

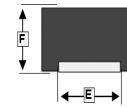
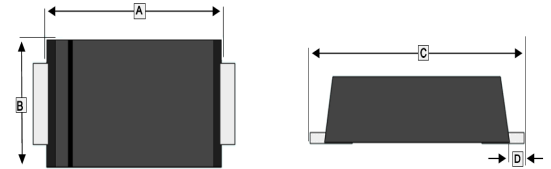
RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- Glass passivated junction
- Solder dip 260°C, 10s
- Moisture sensitivity: level 1, per J-STD-020
- Low profile, typical thickness 1mm
- Excellent clamping capability and Fast response time
- 400W peak pulse power capability with a 10/1000µs waveform
- Polarity: Uni-directional

SMAF



PACKAGE INFORMATION

Package	MPQ	Leader Size
SMAF	10K	13 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.1	4.3	D	0.70	1.10
B	2.60	2.80	E	1.25	1.45
C	4.80	5.20	F	0.90	1.08

ORDER INFORMATION

Part Number	Type
SMAF4J10A~SMAF4J190A	Lead (Pb)-free
SMAF4J10A-C~SMAF4J190A-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25 °C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Power Dissipation with a 10/1000µs waveform ¹ @T _A =25°C	P _{PP}	400	W
Peak Pulse Current with a 10/1000µs waveform ¹	I _{PP}	See next table	A
Power Dissipation ²	P _D	1	W
Steady state			
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave uni-directional only	I _{FSM}	40	A
Maximum Instantaneous Forward Clamping Voltage at 25A	V _F	2	V
Thermal Resistance Junction to Ambient air ³	R _{θJA}	75	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 ~ 150	°C

Notes:

1. Non-repetitive current pulse per Fig.3 and derated above T_A=25°C per Fig.4.
2. Power dissipation mounted on recommended pad layout.
3. Thermal resistance from junction to ambient, mounted on PCB with 8.0×8.0mm copper pads.

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Part Number	Marking Code	Reverse Stand-off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Maximum Reverse Leakage I_R @ V_R	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}
		V_{RWM}	Min.	Max.	I_T	I_R	I_{PP}	V_C
Uni	Uni	V	V		mA	μA	A	V
SMAF4J10A	L410A	10	11.1	12.3	1	2.5	23.5	17
SMAF4J11A	L411A	11	12.2	13.5	1	2.5	22	18.2
SMAF4J12A	L412A	12	13.3	14.7	1	2.5	20.1	19.9
SMAF4J13A	L413A	13	14.4	15.9	1	1	18.6	21.5
SMAF4J14A	L414A	14	15.6	17.2	1	1	17.2	23.2
SMAF4J15A	L415A	15	16.7	18.5	1	1	16.4	24.4
SMAF4J16A	L416A	16	17.8	19.7	1	1	15.4	26
SMAF4J17A	L417A	17	18.9	20.9	1	1	14.5	27.6
SMAF4J18A	L418A	18	20	22.1	1	1	13.7	29.2
SMAF4J20A	L420A	20	22.2	24.5	1	1	12.3	32.4
SMAF4J22A	L422A	22	24.4	26.9	1	1	11.3	35.5
SMAF4J24A	L424A	24	26.7	29.5	1	1	10.3	38.9
SMAF4J26A	L426A	26	28.9	31.9	1	1	9.5	42.1
SMAF4J28A	L428A	28	31.1	34.4	1	1	8.8	45.4
SMAF4J30A	L430A	30	33.3	36.8	1	1	8.3	48.4
SMAF4J33A	L433A	33	36.7	40.6	1	1	7.5	53.3
SMAF4J36A	L436A	36	40	44.2	1	1	6.9	58.1
SMAF4J40A	L440A	40	44.4	49.1	1	1	6.2	64.5
SMAF4J43A	L443A	43	47.8	52.8	1	1	5.8	69.4
SMAF4J45A	L445A	45	50	55.3	1	1	5.5	72.7
SMAF4J48A	L448A	48	53.3	58.9	1	1	5.2	77.4
SMAF4J51A	L451A	51	56.7	62.7	1	1	4.9	82.4
SMAF4J54A	L454A	54	60	66.3	1	1	4.6	87.1
SMAF4J58A	L458A	58	64.4	71.2	1	1	4.3	93.6
SMAF4J60A	L460A	60	66.7	73.7	1	1	4.1	96.8
SMAF4J64A	L464A	64	71.1	78.6	1	1	3.9	103
SMAF4J70A	L470A	70	77.8	86	1	1	3.5	114
SMAF4J75A	L475A	75	83.3	92.1	1	1	3.3	121
SMAF4J78A	L478A	78	86.7	95.8	1	1	3.2	126
SMAF4J80A	L480A	80	88.8	97.6	1	1	3.1	129
SMAF4J85A	L485A	85	94.4	104	1	1	2.9	138

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Part Number	Marking Code	Reverse Stand-off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Maximum Reverse Leakage I_R @ V_R	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}
		V_{RWM}	Min	Max	I_T	I_R	I_{PP}	V_C
Uni	Uni	V	V	V	mA	μA	A	V
SMAF4J90A	L490A	90	100	111	1	1	2.7	148
SMAF4J100A	L4100A	100	111	123	1	1	2.5	160
SMAF4J110A	L4110A	110	122	135	1	1	2.2	182
SMAF4J120A	L4120A	120	133	147	1	1	2.1	191
SMAF4J130A	L4130A	130	144	159	1	1	1.9	211
SMAF4J140A	L4140A	140	155	171	1	1	1.8	223
SMAF4J150A	L4150A	150	167	185	1	1	1.6	250
SMAF4J160A	L4160A	160	178	197	1	1	1.5	267
SMAF4J170A	L4170A	170	189	209	1	1	1.4	286
SMAF4J180A	L4180A	180	201	222	1	1	1.4	286
SMAF4J190A	L4190A	190	211	232	1	1	1.2	334

CHARACTERISTICS CURVE

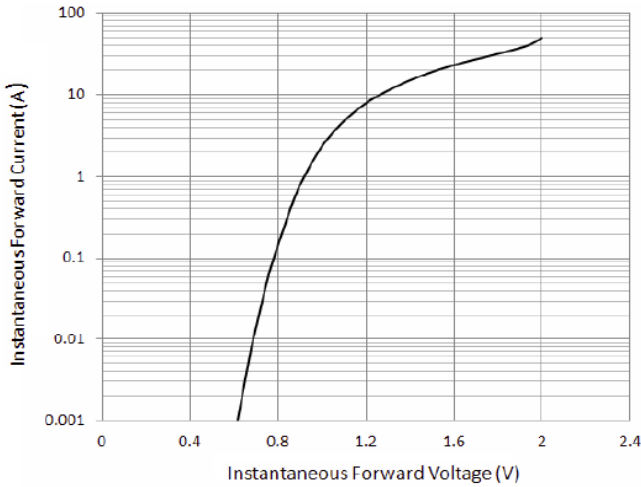


Figure 1.
Typical Instantaneous Forward Characteristics

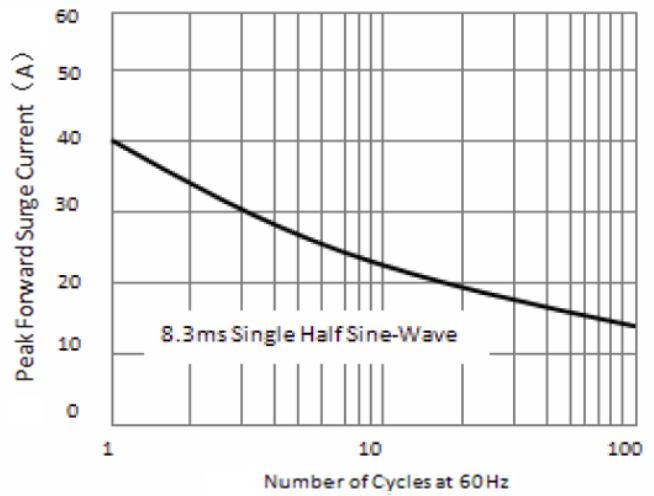


Figure 2.
Maximum Non-Repetitive Peak Forward Surge Current

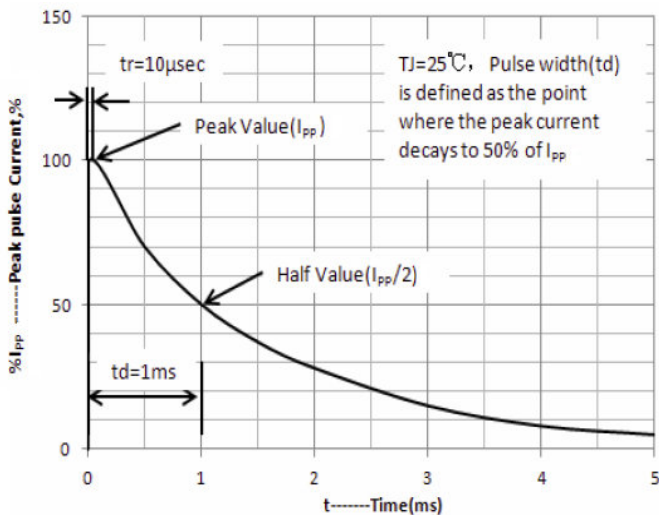


Figure 3. Pulse Waveform

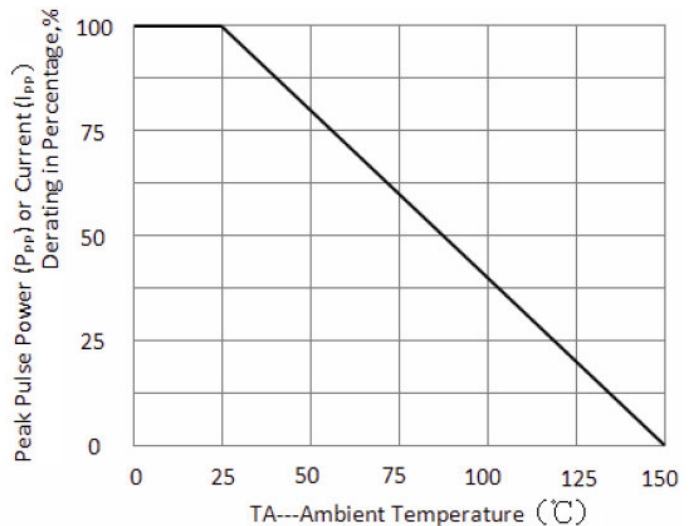


Figure 4. Peak Pulse Power Derating Curve

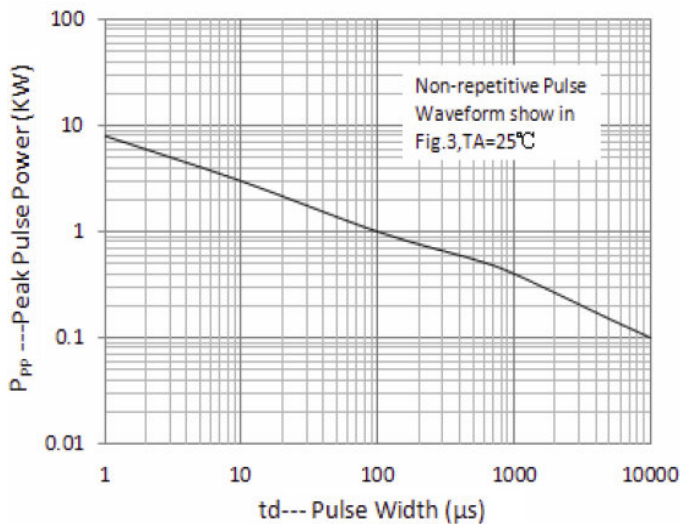


Figure 5. Peak Pulse Power Derating Curve