

Gas Discharge Tube

4.2x4.0mm 2 Poles Square End

MGT4-2S series

MERITEK

FEATURE

- Storage and Operating Temperature: -40°C ~ +85°C
- Micro-Gap Design
- Stable Breakdown Voltage
- High Insulation Resistance, High Holdover Voltage
- Low capacitance ($\leq 1\text{pF}$)
- Large Transient Current Absorbing Capability
- Meets MSL level 1, per J-STD-020
- UL Safety Approved: Certification No: E223045



PART NUMBERING SYSTEM



MGT 4 K 075M CB2S
(1) (2) (3) (4) (5)

No	Item	Digit	Description	
(1)	Product Code	MGT	MGT: Gas Discharge Tube Series	
(2)	Size Code	4	Diameter: 4mm	DxT :4.2x4.0mm
(3)	Discharge Current	K	K: 3KA	8/20 μs , 10times
(4)	Breakage Voltage, Tolerance	075M	075: 75 $\pm 20\%$	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	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance
	100V/s	1KV/ μs	8/20 μs , 10times	50Hz, 1sec	10/1K μs 100A	VT	IR	1MHz
4.2x4.0mm	(V)	(V)	(KA)	(A)	(Times)	(V _{DC})	(G Ω)	(pF)
MGT4K075MCB2S	75 $\pm 20\%$	800	3	3	300	25	1	1
MGT4K090MCB2S	90 $\pm 20\%$	800	3	3	300	50	1	1
MGT4K145MCB2S	145 $\pm 20\%$	800	3	3	300	100	1	1
MGT4K230MCB2S	230 $\pm 20\%$	700	3	3	300	100	1	1
MGT4K250MCB2S	250 $\pm 20\%$	700	3	3	300	100	1	1
MGT4K300MCB2S	300 $\pm 20\%$	800	3	3	300	100	1	1
MGT4K350MCB2S	350 $\pm 20\%$	850	3	3	300	100	1	1
MGT4K400MCB2S	400 $\pm 20\%$	900	3	3	300	100	1	1
MGT4K470MCB2S	470 $\pm 20\%$	1000	3	3	300	250	1	1
MGT4K600MCB2S	600 $\pm 20\%$	1200	3	3	300	250	1	1
MGT4K800MCB2S	800 $\pm 20\%$	1400	3	3	300	250	1	1
MGT4K102MCB2S	1000 $\pm 20\%$	1600	3	3	300	500	1	1
MGT4K122MCB2S	1200 $\pm 20\%$	1900	3	3	300	500	1	1

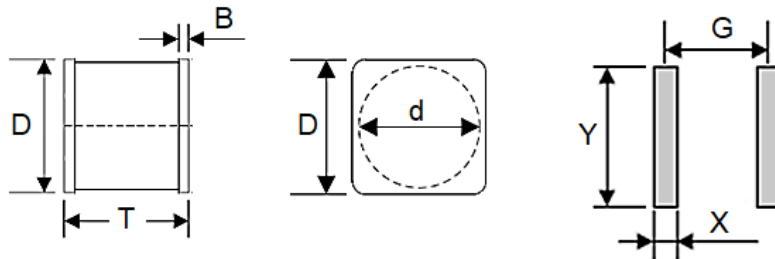
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DIMENSIONS AND PCB LAYOUT



Part Series	D	T	B	d	X	Y	G
MGT4-2S	4.2 ±0.5	4.0±0.4	0.4±0.1	3.9±0.1	1.3	5.0	3.5

Unit: mm

RELIABILITY AND TEST CONDITON

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	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.	To meet the specified value
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 second for 10 times with interval time 3 minutes. DC spark-over voltage shall not be change more than $\pm 25\%$ from its initial value. $IR > 10^8 \Omega$ (-20%, +30% for 70~90V).	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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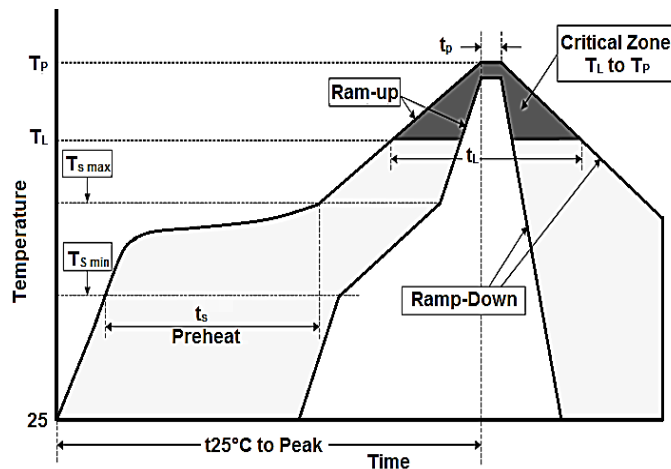
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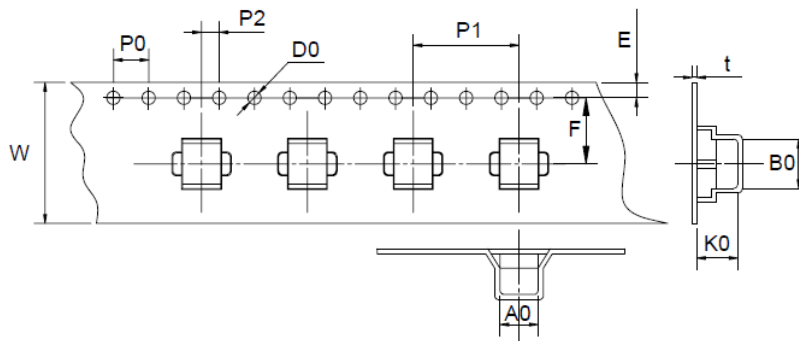
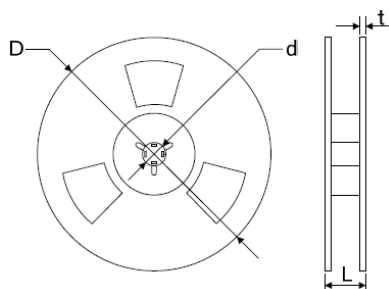
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RECOMMENDED SOLDERING PROFILES

Reflow Soldering 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 sec
Average ramp up rate (T_L) to peak		3°C/sec Max.
$T_{s(max)}$ to T_L (Ramp-up rate)		3°C/sec Max.
Reflow	Temp. (T_L)	217°C
	Time (min. to max.) (t_L)	60~150 sec
Peak Temperature (T_P)		260°C
Time within 5°C of Peak Temp (t_p)		20-40 sec
Ramp-down Rate		6°C/sec Max.
Time (25°C to Peak Temp)		8 mins Max.



PACKAGING SPECIFICATION



Item Series	D±	d±	L±	t±	W±	P0±	P1±	P2±	D0±	E±	F±	A0±	K0±	B0±	t±	pcs
MGT4-2S	330	13.00	20.00	2.00	16.00	4.00	12.00	2.00	1.55	1.75	7.50	4.27	5.20	4.45	0.50	900

Unit: mm

*Specifications subject to change without notice.