

SURGiNG

紹 鑫 實 業



Surge Arresters

陶瓷气体放电管

SE3 Series

Gas Discharge Tubes - SE3 Series

Features



- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs.
- Stable breakdown voltage.
- High insulation resistance.
- Low capacitance ($\leq 2\text{pF}$)
- High holdover voltage
- Large absorbing transient current capability.
- Micro-Gap Design
- Size: 6.0mm*8mm
- Storage and operational temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Meets MSL level 1, per J-STD-020
- Safety certification: UL: E244458

Applications

- Repeaters, Modems.
- Telephone Interface, Line cards.
- Data communication equipment.
- Line test equipment

Part Number Code

SE3 3 - 230X F

Series:

SE3系列: $\phi 6*8$
SE8系列: $\phi 8*10$

LeadType:

0=SMD
3=Thrust

DCLineVoltage:

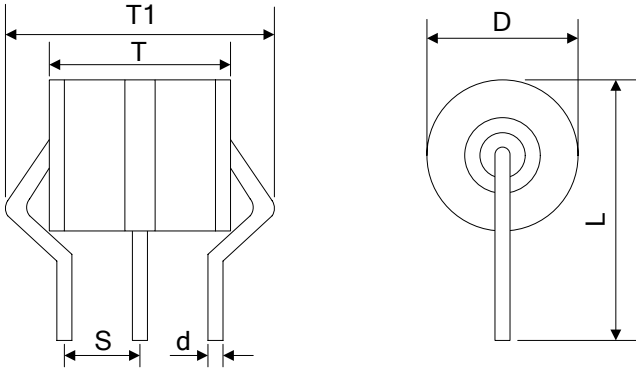
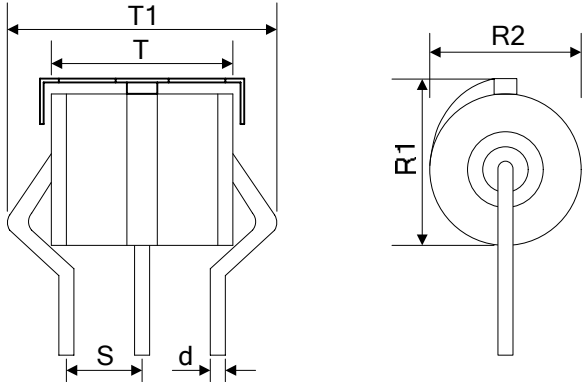
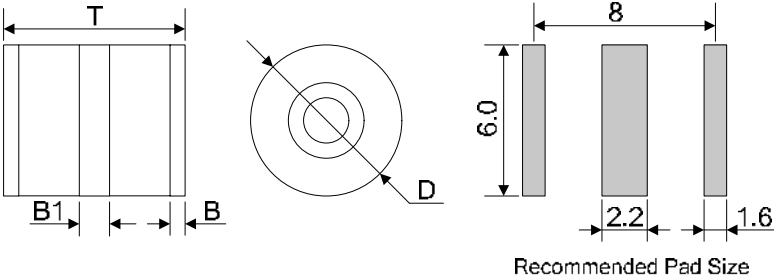
90X=90V
230X=230V
102X=1000V

Package:

F=With Fail-Short mechanism

Gas Discharge Tubes - SE3 Series

Dimensions

33 Type		Dimension (mm)		
		Symbol	Spec.	Tolerance
		D	6.0	+0.2, -0.5
		T	8	±0.5
		T1	15.0	Max.
		L	16.0	Max.
33-F Type		S	3.8	±0.3
		d	0.8	±0.1
		R1	7.8	±0.4
		R2	6.3	±0.3
30 Type		D	6.0	±0.2
		T	8	±0.5
		B	1.0	±0.1
		B1	1.5	±0.2
		Recommended Pad Size		

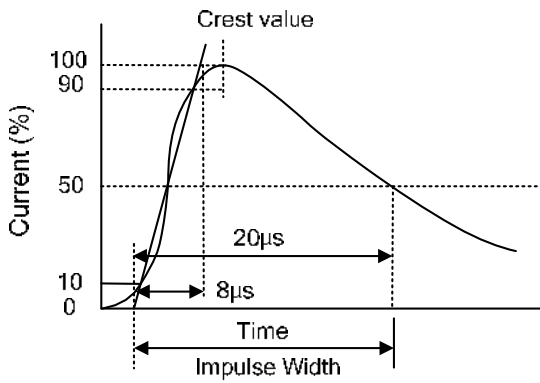
Gas Discharge Tubes - SE3 Series

Electrical Characteristics

Part Number		DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance
		100V/s	1000V/ μ s	8/20 μ s 10times	50Hz, 1sec	10/1000 μ s 100A	Test Voltage	(G Ω)	1MHz
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)
SE33-75X	SE30-75X	75 \pm 20%	750	5.0	5.0	200	25	1.0	2.0
SE33-90X	SE30-90X	90 \pm 20%	750	5.0	5.0	200	50	1.0	2.0
SE33-100X	SE30-100X	100 \pm 20%	750	5.0	5.0	200	50	1.0	2.0
SE33-110X	SE30-110X	110 \pm 20%	750	5.0	5.0	200	50	1.0	2.0
SE33-150X	SE30-150X	150 \pm 20%	800	5.0	5.0	200	100	1.0	2.0
SE33-230X	SE30-230X	230 \pm 20%	800	5.0	5.0	200	100	1.0	2.0
SE33-250X	SE30-250X	250 \pm 20%	800	5.0	5.0	200	100	1.0	2.0
SE33-300X	SE30-75X	300 \pm 20%	800	5.0	5.0	200	100	1.0	2.0
SE33-350X	SE30-350X	350 \pm 20%	850	5.0	5.0	200	100	1.0	2.0
SE33-470X	SE30-470X	470 \pm 20%	950	5.0	5.0	200	250	1.0	2.0
SE33-600X	SE30-600X	600 \pm 20%	1300	5.0	5.0	200	250	1.0	2.0
SE33-800X	SE30-800X	800 \pm 20%	1500	5.0	5.0	200	250	1.0	2.0

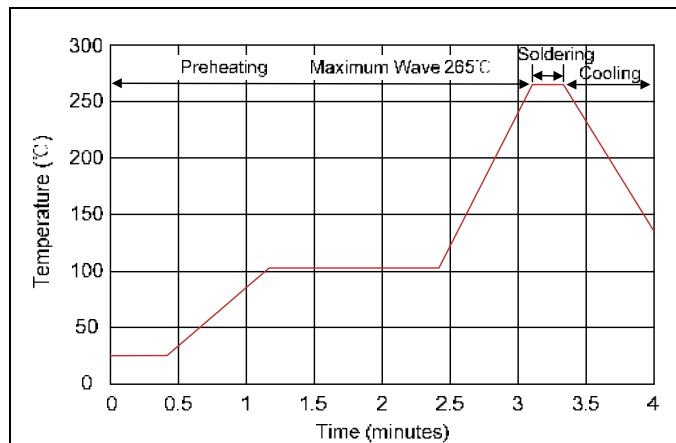
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Electrical Ratings

Items	Test Condition/Description	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt=100V/s$. Test is between each side electrode and center electrode.	To meet the specified value
Maximum Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with voltage ramp $dv/dt=1000V/\mu s$. Test is between each side electrode and center electrode.	
Impulse Discharge Current	<p>Maximum surge current that can be applied through center electrode with $8/20\mu s$ waveform, for 10 times with 3min interval time, which will be equally divided between each side electrode to center electrode, without causing the DC breakdown voltage to change more than 25% from its initial measured value.</p>  <p>The graph shows a current waveform starting at 0% and rising to a peak labeled 'Crest value' at 100%. The time to reach the crest is marked as 8µs. The time to decay to 50% of the peak is marked as 20µs. The total duration of the pulse is labeled as 'Impulse Width'.</p>	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min. DC spark-over voltage shall not change more than $\pm 25\%$ from its initial value. Test is between each side electrode and center electrode. $IR > 10^8$ ohms (-20%, +30% for 70~90V).	
Insulation Resistance	The resistance of gas tube shall be measured between each side electrodes and center electrode.	
Capacitance	The capacitance of gas tube shall be measured between each side electrodes and center electrode. Test frequency: 1MHz	

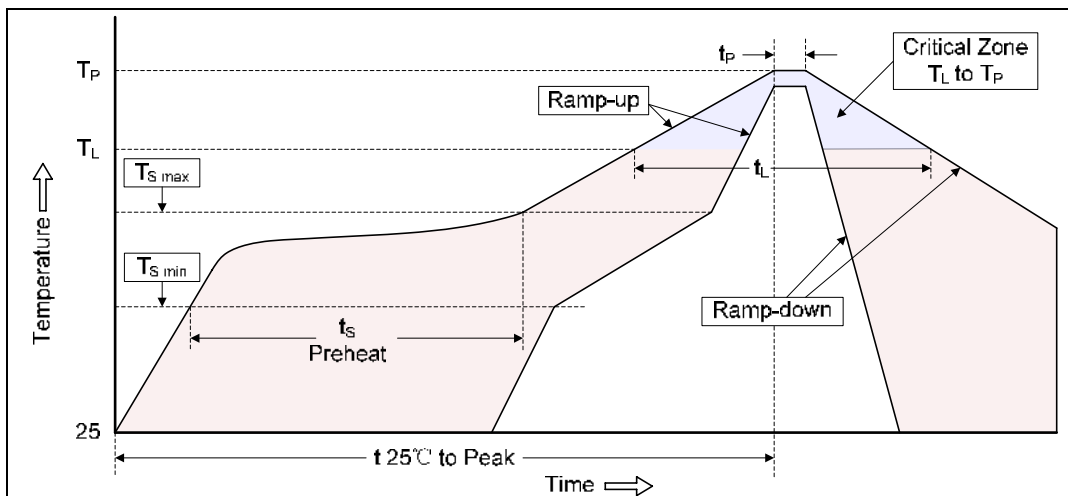
Recommended Soldering Conditions

Wave Soldering



Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time

Reflow Soldering

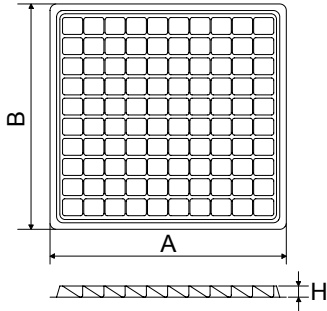
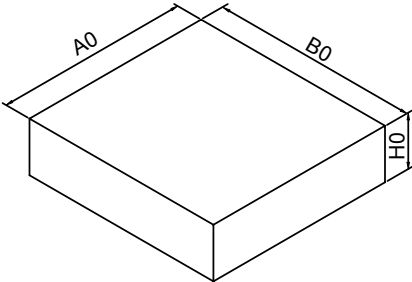


Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat	
-Temperature Min (TS min)	150°C
-Temperature Max (TS max)	200°C
-Time (min to max) (ts)	60-180 seconds
TS max to TL	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (TL)	217°C
-Time (tl)	60-150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

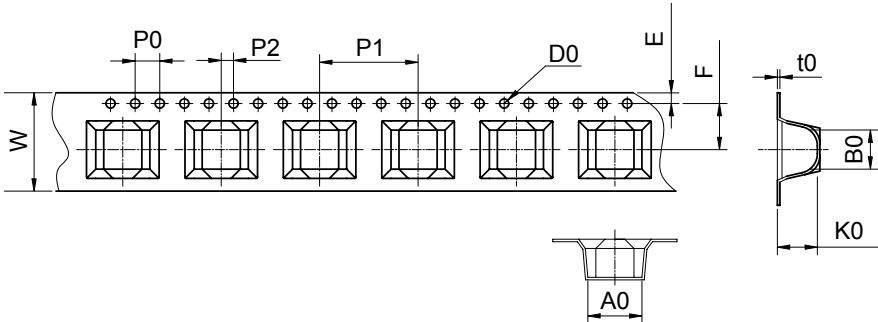
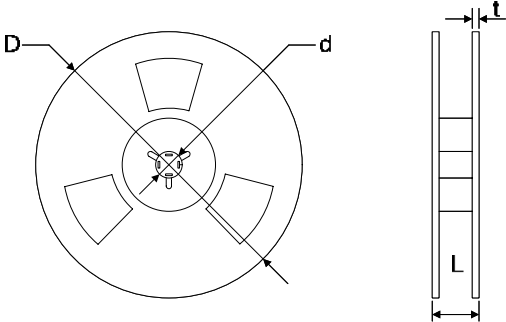
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Packaging

Axial Packing (Bulk)

Skin packing		Symbol	Dimension (mm)	
			Spec.	Tolerance
		A	217.0	±1.0
		B	207.0	±1.0
		H	10.3	±0.2
Quantity: 100pcs				
Inner box		A0	338.0	±1.0
		B0	336.0	±1.0
		H0	58.0	±1.0
Quantity: 500pcs				

SMD Packing (Tape & Reel)

Tape		Symbol	Dimension (mm)	
			Spec.	Tolerance
		W	16.00	±0.20
		P0	4.00	±0.10
		P1	16.00	±0.10
		P2	2.00	±0.10
		D0	1.55	±0.05
		E	1.75	±0.10
		F	7.50	±0.10
		A0	8.80	±0.10
		K0	6.20	±0.10
		B0	6.35	±0.10
		t0	0.50	±0.05
Reel		D	330.00	±1.00
		d	13.00	±0.50
		L	20.00	±0.50
		t	2.00	±0.20
Quantity: 600pcs				