Elektronische Bauelemente

SMAF6J10A~SMAF6J180A

Voltage 10V~180V

600W Peak Power Surface Mount TVS

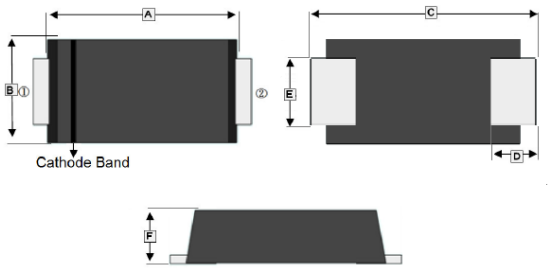
RoHS Compliant Product

A suffix of “-C” specifies halogen-free and lead-free

FEATURES

- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Low profile package with built-in strain relief for surface mounted applications
- Excellent clamping capability
- Very fast response time
- 600W peak pulse power capability with a 10/1000μs waveform
- Polarity: Uni-directional

SMAF



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

PACKAGE INFORMATION

Package	MPQ	Leader Size
SMAF	10K	13 inch

ORDER INFORMATION

Part Number	Type
SMAF6J10A~SMAF6J180A	Lead (Pb)-free
SMAF6J10A-C~SMAF6J180A-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 [1,2] @ T_A=25°C	P_{PP}	600	W
Peak Pulse Current with a 10/1000μs waveform [1]	I_{PP}	See next table	A
Peak Forward Surge Current, 8.3ms single Half Sine-Wave [3]	I_{FSM}	80	A
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	100	°C/W
Thermal Resistance Junction-Lead	$R_{\theta JL}$	20	°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 de-rated above T_A=25°C per Fig.2.
2. Mounted on copper pad area of 0.2×0.2” (5.0×5.0mm) to each terminal.
3. Measured on 8.3ms single half sine-wave or equivalent square wave, for unidirectional device only Fig.4.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Part Number	Marking Code	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Reverse Leakage I_R @V_R	Reverse Stand-off Voltage	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @I_{PP}
		Min.	Max.	I_T	I_R	V_{RWM}	I_{PP}	V_C
Uni	Uni	V		mA	μA	V	A	V
SMAF6J10A	L610A	11.1	12.3	1	5	10	35.3	17
SMAF6J11A	L611A	12.2	13.5	1	5	11	33	18.2
SMAF6J12A	L612A	13.3	14.7	1	5	12	30.2	19.9
SMAF6J13A	L613A	14.4	15.9	1	1	13	27.9	21.5
SMAF6J14A	L614A	15.6	17.2	1	1	14	25.9	23.2
SMAF6J15A	L615A	16.7	18.5	1	1	15	24.6	24.4
SMAF6J16A	L616A	17.8	19.7	1	1	16	23.1	26
SMAF6J17A	L617A	18.9	20.9	1	1	17	21.7	27.6
SMAF6J18A	L618A	20	22.1	1	1	18	20.5	29.2
SMAF6J20A	L620A	22.2	24.5	1	1	20	18.5	32.4
SMAF6J22A	L622A	24.4	26.9	1	1	22	16.9	35.5
SMAF6J24A	L624A	26.7	29.5	1	1	24	15.4	38.9
SMAF6J26A	L626A	28.9	31.9	1	1	26	14.3	42.1
SMAF6J28A	L628A	31.1	34.4	1	1	28	13.2	45.4
SMAF6J30A	L630A	33.3	36.8	1	1	30	12.4	48.4
SMAF6J33A	L633A	36.7	40.6	1	1	33	11.3	53.3
SMAF6J36A	L636A	40	44.4	1	1	36	10.3	58.1
SMAF6J40A	L640A	44.4	49.1	1	1	40	9.3	64.5
SMAF6J43A	L643A	47.8	52.8	1	1	43	8.6	69.4
SMAF6J45A	L645A	50	55.3	1	1	45	8.3	72.7
SMAF6J48A	L648A	53.3	58.9	1	1	48	7.8	77.4
SMAF6J51A	L651A	56.7	62.7	1	1	51	7.3	82.4
SMAF6J54A	L654A	60	66.3	1	1	54	6.9	87.1
SMAF6J58A	L658A	64.4	71.2	1	1	58	6.4	93
SMAF6J60A	L660A	66.7	73.7	1	1	60	6.2	96
SMAF6J64A	L664A	71.1	78.6	1	1	64	5.8	103
SMAF6J70A	L670A	77.8	96	1	1	70	5.3	113
SMAF6J75A	L675A	83.3	92.1	1	1	75	5	121
SMAF6J78A	L678A	86.7	95.8	1	1	78	4.8	126
SMAF6J85A	L685A	94.4	104	1	1	85	4.4	137
SMAF6J90A	L690A	100	111	1	1	90	4.1	146

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Part Number	Marking Code	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Reverse Leakage I_R @V_R	Reverse Stand-off Voltage	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @I_{PP}
		Min.	Max.	I_T	I_R	V_{RWM}	I_{PP}	V_C
Uni	Uni	V		mA	μA	V	A	V
SMAF6J100A	L6100A	111	123	1	1	100	3.7	162
SMAF6J110A	L6110A	122	135	1	1	110	3.4	177
SMAF6J120A	L6120A	133	147	1	1	120	3.1	193
SMAF6J130A	L6130A	144	159	1	1	130	2.9	209
SMAF6J150A	L6150A	167	185	1	1	150	2.5	243
SMAF6J160A	L6160A	178	197	1	1	160	2.3	259
SMAF6J170A	L6170A	189	209	1	1	170	2.2	275
SMAF6J180A	L6180A	209	222	1	1	180	2.1	292

CHARACTERISTICS CURVE

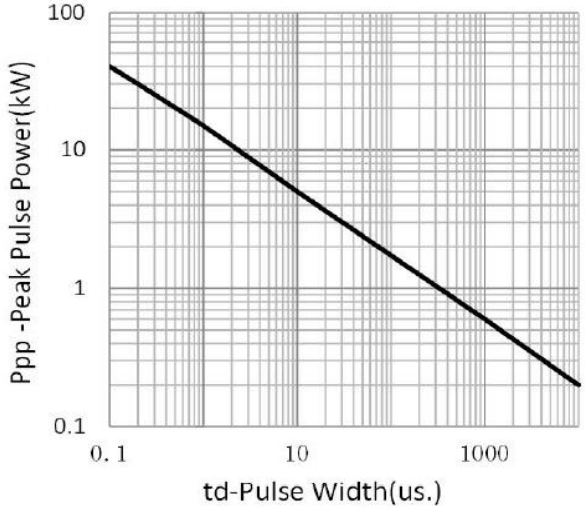


Figure 1. Peak Pulse Power Derating Curve

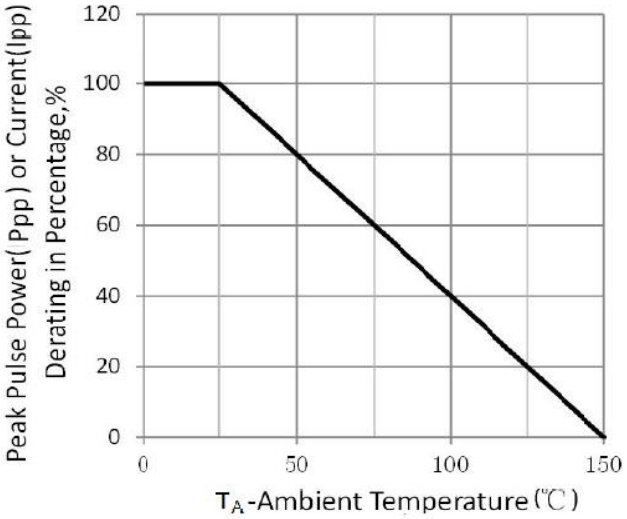


Figure 2. Pulse Power vs ambient temperature

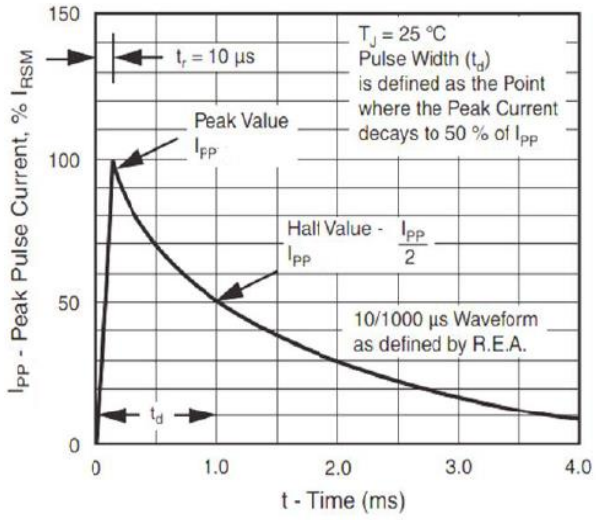


Figure 3. Pulse Waveform

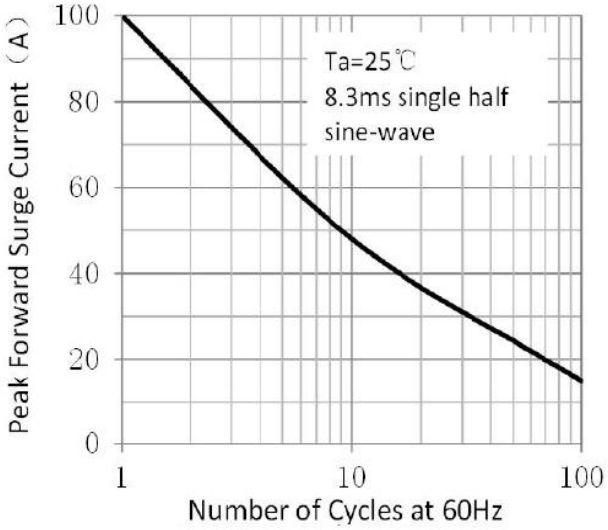


Figure 4.Maximum Non-Repetitive Peak Forward Surge Current

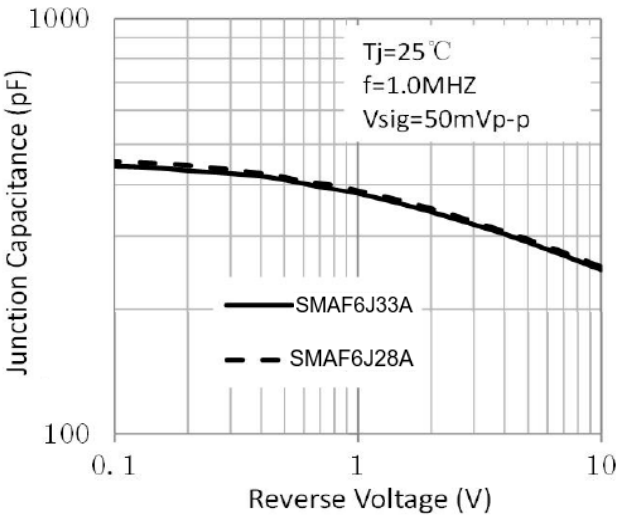
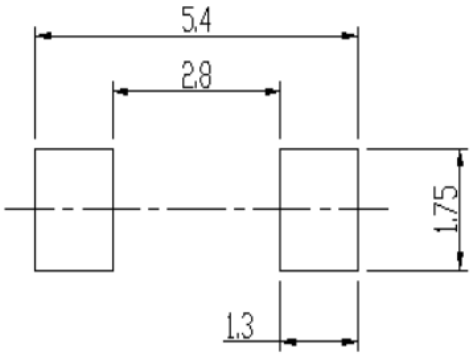


Figure 5. Typical Junction Capacitance



*Dimensions in millimeters

Figure 6. Mounting Pad Layout