

## Surface Mount Transient Voltage Suppressor Rectifiers

Reverse Voltage 5.0 ~ 350 V

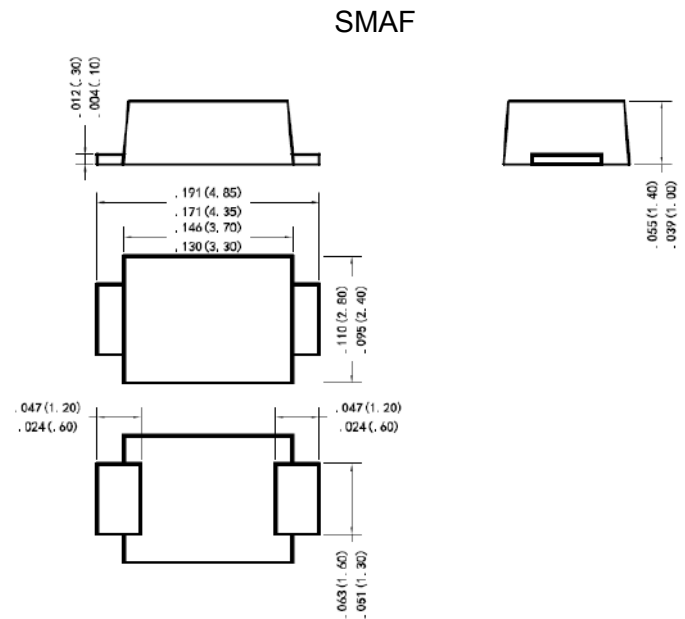
600 Watt Peak Pulse Power

### Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

### Mechanical Data

- Case: SMAF Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any
- System: Accreditation through IATF16949 System
- High reliability grade (AEC Q101 qualified)



Unit: inch (mm)

Maximum Ratings & Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform <sup>(1)</sup>	$P_{PP}$	600	W
Peak pulse current with a 10/1000 us waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	$P_D$	5.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only <sup>(2)</sup>	$I_{FSM}$	60	A
Maximum instantaneous forward voltage at 25 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/6.5	V
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	°C

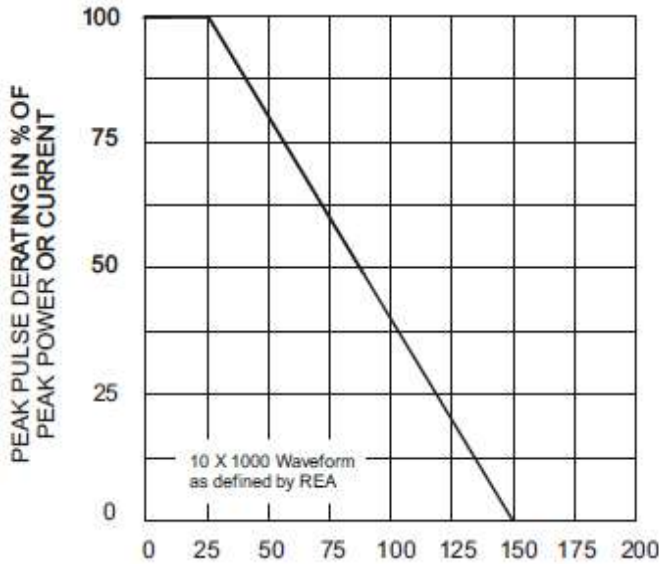
Note:

- 1) Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25\text{ °C}$  per Fig.1 ;
- 2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;
- 3)  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 6.5\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

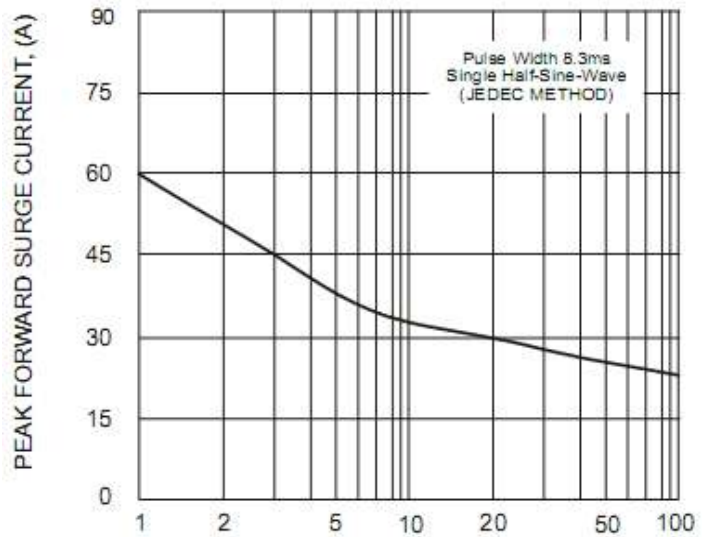


Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage $V_{BR} @ I_T$		Test Current	Max. Clamping Voltage @ $I_{PP}$	Max. Peak Pulse Current	Max. Reverse Leakage @ $V_{RWM}$
UNI-POLAR	BI-POLAR	UNI	BI	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$V_{C MAX.}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
TSMAF6J5.0A	TSMAF6J5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	65.3	800
TSMAF6J6.0A	TSMAF6J6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	58.3	800
TSMAF6J6.5A	TSMAF6J6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	500
TSMAF6J7.0A	TSMAF6J7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	50.0	200
TSMAF6J7.5A	TSMAF6J7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100
TSMAF6J8.0A	TSMAF6J8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	44.2	50
TSMAF6J8.5A	TSMAF6J8.5CA	KT	AT	8.5	9.44	10.40	1	14.4	41.7	20
TSMAF6J9.0A	TSMAF6J9.0CA	KV	AV	9.0	10.00	11.10	1	15.4	39.0	10
TSMAF6J10A	TSMAF6J10CA	KX	AX	10.0	11.10	12.30	1	17.0	35.3	5
TSMAF6J11A	TSMAF6J11CA	KZ	AZ	11.0	12.20	13.50	1	18.2	33.0	1
TSMAF6J12A	TSMAF6J12CA	LE	BE	12.0	13.30	14.70	1	19.9	30.2	1
TSMAF6J13A	TSMAF6J13CA	LG	BG	13.0	14.40	15.90	1	21.5	28.0	1
TSMAF6J14A	TSMAF6J14CA	LK	BK	14.0	15.60	17.20	1	23.2	25.9	1
TSMAF6J15A	TSMAF6J15CA	LM	BM	15.0	16.70	18.50	1	24.4	24.6	1
TSMAF6J16A	TSMAF6J16CA	LP	BP	16.0	17.80	19.70	1	26.0	23.1	1
TSMAF6J17A	TSMAF6J17CA	LR	BR	17.0	18.90	20.90	1	27.6	21.8	1
TSMAF6J18A	TSMAF6J18CA	LT	BT	18.0	20.00	22.10	1	29.2	20.6	1
TSMAF6J20A	TSMAF6J20CA	LV	BV	20.0	22.20	24.50	1	32.4	18.6	1
TSMAF6J22A	TSMAF6J22CA	LX	BX	22.0	24.40	26.90	1	35.5	16.9	1
TSMAF6J24A	TSMAF6J24CA	LZ	BZ	24.0	26.70	29.50	1	38.9	15.5	1
TSMAF6J26A	TSMAF6J26CA	ME	CE	26.0	28.90	31.90	1	42.1	14.3	1
TSMAF6J28A	TSMAF6J28CA	MG	CG	28.0	31.10	34.40	1	45.4	13.3	1
TSMAF6J30A	TSMAF6J30CA	MK	CK	30.0	33.50	36.80	1	48.4	12.4	1
TSMAF6J33A	TSMAF6J33CA	MM	CM	33.0	36.70	40.60	1	53.3	11.3	1
TSMAF6J36A	TSMAF6J36CA	MP	CP	36.0	40.00	44.20	1	58.1	10.4	1
TSMAF6J40A	TSMAF6J40CA	MR	CR	40.0	44.40	49.10	1	64.5	9.3	1
TSMAF6J43A	TSMAF6J43CA	MT	CT	43.0	47.80	52.80	1	69.4	8.7	1
TSMAF6J45A	TSMAF6J45CA	MV	CV	45.0	50.00	55.30	1	72.7	8.3	1
TSMAF6J48A	TSMAF6J48CA	MX	CX	48.0	53.30	58.90	1	77.4	7.8	1
TSMAF6J51A	TSMAF6J51CA	MZ	CZ	51.0	56.70	62.70	1	82.4	7.3	1
TSMAF6J54A	TSMAF6J54CA	NE	DE	54.0	60.00	66.30	1	87.1	6.9	1
TSMAF6J58A	TSMAF6J58CA	NG	DG	58.0	64.40	71.20	1	93.6	6.5	1
TSMAF6J60A	TSMAF6J60CA	NK	DK	60.0	66.70	73.70	1	96.8	6.2	1
TSMAF6J64A	TSMAF6J64CA	NM	DM	64.0	71.10	78.60	1	103.0	5.9	1
TSMAF6J70A	TSMAF6J70CA	NP	DP	70.0	77.80	86.00	1	113.0	5.3	1
TSMAF6J75A	TSMAF6J75CA	NR	DR	75.0	83.30	92.10	1	121.0	5.0	1
TSMAF6J78A	TSMAF6J78CA	NT	DT	78.0	86.70	95.80	1	126.0	4.8	1
TSMAF6J85A	TSMAF6J85CA	NV	DV	85.0	94.4	104.0	1	137.0	4.4	1
TSMAF6J90A	TSMAF6J90CA	NX	DX	90.0	100.0	111.0	1	146.0	4.1	1
TSMAF6J100A	TSMAF6J100CA	NZ	DZ	100.0	111.0	123.0	1	162.0	3.7	1
TSMAF6J110A	TSMAF6J110CA	PE	EE	110.0	122.0	135.0	1	177.0	3.4	1
TSMAF6J120A	TSMAF6J120CA	PG	EG	120.0	133.0	147.0	1	193.0	3.1	1
TSMAF6J130A	TSMAF6J130CA	PK	EK	130.0	144.0	159.0	1	209.0	2.9	1
TSMAF6J150A	TSMAF6J150CA	PM	EM	150.0	167.0	185.0	1	243.0	2.5	1
TSMAF6J160A	TSMAF6J160CA	PP	EP	160.0	178.0	197.0	1	259.0	2.3	1
TSMAF6J170A	TSMAF6J170CA	PR	ER	170.0	189.0	209.0	1	275.0	2.2	1
TSMAF6J180A	TSMAF6J180CA	PT	ET	180.0	201.0	222.0	1	292.0	2.1	1
TSMAF6J190A	TSMAF6J190CA	PA	EC	190.0	209.0	243.0	1	308.0	2.0	1
TSMAF6J200A	TSMAF6J200CA	PV	EV	200.0	224.0	247.0	1	324.0	1.9	1
TSMAF6J210A		PB		210.0	231.0	268.0	1	340.0	1.8	1
TSMAF6J220A		PX		220.0	246.0	272.0	1	356.0	1.7	1
TSMAF6J250A		PZ		250.0	279.0	309.0	1	405.0	1.5	1
TSMAF6J300A		QE		300.0	335.0	371.0	1	486.0	1.3	1
TSMAF6J350A		QG		350.0	391.0	432.0	1	567.0	1.1	1

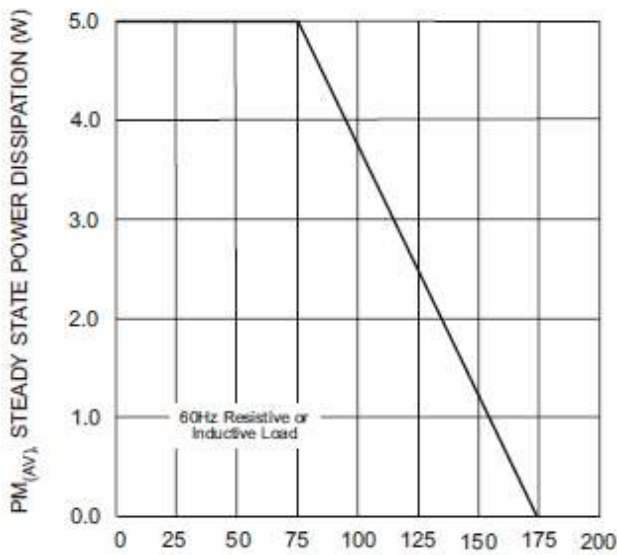
**Ratings and Characteristics Curves (TA=25°C unless otherwise noted)**



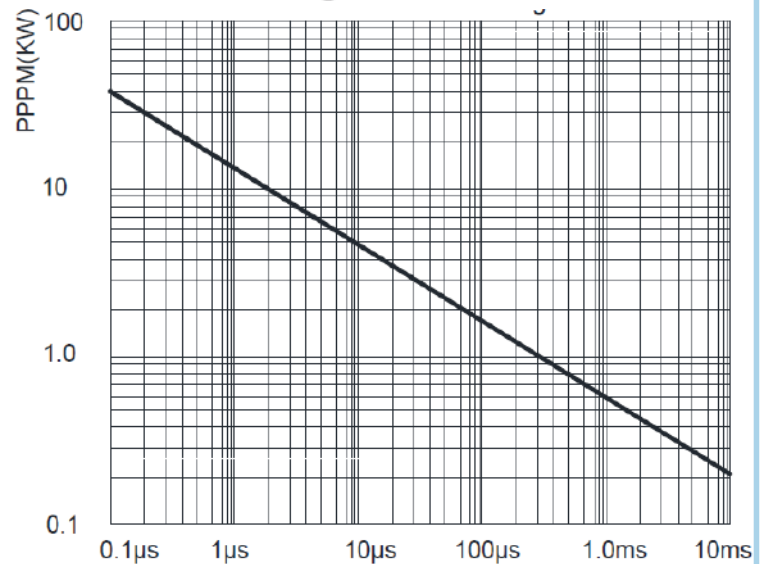
**Fig. 1 - Pulse Derating Curve**



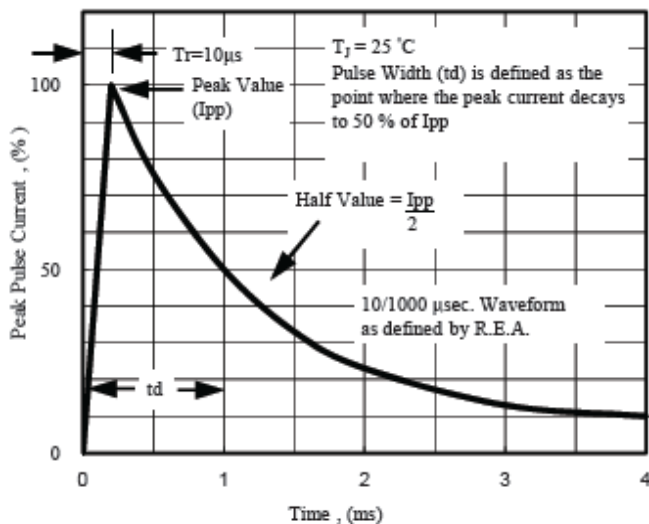
**Fig. 2 - Maximum Non-Repetitive Surge Current**



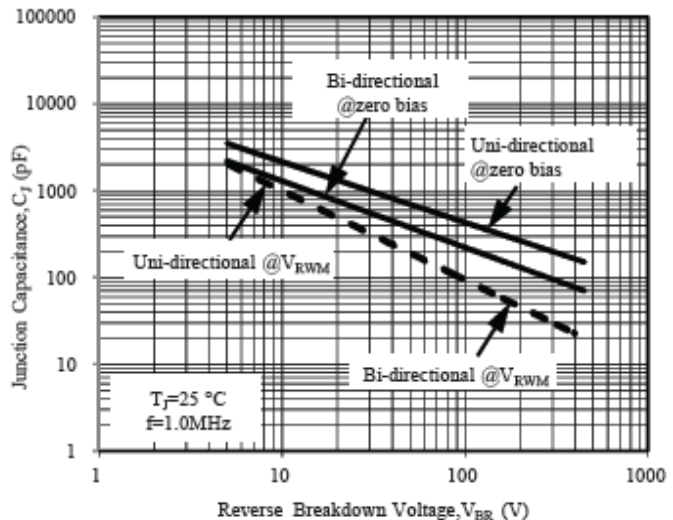
**Fig. 3 - Steady State Power Derating Curve**



**Fig. 4 - Peak Pulse Power Rating Curve**



**Fig. 5 - Pulse Waveform**



**Fig. 6 - Typical Junction Capacitance**