Width'. The curve starts at 0, rises to a peak of 100% at 8 microseconds, and then decays to 50% at 20 microseconds. Dotted lines indicate the 100% crest value and the 50% decay point.</p>	To meet the specified value
Insulation Resistance	The resistance of gas tube shall be measured between two electrodes.	To meet the specified value
Capacitance	The capacitance of gas tube shall be measured between two electrodes.	

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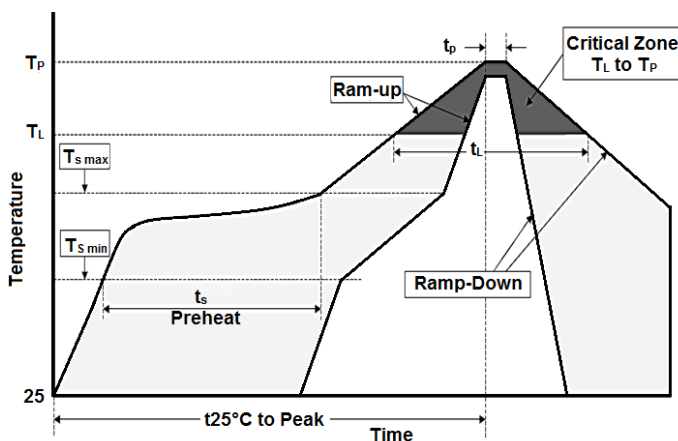
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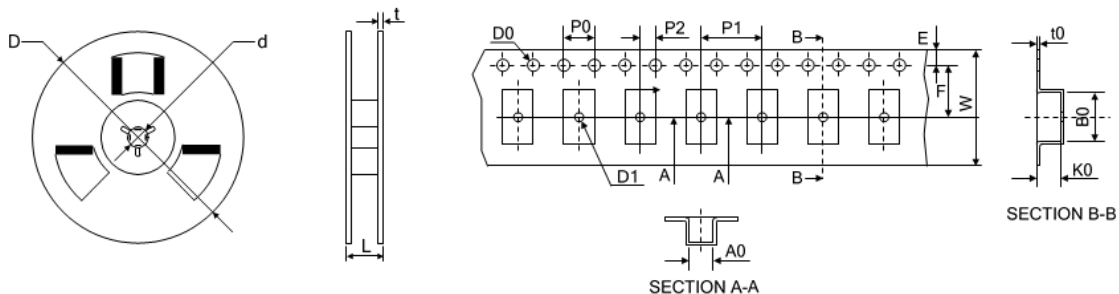
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RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60~180 seconds
$T_{s(max)}$ to T_L (Ramp-up rate)		3°C/second max.
Average ramp up rate (T_L) to peak		3°C/second max.
Reflow	Temp. (T_L)	217°C
	Time (min. to max.) (t_L)	60~150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak		20~40 seconds
Ramp-down Rate		6°C/second



PACKAGING



Part Series	D ± 2.0	d ± 0.5	L ± 2.0	t ± 0.2	W ± 0.2	P0 ± 0.1	P1 ± 0.1	P2 ± 0.1	D0 ± 0.1	E ± 0.1	F ± 0.1	A0 ± 0.1	K0 ± 0.1	B0 ± 0.1	t0 ± 0.1	Pcs/Reel
MGT3-2S	330	13	20	2	12	4	8	2	1.50	1.75	5.5	3.2	3.2	3.9	0.4	2500

unit: mm

*Specifications subject to change without notice.