



# THE DATASHEET OF SMA6F12A



**600 Watts Surface Mount Transient Voltage Suppressor**

**FEATURES**

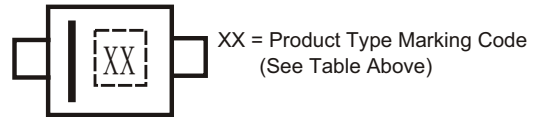
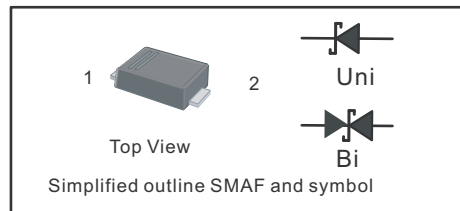
- \* 600W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- \* Low reverse leakage
- \* Low inductance
- \* Low reverse leakage
- \* High peak reverse power dissipation
- \* Low reverse leakage
- \* Case: SMAF molded plastic
- \* Mounting position: Any

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

**PINNING**

PIN	DESCRIPTION
1	Cathode
2	Anode



**MAXIMUM RATINGS** (At TA = 25°C unless otherwise noted)

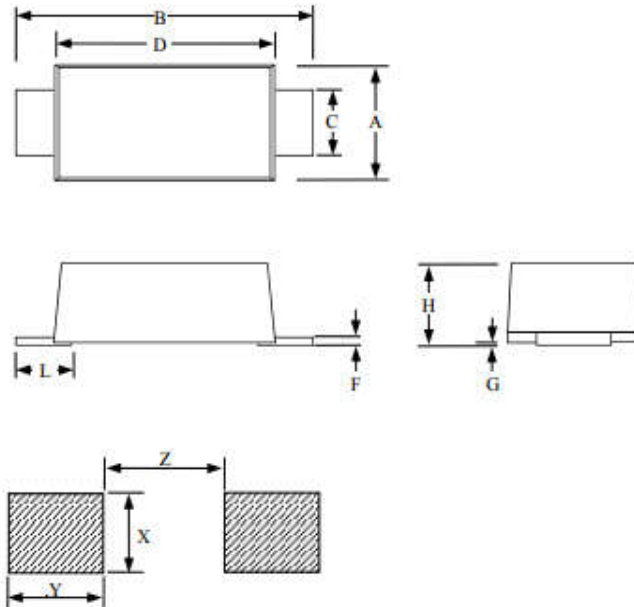
RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation with a 10/1000uS (Note 1)	PPP	600	Watts
Peak Pulse Current with a 10/1000uS waveform	IPPM	See Next Table	Amps
Power Dissipation On Infinite Heatsink at TL(Note 3)	PD	5.0	Watts
Peak Forward Surge Current per Fig.5 (Note 4)	IFSM	100	Amps
Typical Current Squared Time	i <sup>2</sup> t	41.5	A <sup>2</sup> Sec
Operating and Storage Temperature Range	TJ, TSTG	-55 to + 150	°C

- NOTES : 1. Non-repetitive current pulse, and derated above TA = 25°C per Fig.1.  
2. Mounted on 0.2 X 0.2" ( 5.0 X 5.0mm ) copper pad to each terminal.  
3. Lead temperature at TL = 75°C  
4. Measured on 8.3mS single half sine-wave duty cycle = 4 pulses per minute maximum.  
5. Peak pulse power waveform is 10/1000uS.

## 600 Watts Surface Mount Transient Voltage Suppressor

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)	$I_T(mA)$	$V_{C MAX}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
SMA6F5.0A	SMA6F5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	65.3	800
SMA6F6.0A	SMA6F6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	58.3	800
SMA6F6.5A	SMA6F6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	500
SMA6F7.0A	SMA6F7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	50.0	200
SMA6F7.5A	SMA6F7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100
SMA6F8.0A	SMA6F8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	44.2	50
SMA6F8.5A	SMA6F8.5CA	KT	AT	8.5	9.44	10.40	1	14.4	41.7	20
SMA6F9.0A	SMA6F9.0CA	KV	AV	9.0	10.00	11.10	1	15.4	39.0	10
SMA6F10A	SMA6F10CA	KX	AX	10.0	11.10	12.30	1	17.0	35.3	5
SMA6F11A	SMA6F11CA	KZ	AZ	11.0	12.20	13.50	1	18.2	33.0	1
SMA6F12A	SMA6F12CA	LE	BE	12.0	13.30	14.70	1	19.9	30.2	1
SMA6F13A	SMA6F13CA	LG	BG	13.0	14.40	15.90	1	21.5	28.0	1
SMA6F14A	SMA6F14CA	LK	BK	14.0	15.60	17.20	1	23.2	25.9	1
SMA6F15A	SMA6F15CA	LM	BM	15.0	16.70	18.50	1	24.4	24.6	1
SMA6F16A	SMA6F16CA	LP	BP	16.0	17.80	19.70	1	26.0	23.1	1
SMA6F17A	SMA6F17CA	LR	BR	17.0	18.90	20.90	1	27.6	21.8	1
SMA6F18A	SMA6F18CA	LT	BT	18.0	20.00	22.10	1	29.2	20.6	1
SMA6F20A	SMA6F20CA	LV	BV	20.0	22.20	24.50	1	32.4	18.6	1
SMA6F22A	SMA6F22CA	LX	BX	22.0	24.40	26.90	1	35.5	16.9	1
SMA6F24A	SMA6F24CA	LZ	BZ	24.0	26.70	29.50	1	38.9	15.5	1
SMA6F26A	SMA6F26CA	ME	CE	26.0	28.90	31.90	1	42.1	14.3	1
SMA6F28A	SMA6F28CA	MG	CG	28.0	31.10	34.40	1	45.4	13.3	1
SMA6F30A	SMA6F30CA	MK	CK	30.0	33.50	36.80	1	48.4	12.4	1
SMA6F33A	SMA6F33CA	MM	CM	33.0	36.70	40.60	1	53.3	11.3	1
SMA6F36A	SMA6F36CA	MP	CP	36.0	40.00	44.20	1	58.1	10.4	1
SMA6F40A	SMA6F40CA	MR	CR	40.0	44.40	49.10	1	64.5	9.3	1
SMA6F43A	SMA6F43CA	MT	CT	43.0	47.80	52.80	1	69.4	8.7	1
SMA6F45A	SMA6F45CA	MV	CV	45.0	50.00	55.30	1	72.7	8.3	1
SMA6F48A	SMA6F48CA	MX	CX	48.0	53.30	58.90	1	77.4	7.8	1
SMA6F51A	SMA6F51CA	MZ	CZ	51.0	56.70	62.70	1	82.4	7.3	1
SMA6F54A	SMA6F54CA	NE	DE	54.0	60.00	66.30	1	87.1	6.9	1
SMA6F58A	SMA6F58CA	NG	DG	58.0	64.40	71.20	1	93.6	6.5	1
SMA6F60A	SMA6F60CA	NK	DK	60.0	66.70	73.70	1	96.8	6.2	1
SMA6F64A	SMA6F64CA	NM	DM	64.0	71.10	78.60	1	103.0	5.9	1
SMA6F70A	SMA6F70CA	NP	DP	70.0	77.80	86.00	1	113.0	5.3	1
SMA6F75A	SMA6F75CA	NR	DR	75.0	83.30	92.10	1	121.0	5.0	1
SMA6F78A	SMA6F78CA	NT	DT	78.0	86.70	95.80	1	126.0	4.8	1
SMA6F85A	SMA6F85CA	NV	DV	85.0	94.4	104.0	1	137.0	4.4	1
SMA6F90A	SMA6F90CA	NX	DX	90.0	100.0	111.0	1	146.0	4.1	1
SMA6F100A	SMA6F100CA	NZ	DZ	100.0	111.0	123.0	1	162.0	3.7	1
SMA6F110A	SMA6F110CA	PE	EE	110.0	122.0	135.0	1	177.0	3.4	1
SMA6F120A	SMA6F120CA	PG	EG	120.0	133.0	147.0	1	193.0	3.1	1
SMA6F130A	SMA6F130CA	PK	EK	130.0	144.0	159.0	1	209.0	2.9	1
SMA6F150A	SMA6F150CA	PM	EM	150.0	167.0	185.0	1	243.0	2.5	1
SMA6F160A	SMA6F160CA	PP	EP	160.0	178.0	197.0	1	259.0	2.3	1
SMA6F170A	SMA6F170CA	PR	ER	170.0	189.0	209.0	1	275.0	2.2	1

## DIMENSIONS



SMAF						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.094		0.11	2.4		2.8
B	0.173		0.189	4.4		4.8
C	0.051		0.059	1.3		1.5
D	0.128		0.144	3.25		3.65
L	0.028		0.047	0.7		1.2
F	0.006		0.012	0.15		0.3
G	-		0.004	-		0.1
H	0.043		0.055	1.1		1.4
X		0.067			1.7	
Y		0.098			2.5	
Z		0.059			1.5	

## RATING AND CHARACTERISTICS CURVES (SMA6F SERIES)

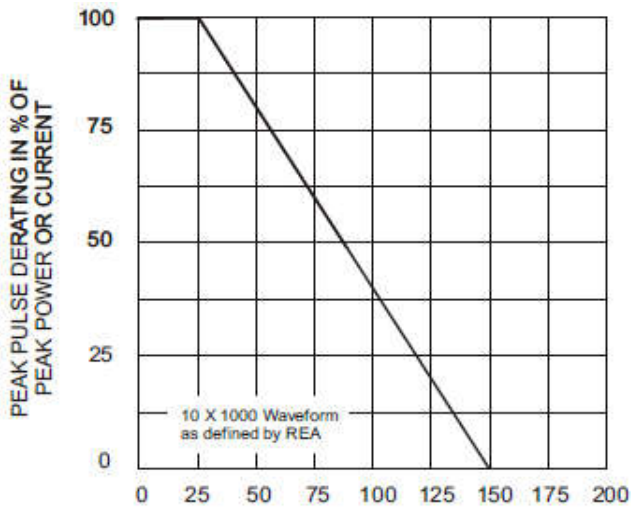


Fig. 1 - Pulse Derating Curve

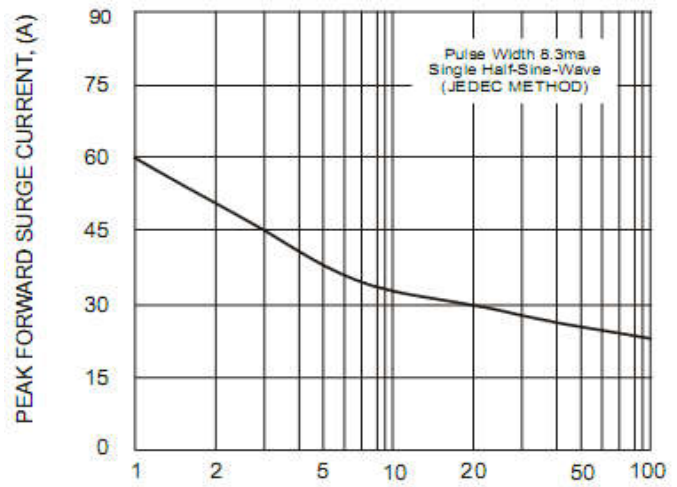


Fig. 2 - Maximum Non-Repetitive Surge Current

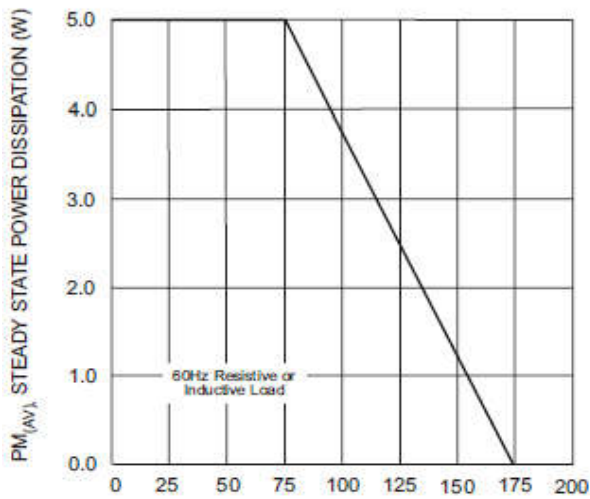


Fig. 3 - Steady State Power Derating Curve

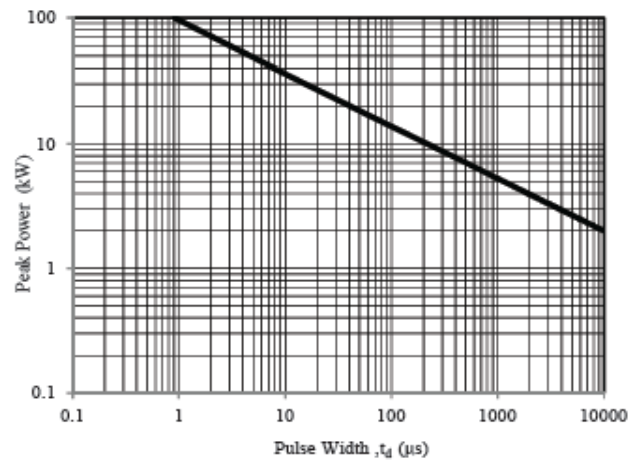


Fig. 4 - Peak Pulse Power Rating Curve

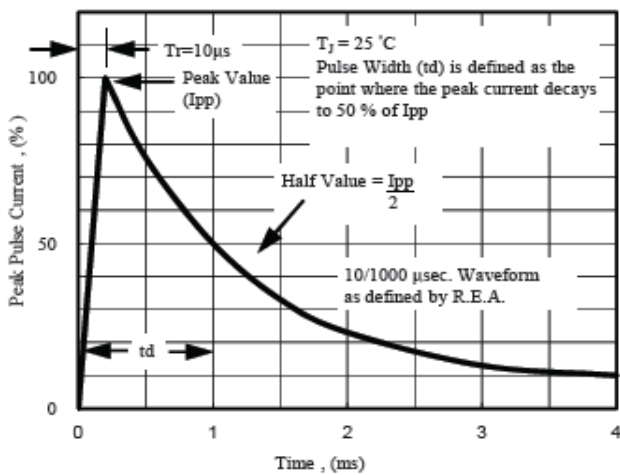


Fig. 5 - Pulse Waveform

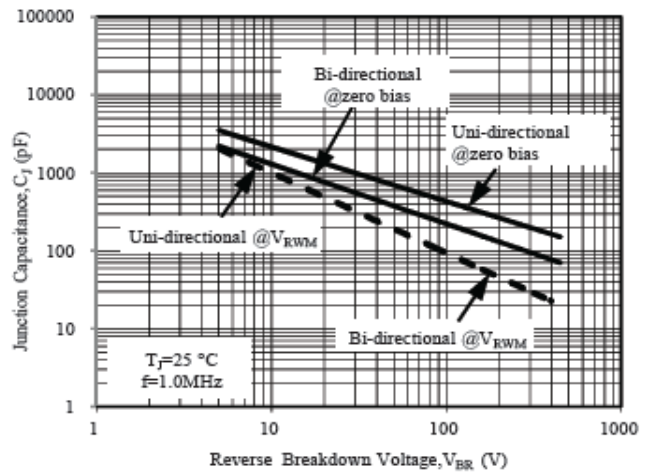


Fig. 6 - Typical Junction Capacitance

## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMAF	-T	3,000	12,000	---	---	178	390*205*310	96,000	---

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