#### SMD3225 Series

### **Description**

Gas discharge tubes (GDT) use noble gasses enclosed in ceramic tubes to provide an alternate circuit path for voltage spikes. The ceramic envelope and with nickel connectors allow for high loads. SMD3225 Gas Discharge Tubes (GDT) series has a surge rating of 1kA, 8/20µs.Offered in a Squared Surface Mount package, which helps to make pick and place on PCB process easier.

This GDT series is perfectly suited for broadband equipment applications. The GDT's low off-state capacitance is compatible with high bandwidth applications and this capacitance loading value does not vary if the voltage across the GDT changes.

SMD3225 Gas Discharge Tube (GDT) series are specifically designed for protection of electrical, multimedia, and communication equipment against over voltage transients in surface mount assembly applications.



## **Electrical symbol**



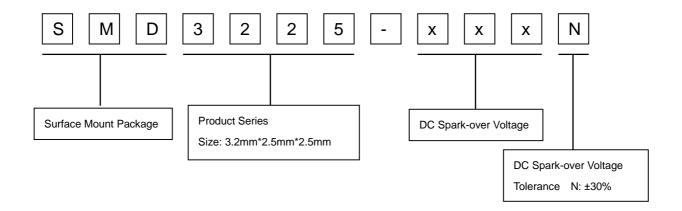
#### **Features**

- Excellent response to fast rising transients
- I Stable breakdown voltage
- I GHz working frequency
- I 8/20µs Impulse current capability: 1KA
- I Surface Mount package
- I Non-Radioactive
- I Ultra Low capacitance(<0.5pF) and insertion loss
- I Lead-free and RoHS compliant
- I Very Small Size(EIA 1210)
- I Storage and operational temperature: -40~+90°C

### **Applications**

- I Communication equipment
- I CATV equipment
- I Test equipment
- I Data lines
- I Power supplies
- I Telecom SLIC protection
- I Broadband equipment
- ADSL equipment, including ADSL2+
- I XDSL equipment
- I Satellite and CATV equipment
- I General telecom equipment

#### **Part Number Code**



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### SMD3225 Series

### **Electrical Characteristics**

Part Number		Impulse Spark-over Voltage		Insulation				Life Rati	ngs	
	DC Spork over			Resistance	Capacitance @1MHz	Impulse Discharge		AC	Impulse Withstanding	Impulse Life
	Spark-over Voltage <sup>1) 2)</sup> @100V/S	100V/μS	1KV/μS	3)	@ I WI HZ	Current @8/20µS		Discharge Current	Voltage Capacity	@10/1000μS 10A
		Max	Max	Min	Max	Nominal ±5 times	Max 1 time	Nominal 5 times	@10/700µS, 40W ±5 times	Min
	v	v	v	GΩ	pF	KA	KA	Α	κv	Times
SMD3225-075N	75±30%	500	600	1	0.5	1	1.5	1	6	100
SMD3225-090N	90±30%	500	600	1	0.5	1	1.5	1	6	100
SMD3225-120N	120±30%	500	600	1	0.5	1	1.5	1	6	100
SMD3225-150N	150±30%	500	600	1	0.5	1	1.5	1	6	100
SMD3225-200N	200±30%	600	700	1	0.5	1	1.5	1	6	100
SMD3225-230N	230±30%	600	700	1	0.5	1	1.5	1	6	100
SMD3225-300N	300±30%	700	800	1	0.5	1	1.5	1	6	100
SMD3225-350N	350±30%	800	900	1	0.5	1	1.5	1	6	100
SMD3225-400N	400±30%	850	950	1	0.5	1	1.5	1	6	100
SMD3225-470N	470±30%	900	1000	1	0.5	1	1.5	1	6	100
SMD3225-500N	500±30%	1000	1100	1	0.5	1	1.5	1	6	100
SMD3225-600N	600±30%	1100	1200	1	0.5	1	1.5	1	6	100
Glow Voltage at 10	)mA			~60	0V					
Arc Voltage at 1A				~10	0V					
Glow to Arc transit	ion Current			~0.	.2A					
Weight				~0.	.095g					
Operation and stor	age temperatu	ıre		-40	)~90°C					
Climatic category (	IEC 60068-1).			40/	/090/21					
Marking				Wit	thout					
Surface treatment.				Ma	tte-tin plated					

 $<sup>^{1)}</sup>$  At delivery AQL 0.65 level II, DIN ISO 2859

70V and 75V at DC 25V 90V~150V at DC 50V Other at DC 100V

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Terms in accordance with ITU-T Rec. K.12, IEC 61643-311, GB/T 9043.





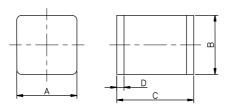
<sup>2)</sup> In ionized mode

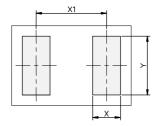
<sup>&</sup>lt;sup>3)</sup> Insulation Resistance Measuring Voltage:



### SMD3225 Series

### **Dimensions**

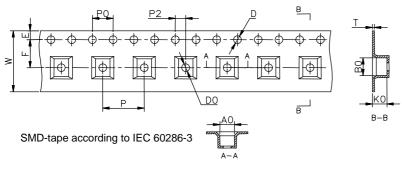


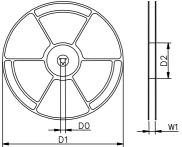


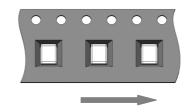
Recommended Soldering Pad Layout

Symbol	Millimeters	Inches	
A	2.5±0.2	0.098±0.008	
В	2.5±0.2	0.098±0.008	
С	3.2±0.3	0.126±0.012	
D	0.3±0.1	0.012±0.004	
х	1.3	0.051	
X1	3.3	0.130	
Υ	2.8	0.110	

# **Taping and Reel Specifications**







Direction of Unreeling

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Symbol Millimeters		Inches		
W	12±0.3	0.472±0.012		
A0	2.8±0.1	0.110±0.004		
В0	3.5±0.1	0.138±0.004		
K0	2.8±0.1	0.110±0.004		
Р	8.0±0.1	0.315±0.004		
F	5.5±0.1	0.217±0.004		
E	1.75±0.1	0.069±0.004		
D	1.5+0.1/-0.0	0.059+0.004/-0.0		
P0	4±0.1	0.157±0.004		
P2	2±0.1	0.079±0.004		
T	0.35±0.05	0.014±0.002		
D0	13.3±0.15	0.524±0.006		
D1	330±2	12.992±0.079		
D2	100+1/-2	3.937+0.039/-0.079		
W1	12.5±0.4	0.492±0.016		

### **Packaging Quantity:**

2,500 PCS per reel (13")

3 reels per inner box

7,500 PCS per inner box

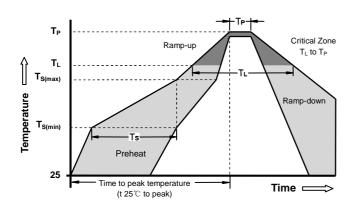






### SMD3225 Series

## **Soldering Parameters - Reflow Soldering (Surface Mount Devices)**



Reflow Co	ondition	Pb - Free assembly		
	-Temperature Min (T <sub>s(min)</sub> )	150°C		
Pre Heat	-Temperature Max (T <sub>s(max)</sub> )	200°C		
	- Time (min to max) (t <sub>s</sub> )	60 -180 Seconds		
Average r T <sub>L</sub> ) to pea	amp up rate ( Liquids Temp k	3°C/second max		
T <sub>S(max)</sub> to T	L - Ramp-up Rate	5°C/second max		
Reflow	- Temperature (T <sub>L</sub> ) (Liquids)	217°C		
	- Time (min to max) (t <sub>s</sub> )	60 -150 Seconds		
Peak Tem	perature (T <sub>P</sub> )	260 +0/-5°C		
Time with Temperate	in 5°C of actual peak ure (t <sub>p</sub> )	10 - 30 Seconds		
Ramp-dov	vn Rate	6°C/second max		
Time 25°C	to peak Temperature (T <sub>P</sub> )	8 minutes Max		
Do not ex	ceed	260°C		

Surface mounted components (SMD) may exhibit a temporary increase in the DC spark-over voltage after the solder reflow process. The components will recover within 24 hours. There is no quality defect nor change in protection levels during the temporary change in DC spark-over voltage.

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