

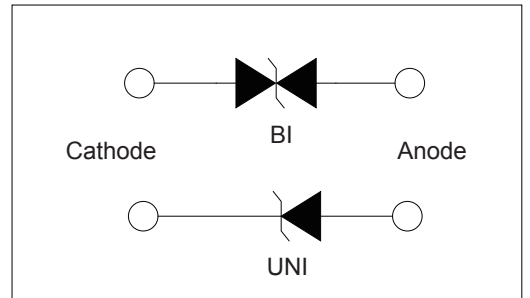
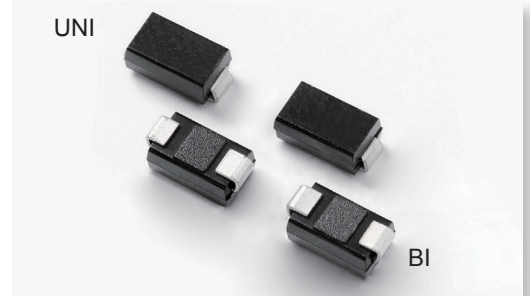
Transient Voltage Suppressors

SMFJ Series

Transient Voltage Suppressors - SMFJ Series

Features

1. For surface mounted applications
2. Low-profile package
3. Optimized for LAN protection applications
4. Ideal for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
5. Ideal for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-4)
6. Low incremental surge resistance
7. IEC 1000-4-2 (ESD) 15 kV (air) 8 kV (contact)
8. IEC 1000-4-4 (EFT) 40 A (tp = 5/ 50 ns)
9. IEC 1000-4-5 (Lightning) 24 A (tp = 8/ 20 μs)
10. Low incremental surge resistance, excellent clamping capability
11. 200W peak pulse power capability with a 10/1000μ waveform, repetition rate (duty cycle): 0.01%*
12. Very fast response time
13. High temperature soldering guaranteed: 260°C/ 10 seconds at terminals



Applications

TVS devices are ideal for the protection of I/O interfaces, VCC bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

Mechanical Characteristics

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation at TA=25°C by 10x1000μs test waveform (Fig.1)(Note 1),(Note 2)	P _{PPM}	300	Watts
Power Dissipation on infinite heat sink at TA=50°C	P _D	2	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave(Note 3)	I _{FSM}	20	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4)	V _F	3.5/6.5	V
Operating junction and Storage Temperature Range.	T _J , T _{STG}	-55°C to 150°C	°C
Typical Thermal Resistance Junction to Lead	R _{θJL}	30	°C/W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	120	°C/W

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above TA = 25°C per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 per minute maximum.
3. VF<3.5V for devices of VBR ≤ 200V and VF<5.0V for devices of VBR ≥ 201V.

Electrical Characteristics

Type Number	Reverse Stand-Off Voltage	Breakdown Voltage@IT		Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(UNI)	V _{RWM} (V)	V _{BR} MIN.(V)	V _{BR} MAX.(V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
SMFJ3.0A	3.0	4.10	4.50	10	8.0	25.0	400
SMFJ5.0A	5.0	6.40	7.25	10	9.2	21.7	400
SMFJ6.0A	6.0	6.67	7.67	10	10.3	19.4	400
SMFJ6.5A	6.5	7.22	8.30	10	11.2	17.9	400
SMFJ7.0A	7.0	7.78	8.95	10	12.0	16.7	250
SMFJ7.5A	7.5	8.33	9.58	1	12.9	15.5	100
SMFJ8.0A	8.0	8.89	10.23	1	13.6	14.7	50
SMFJ8.5A	8.5	9.44	10.82	1	14.4	13.9	10
SMFJ9.0A	9.0	10.00	11.50	1	15.4	13.5	5.0
SMFJ10A	10.0	11.10	12.80	1	17.0	11.8	2.5
SMFJ11A	11.0	12.20	14.00	1	18.2	11.0	2.5
SMFJ12A	12.0	13.30	15.30	1	19.9	10.1	2.5
SMFJ13A	13.0	14.40	16.50	1	21.5	9.30	2.5
SMFJ14A	14.0	15.60	17.90	1	23.2	8.60	2.5
SMFJ15A	15.0	16.70	19.20	1	24.4	8.20	2.5
SMFJ16A	16.0	17.80	20.50	1	26.0	7.70	2.5
SMFJ17A	17.0	18.90	21.70	1	27.6	7.20	2.5
SMFJ18A	18.0	20.00	23.30	1	29.2	5.80	2.5
SMFJ20A	20.0	22.20	25.50	1	32.4	6.20	2.5
SMFJ22A	22.0	24.40	28.00	1	35.5	5.60	2.5
SMFJ24A	24.0	26.70	30.70	1	38.9	5.10	2.5
SMFJ26A	26.0	28.90	33.20	1	42.1	4.80	2.5
SMFJ28A	28.0	31.10	35.80	1	45.4	4.40	2.5
SMFJ30A	30.0	33.30	38.30	1	48.4	4.10	2.5
SMFJ33A	33.0	36.70	42.20	1	53.3	3.80	2.5
SMFJ36A	36.0	40.00	46.00	1	58.1	3.40	2.5
SMFJ40A	40.0	44.40	51.10	1	64.5	3.10	2.5
SMFJ43A	43.0	47.80	54.90	1	69.4	2.90	2.5
SMFJ45A	45.0	50.00	57.50	1	72.7	2.80	2.5
SMFJ48A	48.0	53.30	61.30	1	77.4	2.60	2.5
SMFJ51A	51.0	56.70	65.20	1	82.4	2.40	2.5
SMFJ54A	54.0	60.00	69.00	1	87.1	2.30	2.5
SMFJ58A	58.0	64.40	74.10	1	93.6	2.10	2.5
SMFJ60A	60.0	66.70	76.70	1	96.8	1.80	2.5
SMFJ64A	64.0	71.10	81.80	1	103.0	1.70	2.5
SMFJ70A	70.0	77.80	89.50	1	113.0	1.50	2.5
SMFJ75A	75.0	83.30	95.80	1	121.0	1.40	2.5
SMFJ78A	78.0	86.70	99.70	1	126.0	1.40	2.5
SMFJ85A	85.0	94.40	108.20	1	137.0	1.30	2.5
SMFJ90A	90.0	100.00	115.50	1	146.0	1.20	2.5
SMFJ100A	100.0	111.00	128.00	1	162.0	1.10	2.5
SMFJ110A	110.0	122.00	140.50	1	177.0	1.00	2.5
SMFJ120A	120.0	133.00	153.00	1	193.0	0.90	2.5
SMFJ130A	130.0	144.00	165.50	1	209.0	0.80	2.5
SMFJ150A	150.0	167.00	192.60	1	243.0	0.70	2.5
SMFJ160A	160.0	178.00	205.00	1	259.0	0.70	2.5
SMFJ170A	170.0	189.00	217.50	1	275.0	0.60	2.5

Transient Voltage Suppressors - SMFJ Series

Ratings and Characteristic Curves

Figure 1 - Peak Pulse Power Rating Curve

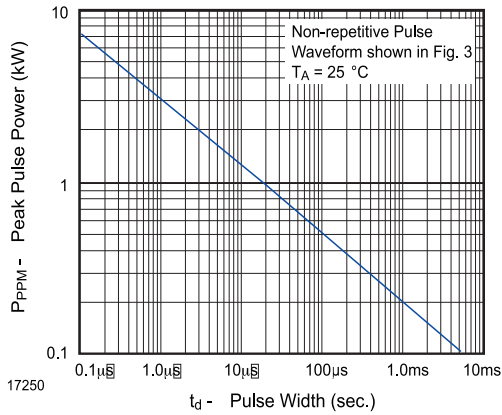


Figure 2 - Pulse Derating Curve

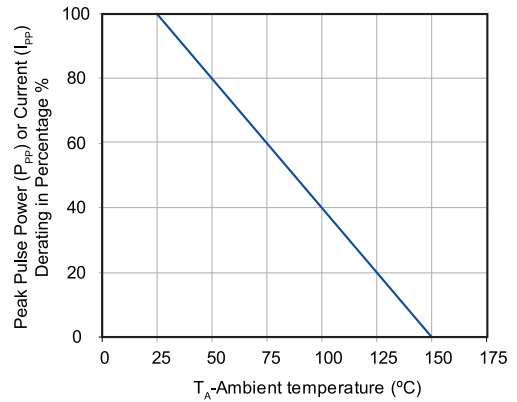
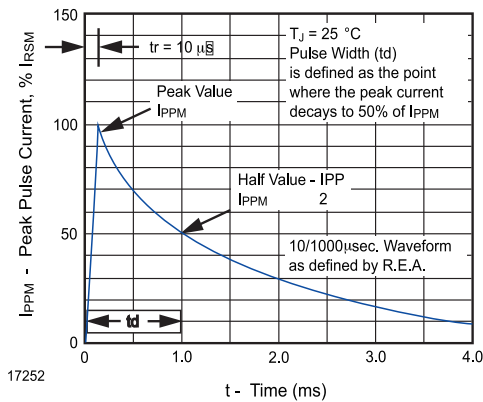


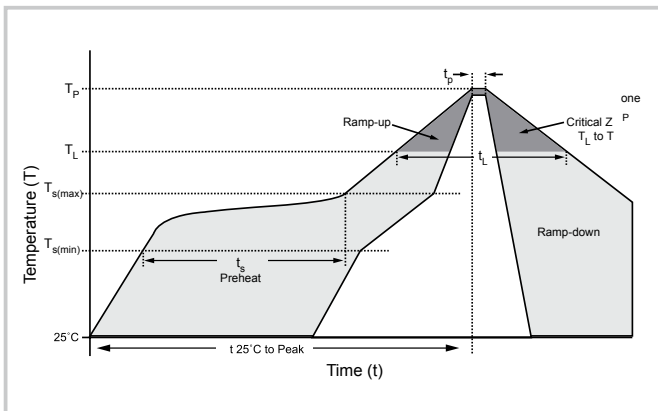
Figure 3 - Pulse Waveform



Transient Voltage Suppressors - SMFJ Series

Soldering Parameters

	Flow Condition	Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60-180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		280°C



Physical Specifications

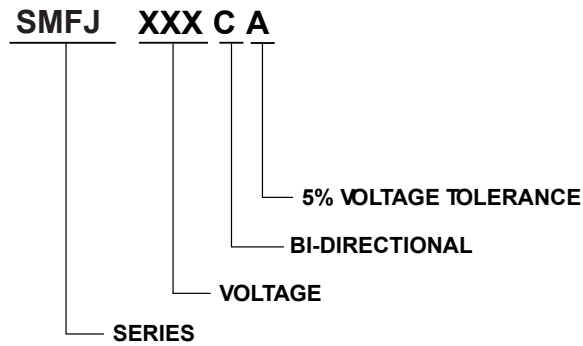
Weight	0.002 ounce, 0.061 gram
Case	JEDEC DO-214AC molded plastic body over passivated junction.
Polarity	Color band denotes the cathode except Bipolar.
Termina	Matte Tin axial leads, solderable per JESD22-B102D.

Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD 22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Transient Voltage Suppressors - SMFJ Series

Part Numbering System



Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
SMFJxxxXX	SOD-123	2000	Tape&Reel - 7' tape	EIA STD RS-481

Warehouse Storage Conditions of Products

- Storage Conditions:
 - Storage Temperature: -10°C~+40°C
 - Relative Humidity: ≤75%RH
 - Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

RuiLongYuan Electronics Co., Ltd.

- Reproducing and modifying information of the document is prohibited without permission from Ruilongyuan International Inc.
- Ruilongyuan International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Ruilongyuan International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Ruilongyuan International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Ruilongyuan International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ruilongyuan International Inc. for any damages resulting from such improper use or sale.

Tel: +86-755-8290 8296

Fax: +86-755-8290 8002

E-mail: jack@ruilon.com