

Description

GDT (Gas Discharge Tubes) is placed in front of, and in parallel with, sensitive telecom equipment such as power lines, communication lines, signal lines and data transmission lines to help protect them from damage caused by transient surge voltages that may result from lightning strikes and equipment switching operations. These devices do not influence the signal in normal operation. However, in the event of an overvoltage surge, such as a lightning strike, the GDT switches to a low impedance state and diverts the energy away from the sensitive equipment. Our GDTs offer a high level of surge protection, a broad voltage range, low capacitance, and many form factors including new surface mount devices, which makes them suitable for applications such as Main Distribution Frame (MDF) modules, high data-rate telecom applications (e.g. ADSL, VDSL), and surge protection on power lines. Their low capacitance also results in less signal distortion. When used in a coordinated circuit protection solution with PolySwitch devices, they can help equipment manufacturers meet stringent safety regulatory standards.

2 Electrode GDT Graphical Symbol



Features

- Stable breakdown voltage
- High insulation resistance
- High current rating
- Low capacitance (≤0.5pF)
- Stable performance over life
- Large absorbing transient current capability
- Fast response time
- RoHS compliant
- Standard Size: 3.2mm*1.6mm*1.6mm
- Meets MSL level 1, per J-STD-020
- Storage and operating temperature: -40℃ ~ +90℃

Application

- Repeaters, Modems
- Subscriber protection
- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment
- Branch exchange
- Subscriber protection
- Alarm system
- Tuner
- Antenna protection

Electrical Characteristics (T_A=25℃ unless otherwise noted)

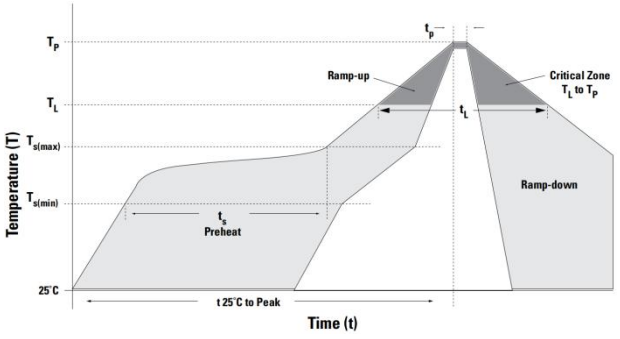
Part Number	Device Marking Code	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Minimum Insulation Resistance		Maximum Capacitance
		100V/s (V)	1000V/μs (V)	8/20μs, 10 times (kA)	Test Voltage	GΩ	1MHz (pF)
KSMD3216-90N	None	90±30%	750	0.5	50VDC	1	0.5
KSMD3216-150N	None	150±30%	750	0.5	50VDC	1	0.5
KSMD3216-200N	None	200±30%	850	0.5	100VDC	1	0.5
KSMD3216-230N	None	230±30%	850	0.5	100VDC	1	0.5
KSMD3216-300N	None	300±30%	900	0.5	100VDC	1	0.5
KSMD3216-350N	None	350±30%	950	0.5	100VDC	1	0.5
KSMD3216-400N	None	400±30%	1000	0.5	100VDC	1	0.5
KSMD3216-420N	None	420±30%	1000	0.5	100VDC	1	0.5
KSMD3216-470N	None	470±30%	1100	0.5	100VDC	1	0.5

Test Methods and Results

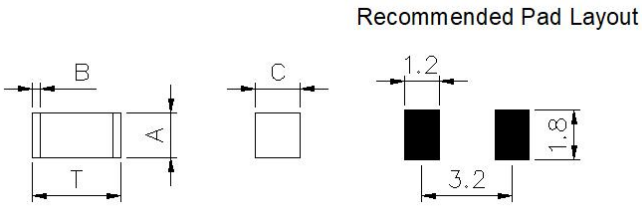
Items	Test Method	Standard
DC Spark-over Voltage	measured with voltage ramp dv/dt=100V/s.	To meet the specified value
Maximum Impulse Spark-over Voltage	measured with voltage ramp dv/dt=1000V/μs.	To meet the specified value
Impulse Discharge Current	applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time,	To meet the specified value
Insulation Resistance	measured between two electrodes.	To meet the specified value
Capacitance	measured between two electrodes. Test frequency: 1MHz	To meet the specified value

Soldering Parameters (Reflow Soldering)

Reflow Condition		Pb-Free Assembly
Pre Heat	-Temperature Min ($T_{S\ min}$)	150℃
	-Temperature Max ($T_{S\ max}$)	200℃
	-Time (min to max) (t_S)	60-180 secs
Average ramp-up rate(Liquidus Temp (T_L) to peak		3℃/second max.
$T_{S\ (max)}$ to T_L-Ramp-up Rate		3℃/second max.
Reflow	-Temperature (T_L) (Liquidus)	217℃
	-Time (min to max) (t_L)	60-150 seconds
Peak Temperature (T_P)		260℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature		8 minutes max.
Do not exceed		260℃



Dimensions



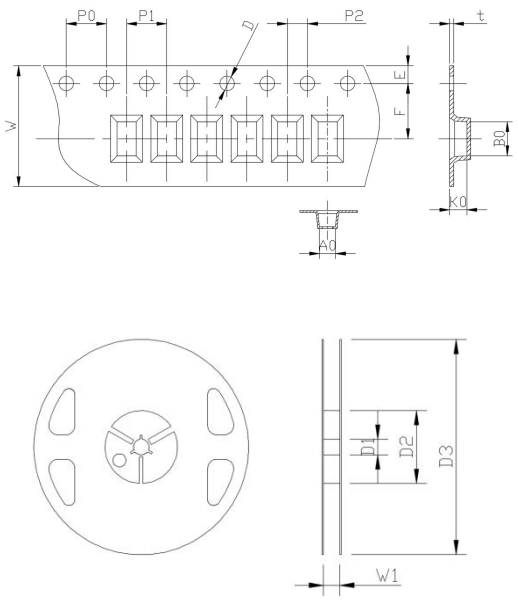
Symbol	Millimeters	Inches
T	3.2±0.3	0.126±0.012
A	1.6±0.2	0.063±0.008
B	0.3±0.1	0.012±0.004
C	1.6±0.2	0.063±0.008

Part Marking System

None

Packaging Specification

Part number	Quantity	Packaging Option
KSMD3216-xxN	2500	Tape & Reel - 12mm tape/7" reel



Symbol	Millimeters	Inches
W	12.0±0.2	0.472±0.008
P0	4.0±0.2	0.157±0.008
P1	4.0±0.1	0.157±0.004
P2	2.0±0.1	0.079±0.004
D	1.55±0.1	0.061±0.004
E	1.75±0.1	0.069±0.004
F	5.5±0.1	0.217±0.004
A0	1.9±0.1	0.075±0.004
K0	1.9±0.1	0.075±0.004
B0	3.5±0.1	0.138±0.004
t	0.3±0.1	0.012±0.004
D0	13.0±1.0	0.512±0.039
D1	60.0±2.0	2.362±0.079
D2	178.0±2.0	7.008±0.079
W1	12.5±0.2	0.492±0.008