

Spark Gap (SPG) Data Sheet

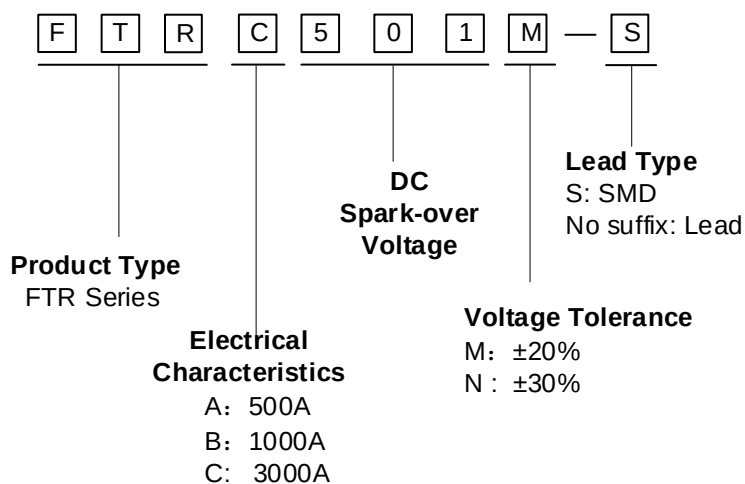
Features

- Approximately zero leaking current before clamping voltage
- Less decay at on/off state.
- High capability to withstand repeated lightning strikes.
- Low electrode capacitance($\leq 0.8\text{pF}$) and high isolation($\geq 100\text{M}\Omega$).
- RoHS compliant.
- Bilateral symmetrical.
- Temperature, humidity and lightness insensitive.
- Operating temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Storage temperature: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Meets MSL Level 1, per J-STD-020

Applications

- Power Supplies
- Motor sparks eliminating
- Relay switching spark absorbing
- Electronic devices requiring UL497A and UL497B compliant
- Telephone/Fax/Modem/Antenna/Amplifies
- High frequency signal transmitters/receivers

Part Number Code

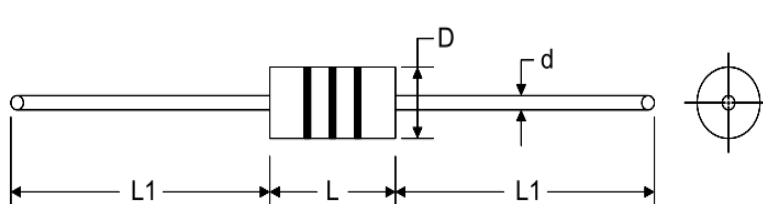
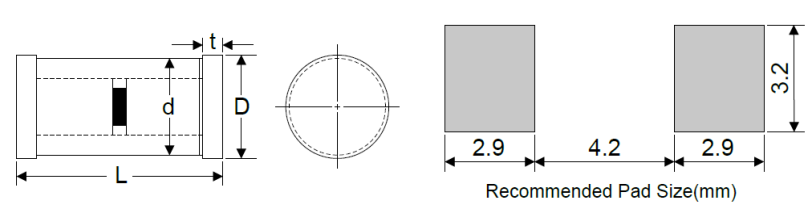


Electrical Characteristics

Part Number		DC Spark-over Voltage	Impulse Life Test	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current
		Vs	8/20us 100A	Test Voltage	(MΩ)	(1MHz 1V)	8/20us
		(v)	(times)	DC(V)		(pF)	(A)
FTRC141X	FTRC141X-S	140	250	50	100	0.8	3000
FTRC201X	FTRC201X-S	200	250	100	100	0.8	3000
FTRC301X	FTRC301X-S	300	250	100	100	0.8	3000
FTRC401X	FTRC401X-S	400	250	250	100	0.8	3000
FTRC501X	FTRC501X-S	500	250	250	100	0.8	3000
FTRC601X	FTRC601X-S	600	250	250	100	0.8	3000
FTRC701X	FTRC701X-S	700	250	250	100	0.8	3000
FTRC102X	FTRC102X-S	1000	250	500	100	0.8	3000

NOTES: X=M($V_s \pm 20\%$)&X=N($V_s \pm 30\%$)

Dimensions

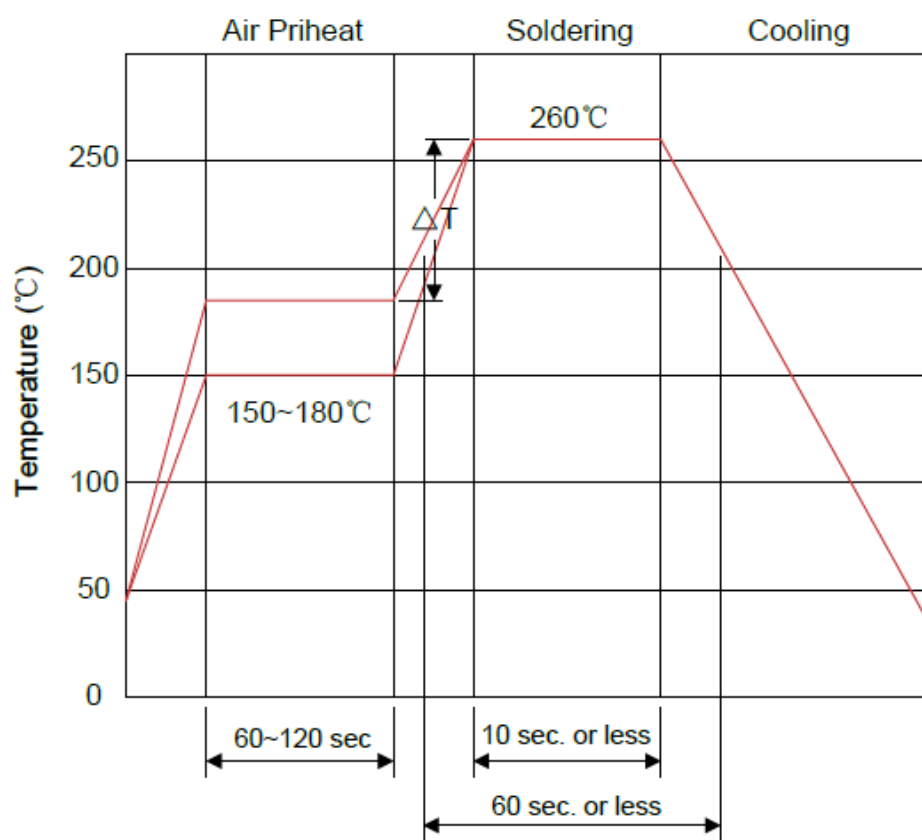
L Type		Symbol	Dimension (mm)
		L	4.30±0.50
		L1	28.00±3.00
		D	Φ3.10±0.50
		d	Φ0.50±0.05
S Type		L	6.00±0.50
		D	Φ3.30±0.50
		d	Φ3.10±0.50
		t	0.40±0.10

Electrical Ratings

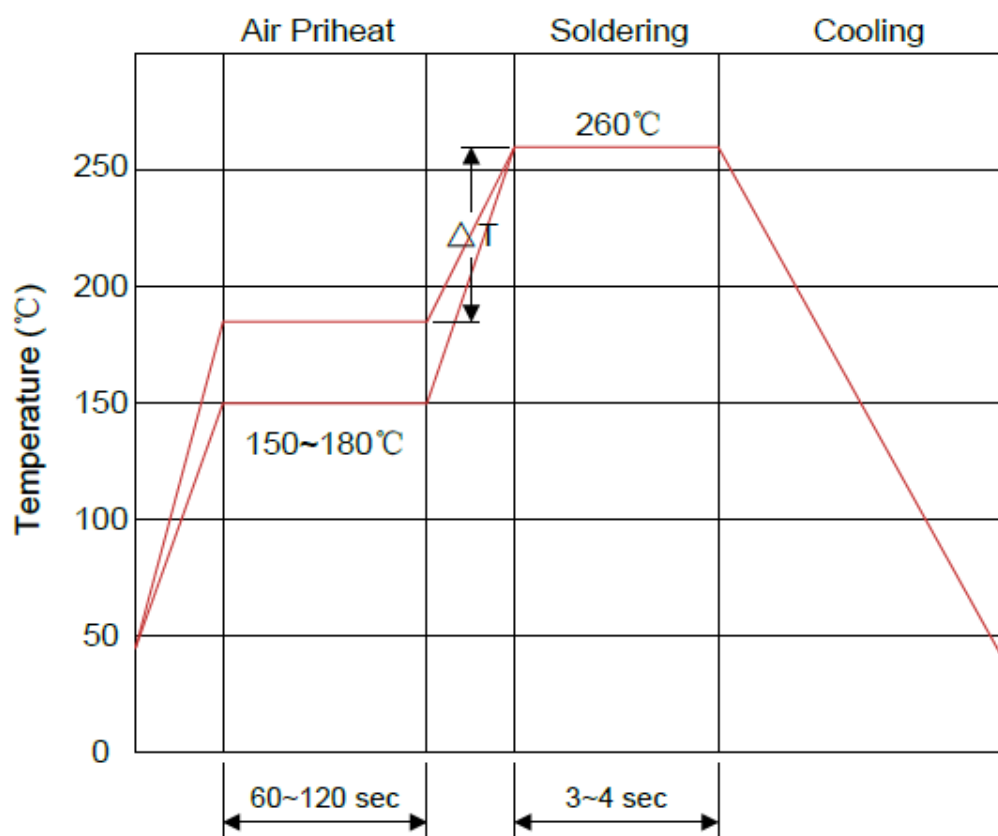
Items	Test Condition/Description	Standard
DC spark-over voltage	Measure starting discharge voltage (Vs) by gradually increasing applied DC voltage. Test current is 0.5mA max. And the DC voltage ascends up within 100V/s($V_s < 1000V$) or 500V/s($V_s \geq 1000V$).	Meet specified value.
Capacitance	Measure the electrostatic capacitance by applying a voltage of less than 6V (at 1KHz) between terminals.	
Insulation Resistance	Measure the insulation resistance across the terminal at regular voltage. But the test voltage doesn't over the DC spark-over voltage.	
Static Life	10KV with 1500pf condenser is discharged through 0Ω resistor. 200 times at an interval of 10sec.	$\Delta V_s/V_s$ $\leq 30\%$ Characteristics of other items must meet the specified value.
Surge Current Capacity	1.2/50μs & 8/20μs, 3000A, electrically connected with a resistor (1~2 Ω), ± 5 times, each time interval 60 seconds. Thereafter, outer appearance shall be visually examined.	No crack and no failures
Cold Resistance	Measurement after -40°C/1000 HRS & normal temperature/2 HRS.	Features are conformed to rated spec.
Heat Resistance	Measurement after 125°C/1000 HRS & normal temperature/2 HRS.	
Humidity Resistance	Measurement after humidity 90~95°C(45°C) /1000 HRS & normal temperature/2 HRS.	
Temperature Cycle	10 times repetition of cycle -40°C/30min → normal, temp/2 min → 125°C /30min, measurement after normal temp/2 HRS.	
Solder Ability	Apply flux and immerse in molten solder 230±5°C for 3sec up to the point of 1.5mm from body. Check for solder adhesion.	Lead wire is evenly covered by solder.
Solder Heat	Measurement after lead wire is dipped up to the point of 1.5mm from body into 260±5°C solder for 10sec.	Conformed to rated spec.
Pull Strength	Apply 0.5kg load for 10sec.	Lead shall not pull out to snap.
Flexural Strength	Bend lead wire at the point of 2mm from body under 0.25 load and back to its original point. Repeat 1 time.	

Soldering Recommendation

Reflow Soldering



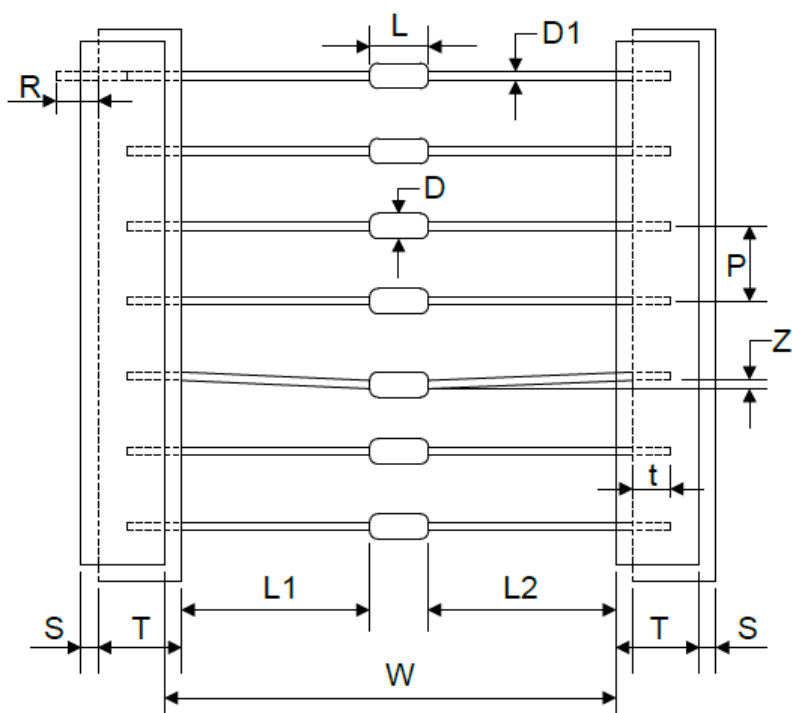
Wave Soldering



Packaging

Axial Packing

Tape



Symbol	Dimension (mm)
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W	52.00±1.50
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P	5.00±0.50
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L1-L2	1.0max.
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T	6.00±1.00
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Z	1.2max.
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R	Terminals must not project from tape.
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t	3.2max.
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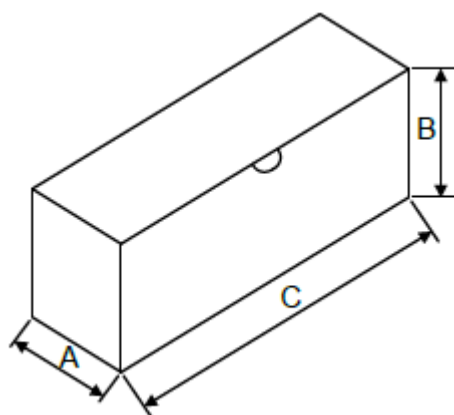
S	0.8max.
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D	φ3.6max.
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D1	φ0.5±0.05
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L	4.5max.
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Inner Box



A	74.0±5.0
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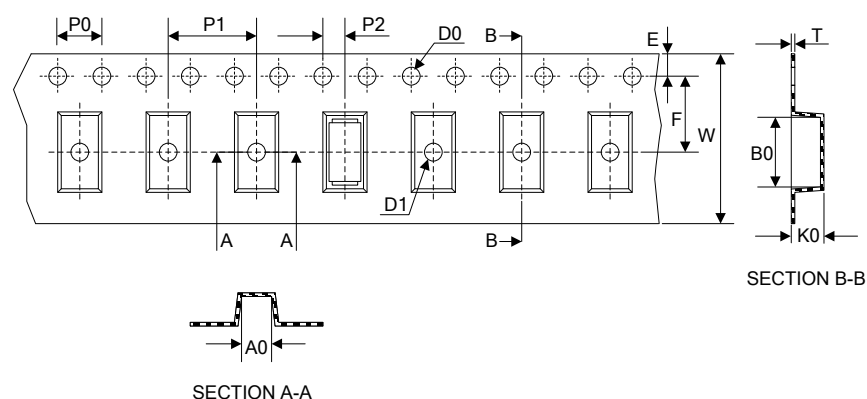
B	7.0±5.0
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C	252.0±5.0
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Quantity: 1500PCS

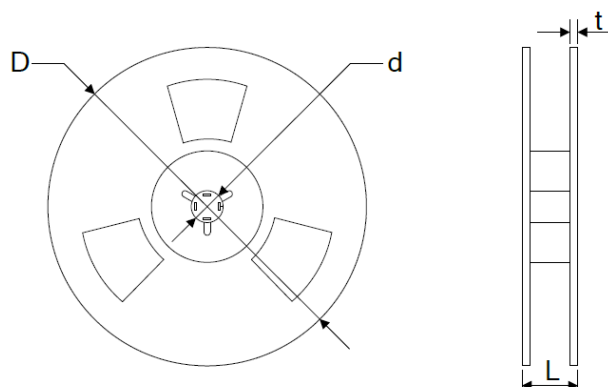
SMD Packing

Tape



Symbol	Dimension (mm)
W	16.00±0.20
P0	4.00±0.10
P1	8.00±0.10
P2	2.00±0.10
D0	Φ1.50±0.10
E	1.75±0.10
F	7.50±0.05
A0	3.50±0.10
B0	6.50±0.10
K0	3.50±0.10
T	0.50max.

Reel



D	330.0±2.0
d	13.0±1.0
L	20.0±3.0
Quantity: 2000PCS	