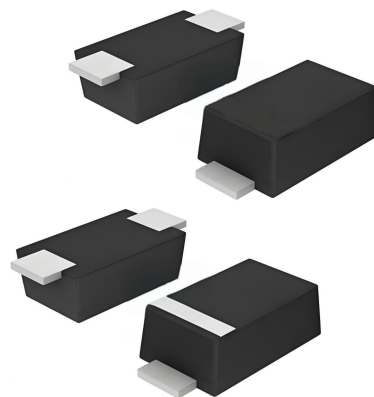


Mechanical Data

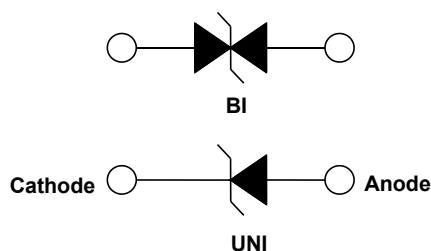
- Case: SMAF Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

Features

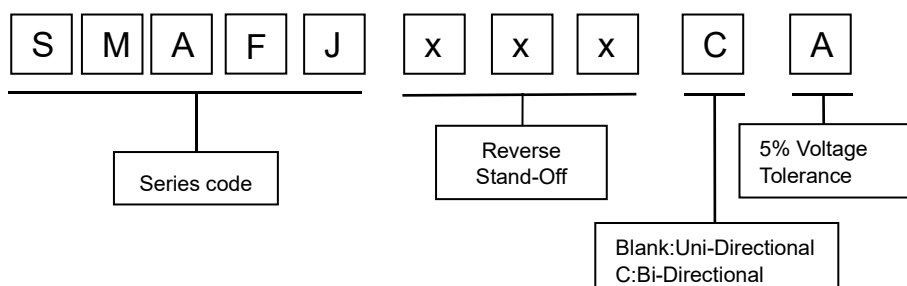
- Fast response time
- Low incremental surge resistance
- Excellent clamping capability
- Low reverse leakage
- Meet MSL level1, per J-STD-020
- For surface mounted applications to optimize board space
- 400W peak pulse power capability with at 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Lead and body according with RoHS standard
- Glass passivated chip



Electrical symbol



Part Number Code



Mechanical Characteristics

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by 10/1000μs Waveform (Fig.2)(Note 1), (Note 2)	P_{PP}	400	W
Power Dissipation on Infinite Heat Sink at $T_L=50^{\circ}\text{C}$ (Fig.6)	P_D	3.3	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	40	A
Operating Temperature Range Storage Temperature Range	T_J , T_{STG}	-65 to 150	$^{\circ}\text{C}$

Notes:

1. Non-repetitive current pulse per Fig.4 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 3.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristics (T_A=25°C unless otherwise noted)

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage		Test Current	Max. Clamping Voltage 10/1000µs	Max. Peak Pulse Current 10/1000µs	Reverse Leakage
				V _{RWM}	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP}	I _R @V _{RWM}
					Min	Max				
UNI	BI	UNI	BI	V	V	V	mA	V	A	µA
SMAFJ5.0A	SMAFJ5.0CA	AE	WE	5.0	6.40	7.00	10	9.2	43.5	800
SMAFJ6.0A	SMAFJ6.0CA	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800
SMAFJ6.5A	SMAFJ6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500
SMAFJ7.0A	SMAFJ7.0CA	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200
SMAFJ7.5A	SMAFJ7.5CA	AP	WP	7.5	8.33	9.21	1	12.9	31.0	100
SMAFJ8.0A	SMAFJ8.0CA	AR	WR	8.0	8.89	9.83	1	13.6	29.4	50
SMAFJ8.5A	SMAFJ8.5CA	AT	WT	8.5	9.44	10.40	1	14.4	27.8	20
SMAFJ9.0A	SMAFJ9.0CA	AV	WV	9.0	10.00	11.10	1	15.4	26.0	10
SMAFJ10A	SMAFJ10CA	AX	WX	10.0	11.10	12.30	1	17.0	23.5	5
SMAFJ11A	SMAFJ11CA	AZ	WZ	11.0	12.20	13.50	1	18.2	22.0	1
SMAFJ12A	SMAFJ12CA	BE	XE	12.0	13.30	14.70	1	19.9	20.1	1
SMAFJ13A	SMAFJ13CA	BG	XG	13.0	14.40	15.90	1	21.5	18.6	1
SMAFJ14A	SMAFJ14CA	BK	XK	14.0	15.60	17.20	1	23.2	17.2	1
SMAFJ15A	SMAFJ15CA	BM	XM	15.0	16.70	18.50	1	24.4	16.4	1
SMAFJ16A	SMAFJ16CA	BP	XP	16.0	17.80	19.70	1	26.0	15.4	1
SMAFJ17A	SMAFJ17CA	BR	XR	17.0	18.90	20.90	1	27.6	14.5	1
SMAFJ18A	SMAFJ18CA	BT	XT	18.0	20.00	22.10	1	29.2	13.7	1
SMAFJ20A	SMAFJ20CA	BV	XV	20.0	22.20	24.50	1	32.4	12.3	1
SMAFJ22A	SMAFJ22CA	BX	XX	22.0	24.40	26.90	1	35.5	11.3	1
SMAFJ24A	SMAFJ24CA	BZ	XZ	24.0	26.70	29.50	1	38.9	10.3	1
SMAFJ26A	SMAFJ26CA	CE	YE	26.0	28.90	31.90	1	42.1	9.5	1
SMAFJ28A	SMAFJ28CA	CG	YG	28.0	31.10	34.40	1	45.4	8.8	1
SMAFJ30A	SMAFJ30CA	CK	YK	30.0	33.30	36.80	1	48.4	8.3	1
SMAFJ33A	SMAFJ33CA	CM	YM	33.0	36.70	40.60	1	53.3	7.5	1
SMAFJ36A	SMAFJ36CA	CP	YP	36.0	40.00	44.20	1	58.1	6.9	1
SMAFJ40A	SMAFJ40CA	CR	YR	40.0	44.40	49.10	1	64.5	6.2	1
SMAFJ43A	SMAFJ43CA	CT	YT	43.0	47.80	52.80	1	69.4	5.8	1
SMAFJ45A	SMAFJ45CA	CV	YV	45.0	50.00	55.30	1	72.7	5.5	1
SMAFJ48A	SMAFJ48CA	CX	YX	48.0	53.30	58.90	1	77.4	5.2	1
SMAFJ51A	SMAFJ51CA	CZ	YZ	51.0	56.70	62.70	1	82.4	4.9	1
SMAFJ54A	SMAFJ54CA	RE	ZE	54.0	60.00	66.30	1	87.1	4.6	1
SMAFJ58A	SMAFJ58CA	RG	ZG	58.0	64.40	71.20	1	93.6	4.3	1

Electrical Characteristics (T_A=25°C unless otherwise noted)

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage		Test Current	Max. Clamping Voltage 10/1000µs	Max. Peak Pulse Current 10/1000µs	Reverse Leakage
				V _{RWM}	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP}	I _R @V _{RWM}
					Min	Max				
UNI	BI	UNI	BI	V	V	V	mA	V	A	µA
SMAFJ60A	SMAFJ60CA	RK	ZK	60.0	66.70	73.70	1	96.8	4.1	1
SMAFJ64A	SMAFJ64CA	RM	ZM	64.0	71.10	78.60	1	103.0	3.9	1
SMAFJ70A	SMAFJ70CA	RP	ZP	70.0	77.80	86.00	1	113.0	3.5	1
SMAFJ75A	SMAFJ75CA	RR	ZR	75.0	83.30	92.10	1	121.0	3.3	1
SMAFJ78A	SMAFJ78CA	RT	ZT	78.0	86.70	95.80	1	126.0	3.2	1
SMAFJ85A	SMAFJ85CA	RV	ZV	85.0	94.40	104.00	1	137.0	2.9	1
SMAFJ90A	SMAFJ90CA	RX	ZX	90.0	100.0	111.00	1	146.0	2.7	1
SMAFJ100A	SMAFJ100CA	RZ	ZZ	100.0	111.0	123.00	1	162.0	2.5	1
SMAFJ110A	SMAFJ110CA	SE	VE	110.0	122.0	135.00	1	177.0	2.3	1
SMAFJ120A	SMAFJ120CA	SG	VG	120.0	133.0	147.00	1	193.0	2.1	1
SMAFJ130A	SMAFJ130CA	SK	VK	130.0	144.0	159.00	1	209.0	1.9	1
SMAFJ150A	SMAFJ150CA	SM	VM	150.0	167.0	185.00	1	243.0	1.6	1
SMAFJ160A	SMAFJ160CA	SP	VP	160.0	178.0	197.00	1	259.0	1.5	1
SMAFJ170A	SMAFJ170CA	SR	VR	170.0	189.0	209.00	1	275.0	1.5	1
SMAFJ180A	SMAFJ180CA	ST	VT	180.0	201.0	222.00	1	292.0	1.4	1
SMAFJ190A	SMAFJ190CA	SU	YU	190.0	209.0	233.00	1	306.0	1.3	1
SMAFJ200A	SMAFJ200CA	SV	VV	200.0	224.0	247.00	1	324.0	1.2	1
SMAFJ210A	SMAFJ210CA	SW	YW	210.0	231.0	258.00	1	324.0	1.1	1
SMAFJ220A	SMAFJ220CA	GX	VX	220.0	246.0	272.00	1	356.0	1.1	1
SMAFJ250A	SMAFJ250CA	SZ	VZ	250.0	279.0	309.0	1	405.0	1.0	1
SMAFJ300A	SMAFJ300CA	TE	UE	300.0	335.0	371.0	1	486.0	0.8	1
SMAFJ350A	SMAFJ350CA	TG	UG	350.0	391.0	432.0	1	567.0	0.7	1

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1 - TVS Transients Clamping Waveform

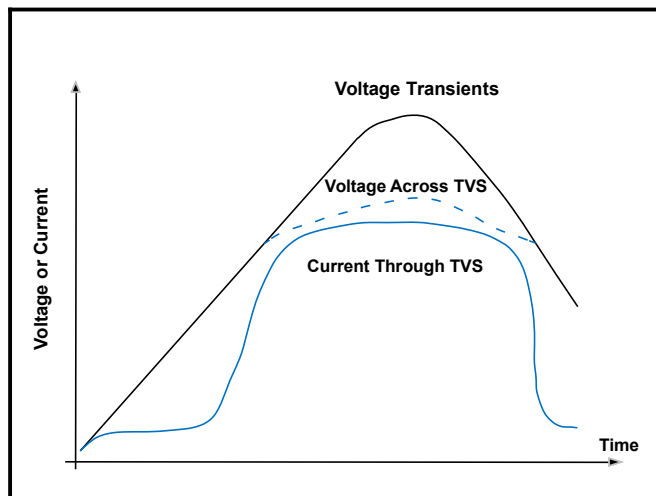
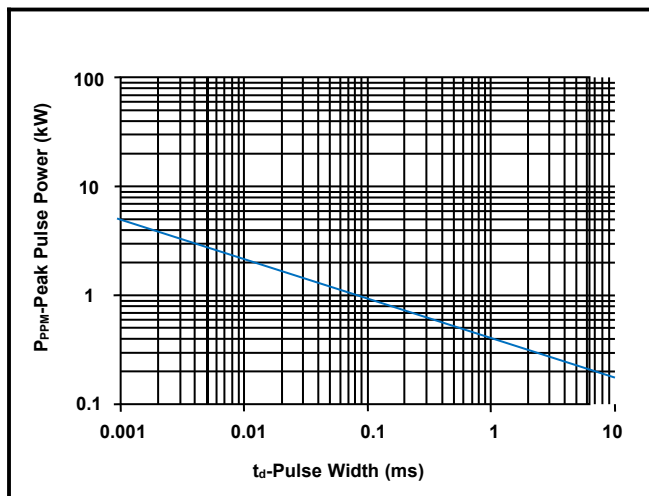


Figure 2 - Peak Pulse Power Rating Curve



Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 3 - Pulse Derating Curve

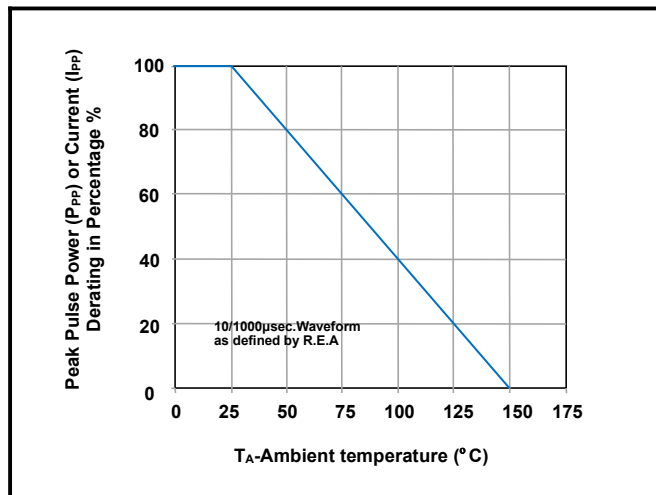


Figure 4 - Pulse Waveform

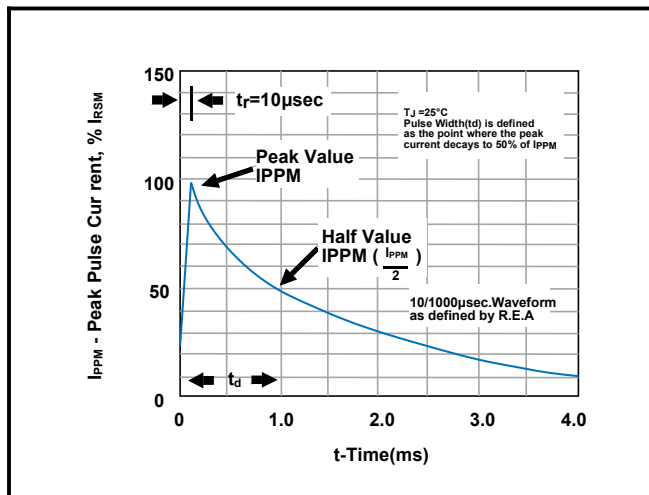


Figure 5 - Typical Junction Capacitance

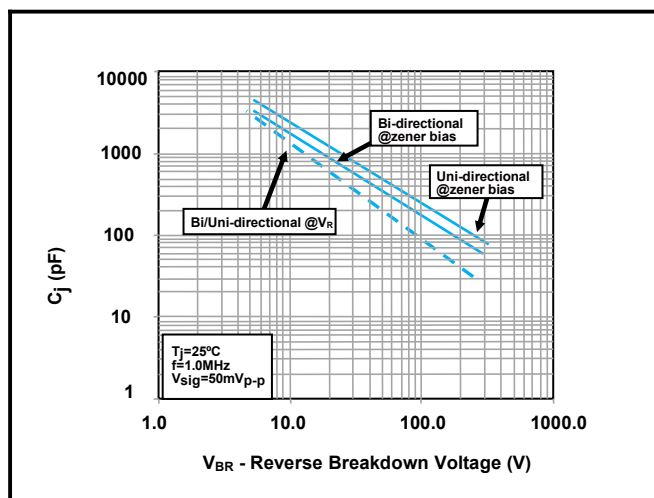


Figure 6 - Steady State Power Derating Curve

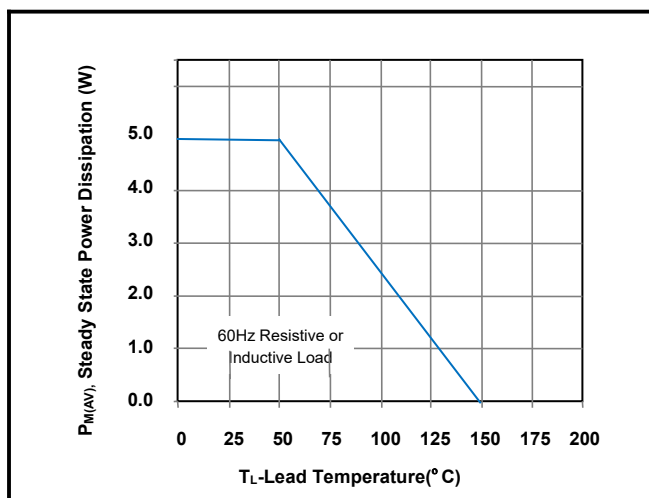
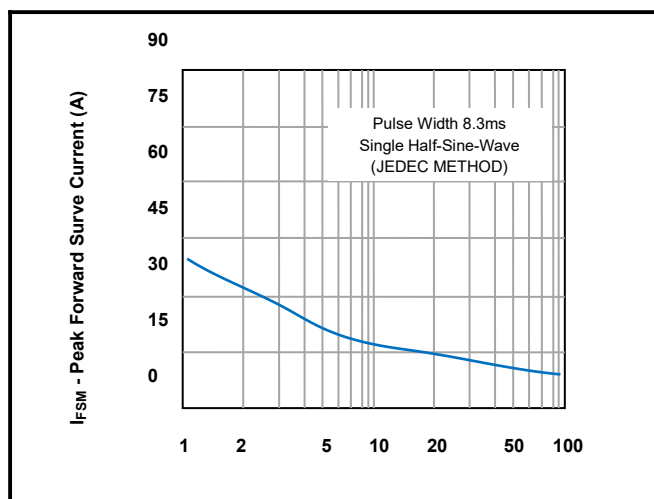
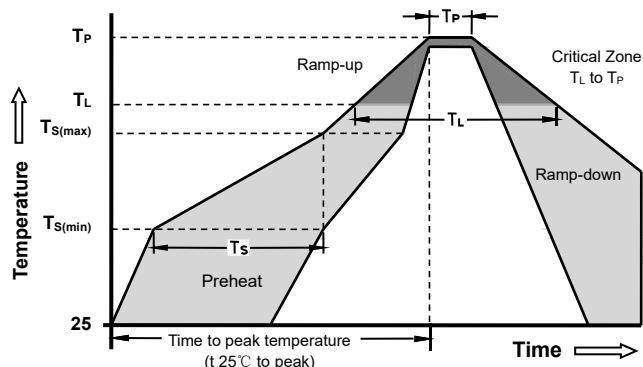
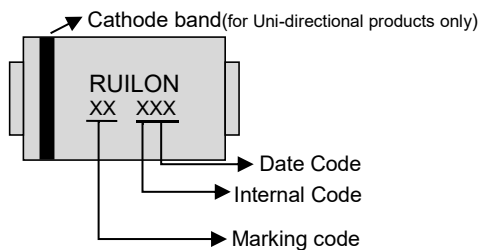
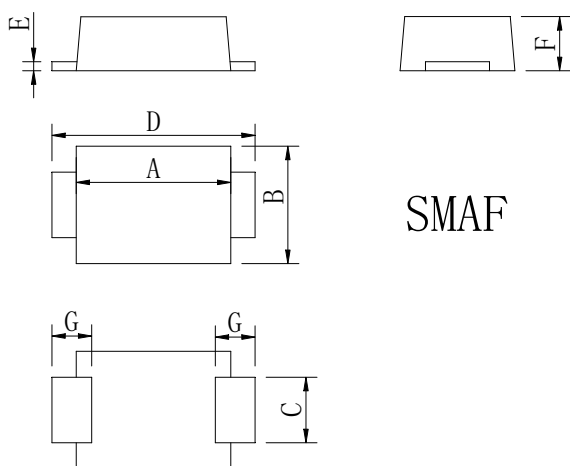


Figure 7 - Maximum Non-Repetitive Surge Current



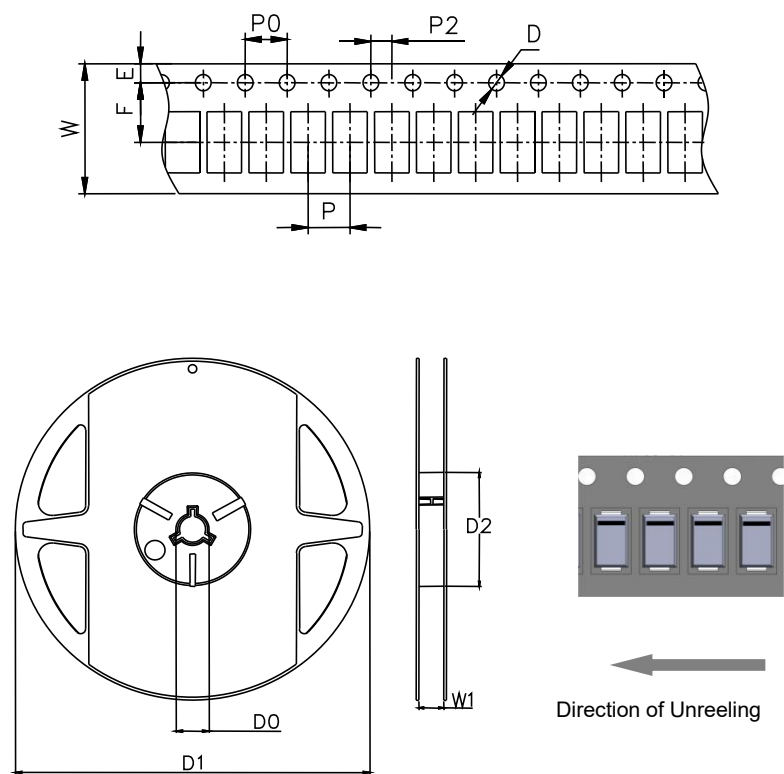
Soldering Parameters - Reflow Soldering (Surface Mount Devices)


Reflow Condition		Pb - Free assembly
Preheat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 -180 Seconds
Average ramp up rate (Liquids 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) (Liquids)	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		260°C

Part Marking System

Dimensions


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	3.30	3.70	0.130	0.146
B	2.40	2.80	0.095	0.110
C	1.30	1.60	0.051	0.063
D	4.35	4.85	0.171	0.191
E	0.10	0.30	0.004	0.012
F	1.00	1.40	0.039	0.065
G	0.60	1.20	0.024	0.047

Taping and Reel Specifications



Symbol	Millimeters	Inches
W	12±0.3	0.472±0.012
P	4±0.1	0.157±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
D0	16.7±0.15	0.657±0.006
D1	330±2	13.0±0.079
D2	59.6+1/-2	2.346+0.039/-0.079
W1	12.64±0.4	0.498±0.016

Part Number	Component package	Quantity	Packaging option	Packaging specification
SMAFJXXXA/CA	DO-214AC(SMA)	5000	Tape&Reel-12mm/13"tape	EIA STD RS-481