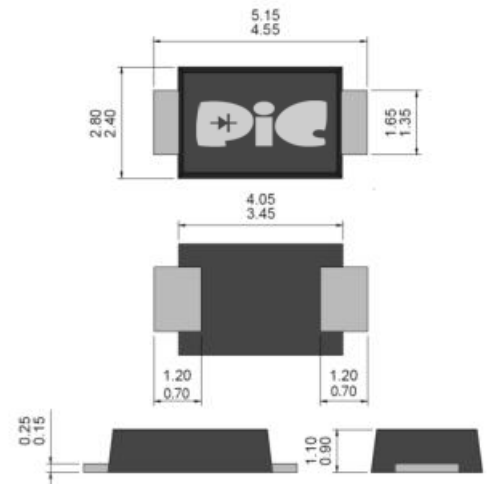


Features

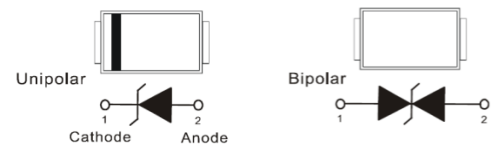
- Glass passivated chip
- 400W peak pulse power capability with a 10/1000 μ s waveform, Repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

SMA-F



Mechanical Data

- Epoxy: UL 94V-0 rate flame retardant
- Case: Epoxy, Molded
- Terminals: Solder plated solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end



Maximum Ratings & Electrical Characteristic (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	UNITS
Peak Power Dissipation with a 10/1000 μ s waveform (Notes 1)	P _{PP}	400	Watts
Peak Forward Surge Current , 8.3 ms single half sine-wave unidirectional only (Notes 2)	I _{FSM}	40	Amps
Peak Pulse Current with a 10/1000 μ s waveform (Notes 1)	I _{PP}	See Next Table	Amps
Power dissipation on infinite heatsink at T _L =75°C	P _D	1.0	Watts
Max. instantaneous forward voltage at 25 A for unidirectional only (Notes 3)	V _F	3.5/5.0	Volts
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55~+150	°C

Notes :

- (1) Non-repetitive current pulse, per Fig.5 and derated above T_A = 25°C per Fig.1.
- (2) Measured on 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
- (3) V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>210V

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

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000µs	Peak Pulse Current 10/1000µs
					V _{RWM}	V _{BR} @ I _T		I _R @ V _{RWM}			
				UNI		BI	UNI	BI	Min.	Max.	I _T
SMAFJ5.0A	SMAFJ5.0CA	AE	WE	5	6.4	7	10	800	1600	9.2	43.48
SMAFJ6.0A	SMAFJ6.0CA	AG	WG	6	6.67	7.37	10	800	1600	10.3	38.83
SMAFJ6.5A	SMAFJ6.5CA	AK	WK	6.5	7.22	7.98	10	500	1000	11.2	35.71
SMAFJ7.0A	SMAFJ7.0CA	AM	WM	7	7.78	8.6	10	200	400	12	33.33
SMAFJ7.5A	SMAFJ7.5CA	AP	WP	7.5	8.33	9.21	1	100	200	12.9	31.01
SMAFJ8.0A	SMAFJ8.0CA	AR	WR	8	8.89	9.83	1	50	100	13.6	29.41
SMAFJ8.5A	SMAFJ8.5CA	AT	WT	8.5	9.44	10.4	1	10	20	14.4	27.78
SMAFJ9.0A	SMAFJ9.0CA	AV	WV	9	10	11.1	1	5	5	15.4	25.97
SMAFJ10A	SMAFJ10CA	AX	WX	10	11.1	12.3	1	5	5	17	23.53
SMAFJ11A	SMAFJ11CA	AZ	WZ	11	12.2	13.5	1	1	1	18.2	21.98
SMAFJ12A	SMAFJ12CA	BE	XE	12	13.3	14.7	1	1	1	19.9	20.1
SMAFJ13A	SMAFJ13CA	BG	XG	13	14.4	15.9	1	1	1	21.5	18.6
SMAFJ14A	SMAFJ14CA	BK	XK	14	15.6	17.2	1	1	1	23.2	17.24
SMAFJ15A	SMAFJ15CA	BM	XM	15	16.7	18.5	1	1	1	24.4	16.39
SMAFJ16A	SMAFJ16CA	BP	XP	16	17.8	19.7	1	1	1	26	15.38
SMAFJ17A	SMAFJ17CA	BR	XR	17	18.9	20.9	1	1	1	27.6	14.49
SMAFJ18A	SMAFJ18CA	BT	XT	18	20	22.1	1	1	1	29.2	13.7
SMAFJ19A	SMAFJ19CA	BB	XB	19	21.1	23.3	1	1	1	30.8	13
SMAFJ20A	SMAFJ20CA	BV	XV	20	22.2	24.5	1	1	1	32.4	12.35
SMAFJ22A	SMAFJ22CA	BX	XX	22	24.4	26.9	1	1	1	35.5	11.27
SMAFJ24A	SMAFJ24CA	BZ	XZ	24	26.7	29.5	1	1	1	38.9	10.28
SMAFJ26A	SMAFJ26CA	CE	YE	26	28.9	31.9	1	1	1	42.1	9.5
SMAFJ28A	SMAFJ28CA	CG	YG	28	31.1	34.4	1	1	1	45.4	8.81
SMAFJ30A	SMAFJ30CA	CK	YK	30	33.3	36.8	1	1	1	48.4	8.26
SMAFJ33A	SMAFJ33CA	CM	YM	33	36.7	40.6	1	1	1	53.3	7.5
SMAFJ36A	SMAFJ36CA	CP	YP	36	40	44.2	1	1	1	58.1	6.88
SMAFJ40A	SMAFJ40CA	CR	YR	40	44.4	49.1	1	1	1	64.5	6.2
SMAFJ43A	SMAFJ43CA	CT	YT	43	47.8	52.8	1	1	1	69.4	5.76
SMAFJ45A	SMAFJ45CA	CV	YV	45	50	55.3	1	1	1	72.7	5.5

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000 μs	Peak Pulse Current 10/1000 μs
					V_{RWM}	$V_{\text{BR}} @ I_{\text{T}}$		I_{r}	$I_{\text{r}} @ V_{\text{RWM}}$		
				Min.		Max.	UNI		BI	$V_{\text{C}} @ I_{\text{PP}}$	I_{PP}
UNI	BI	UNI	BI	V	V	V	mA	μA	μA	V	A
SMAFJ48A	SMAFJ48CA	CX	YX	48	53.3	58.9	1	1	1	77.4	5.17
SMAFJ51A	SMAFJ51CA	CZ	YZ	51	56.7	62.7	1	1	1	82.4	4.85
SMAFJ54A	SMAFJ54CA	RE	ZE	54	60	66.3	1	1	1	87.1	4.59
SMAFJ58A	SMAFJ58CA	RG	ZG	58	64.4	71.2	1	1	1	93.6	4.27
SMAFJ60A	SMAFJ60CA	RK	ZK	60	66.7	73.7	1	1	1	96.8	4.13
SMAFJ64A	SMAFJ64CA	RM	ZM	64	71.1	78.6	1	1	1	103	3.88
SMAFJ70A	SMAFJ70CA	RP	ZP	70	77.8	86	1	1	1	113	3.54
SMAFJ75A	SMAFJ75CA	RR	ZR	75	83.3	92.1	1	1	1	121	3.31
SMAFJ78A	SMAFJ78CA	RT	ZT	78	86.7	95.8	1	1	1	126	3.17
SMAFJ80A	SMAFJ80CA	RB	ZB	80	88.8	97.6	1	1	1	129.6	3.09
SMAFJ85A	SMAFJ85CA	RV	ZV	85	94.4	104	1	1	1	137	2.92
SMAFJ90A	SMAFJ90CA	RX	ZX	90	100	111	1	1	1	146	2.74
SMAFJ100A	SMAFJ100CA	RZ	ZZ	100	111	123	1	1	1	162	2.47
SMAFJ110A	SMAFJ110CA	SE	VE	110	122	135	1	1	1	177	2.26
SMAFJ120A	SMAFJ120CA	SG	VG	120	133	147	1	1	1	193	2.07
SMAFJ130A	SMAFJ130CA	SK	VK	130	144	159	1	1	1	209	1.91
SMAFJ140A	SMAFJ140CA	SB	VB	140	155	171	1	1	1	226.8	1.76
SMAFJ150A	SMAFJ150CA	SM	VM	150	167	185	1	1	1	243	1.65
SMAFJ160A	SMAFJ160CA	SP	VP	160	178	197	1	1	1	259	1.54
SMAFJ170A	SMAFJ170CA	SR	VR	170	189	209	1	1	1	275	1.45
SMAFJ180A	SMAFJ180CA	ST	VT	180	200	220	1	1	1	291.6	1.37
SMAFJ190A	SMAFJ190CA	SV	VV	190	211	232	1	1	1	307.8	1.3
SMAFJ200A	SMAFJ200CA	SW	VW	200	224	247	1	1	1	324	1.23
SMAFJ220A	SMAFJ220CA	SX	VX	220	246	272	1	1	1	356	1.12
SMAFJ250A	SMAFJ250CA	SZ	VZ	250	279	309	1	1	1	405	0.99
SMAFJ300A	SMAFJ300CA	DE	HE	300	335	371	1	1	1	486	0.82
SMAFJ350A	SMAFJ350CA	DG	HG	350	391	432	1	1	1	567	0.71
SMAFJ400A	SMAFJ400CA	DK	HK	400	447	494	1	1	1	648	0.62
SMAFJ440A	SMAFJ440CA	DM	HM	440	492	543	1	1	1	713	0.56

Rating & Characteristic Curves

Fig. 1 Pulse Derating Curve

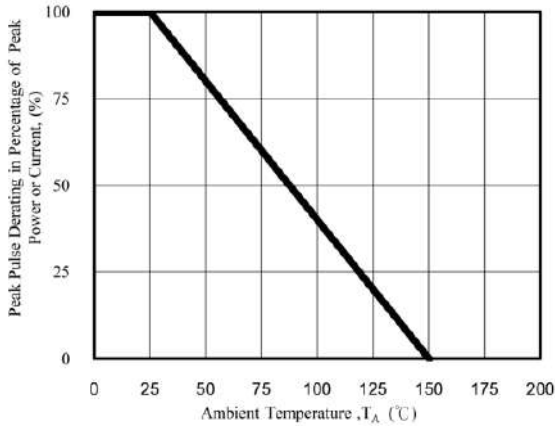


Fig. 2 Max. Non-Repetitive Surge Current

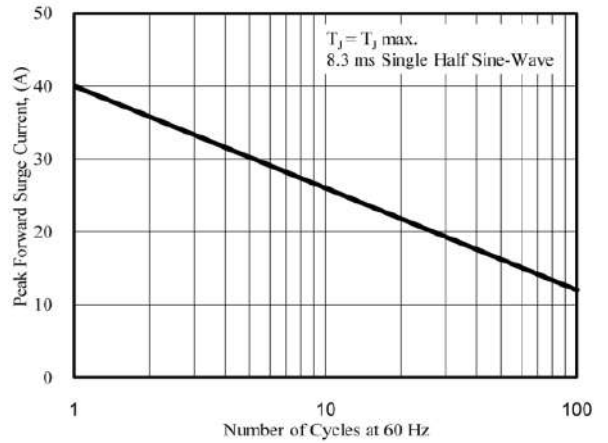


Fig. 3 Steady State Power Derating Curve

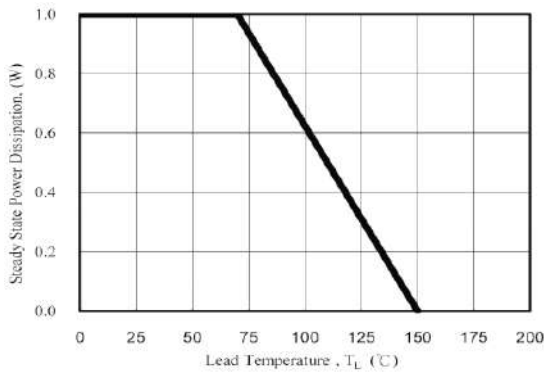


Fig. 4 Peak Pulse Power Rating Curve

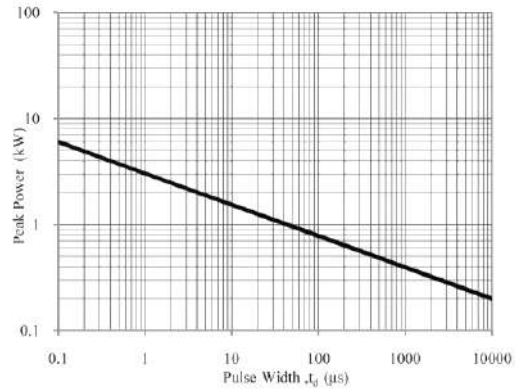


Fig. 5 Pulse Waveform

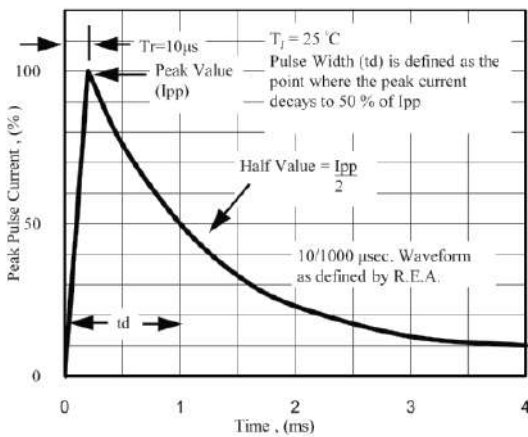
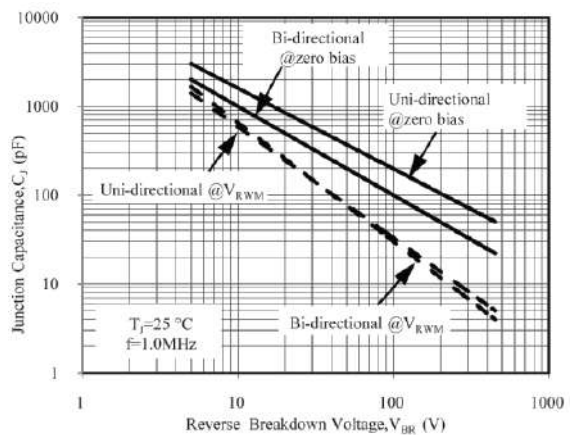
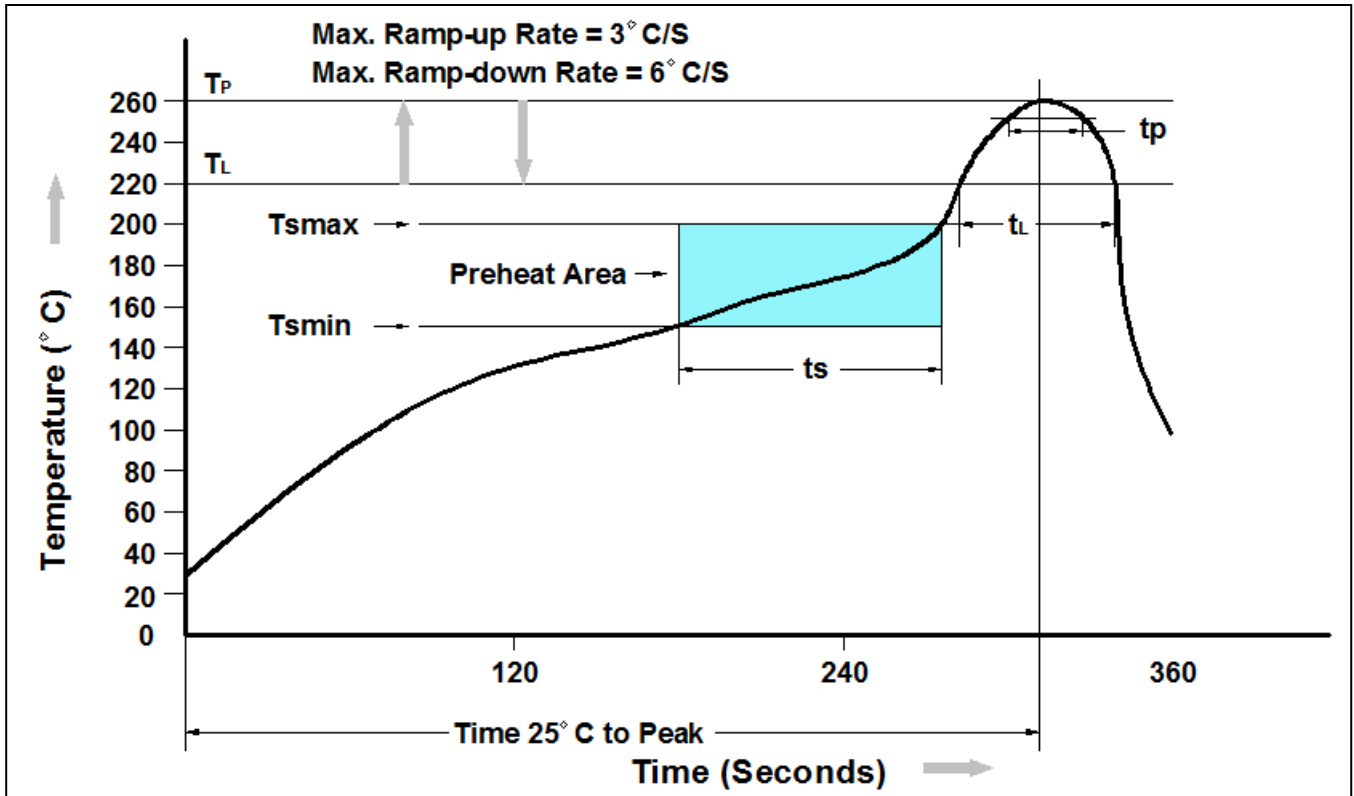


Fig. 6 Typical Junction Capacitance

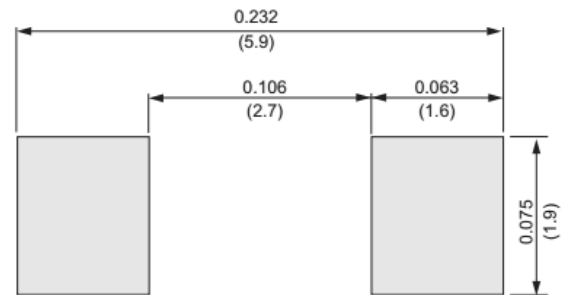


Recommend IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

Suggested Pad Layout



Unit: inch (mm)

Ordering Information

Part Number	Description	Quantity
SMAFJ5.0A ~ SMAFJ440CA	SMA-F Reel	3000 pcs

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