JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

SMAF Plastic-Encapsulate Diodes

S6MAF SERIES Transient Voltage Suppressor Diodes

Features

- P_{PP} 600W
- V_{RWM} 5.0V- 440V
- Glass passivated chip

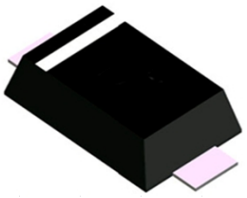
Applications

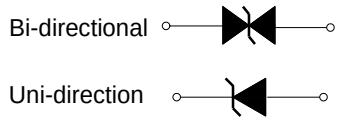
- Clamping Voltage

Marking

- S6MAF
  XXCA/XXA
  XX：From 5.0 To 440

SMAF





Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	600
Peak pulse current (1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at T_L=75℃	5.0
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	100
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V_F	V	at 25A for unidirectional only	3.5/6.5
Thermal resistance	$R_{\theta JL}$	℃/W	junction to lead	17
	$R_{\theta JA}$	℃/W	junction to ambient， L_{Lead} = 10 mm	75

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2.

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal

(3) VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number		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	V_{RWM}(V)	Min.(V)	Max.(V)	I_T(mA)	V_C MAX.(V)	I_{PP}(A)	I_R(uA)
S6MAF5.0A	S6MAF5.0CA	5	6.4	7	10	9.2	65.3	800
S6MAF6.0A	S6MAF6.0CA	6	6.67	7.37	10	10.3	58.3	800
S6MAF6.5A	S6MAF6.5CA	6.5	7.22	7.98	10	11.2	53.6	500
S6MAF7.0A	S6MAF7.0CA	7	7.78	8.6	10	12	50	200
S6MAF7.5A	S6MAF7.5CA	7.5	8.33	9.21	1	12.9	46.6	100
S6MAF8.0A	S6MAF8.0CA	8	8.89	9.83	1	13.6	44.2	50
S6MAF8.5A	S6MAF8.5CA	8.5	9.44	10.4	1	14.4	41.7	20
S6MAF9.0A	S6MAF9.0CA	9	10	11.1	1	15.4	39	10
S6MAF10A	S6MAF10CA	10	11.1	12.3	1	17	35.3	5
S6MAF11A	S6MAF11CA	11	12.2	13.5	1	18.2	33	1
S6MAF12A	S6MAF12CA	12	13.3	14.7	1	19.9	30.2	1
S6MAF13A	S6MAF13CA	13	14.4	15.9	1	21.5	28	1
S6MAF14A	S6MAF14CA	14	15.6	17.2	1	23.2	25.9	1
S6MAF15A	S6MAF15CA	15	16.7	18.5	1	24.4	24.6	1
S6MAF16A	S6MAF16CA	16	17.8	19.7	1	26	23.1	1
S6MAF17A	S6MAF17CA	17	18.9	20.9	1	27.6	21.8	1
S6MAF18A	S6MAF18CA	18	20	22.1	1	29.2	20.6	1
S6MAF20A	S6MAF20CA	20	22	24.5	1	32.4	18.6	1
S6MAF22A	S6MAF22CA	22	24.4	26.9	1	35.5	16.9	1
S6MAF24A	S6MAF24CA	24	26.7	29.5	1	38.9	15.5	1
S6MAF26A	S6MAF26CA	26	28.9	31.9	1	42.1	14.3	1
S6MAF28A	S6MAF28CA	28	31.1	34.4	1	45.4	13.3	1
S6MAF30A	S6MAF30CA	30	33.5	36.8	1	48.4	12.4	1
S6MAF33A	S6MAF33CA	33	36.7	40.6	1	53.3	11.3	1
S6MAF36A	S6MAF36CA	36	40	44.2	1	58.1	10.4	1
S6MAF40A	S6MAF40CA	40	44.4	49.1	1	64.5	9.3	1
S6MAF43A	S6MAF43CA	43	47.8	52.8	1	69.4	8.7	1
S6MAF45A	S6MAF45CA	45	50	55.3	1	72.7	8.3	1
S6MAF48A	S6MAF48CA	48	53.3	58.9	1	77.4	7.8	1
S6MAF51A	S6MAF51CA	51	56.7	62.7	1	82.4	7.3	1
S6MAF54A	S6MAF54CA	54	60	66.3	1	87.1	6.9	1
S6MAF58A	S6MAF58CA	58	64.4	71.2	1	93.6	6.5	1
S6MAF60A	S6MAF60CA	60	66.7	73.7	1	96.8	6.2	1
S6MAF64A	S6MAF64CA	64	71.1	78.6	1	103	5.9	1
S6MAF70A	S6MAF70CA	70	77.8	86	1	113	5.3	1
S6MAF75A	S6MAF75CA	75	83.3	92.1	1	121	5	1
S6MAF78A	S6MAF78CA	78	86.7	95.8	1	126	4.8	1
S6MAF85A	S6MAF85CA	85	94.4	104	1	137	4.4	1
S6MAF90A	S6MAF90CA	90	100	111	1	146	4.1	1
S6MAF100A	S6MAF100CA	100	111	123	1	162	3.7	1
S6MAF110A	S6MAF110CA	110	122	135	1	177	3.4	1
S6MAF120A	S6MAF120CA	120	133	147	1	193	3.1	1
S6MAF130A	S6MAF130CA	130	144	159	1	209	2.9	1
S6MAF150A	S6MAF150CA	150	167	185	1	243	2.5	1
S6MAF160A	S6MAF160CA	160	178	197	1	259	2.3	1
S6MAF170A	S6MAF170CA	170	189	209	1	275	2.2	1

Electrical Characteristics (T_A=25℃ unless otherwise noted)

S6MAF180A	S6MAF180CA	180	201	222	1	292	2.1	1
S6MAF190A	S6MAF190CA	190	209	243	1	308	2	1
S6MAF200A	S6MAF200CA	200	224	247	1	324	1.9	1
S6MAF210A	S6MAF210CA	210	231	268	1	340	1.8	1
S6MAF220A	S6MAF220CA	220	246	272	1	356	1.7	1
S6MAF250A		250	279	309	1	405	1.5	1
S6MAF300A		300	335	371	1	486	1.3	1
S6MAF350A		350	391	432	1	567	1.1	1
S6MAF400A		400	447	494	1	648	0.9	1
S6MAF440A		440	492	543	1	713	0.9	1

Typical Characteristics

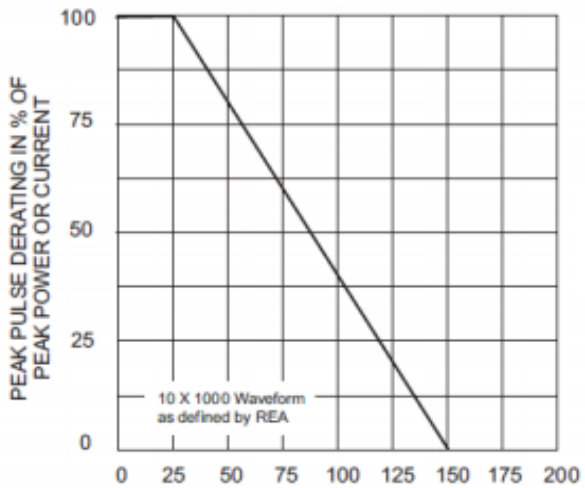


Fig. 1 Pulse Derating Curve

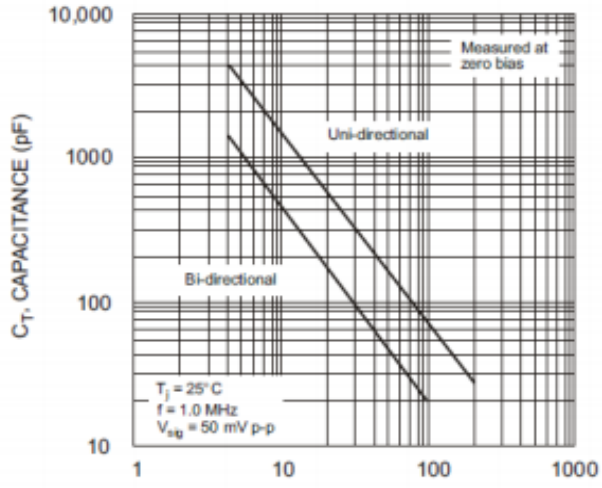


Fig. 2 Typical Total Capacitance

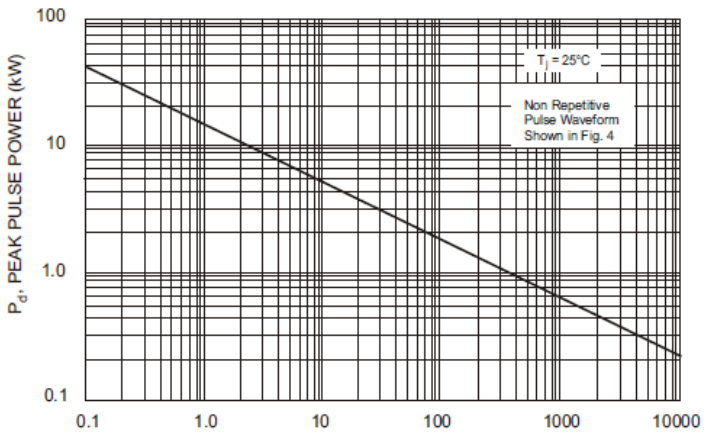


Fig. 3 Pulse Rating Curve

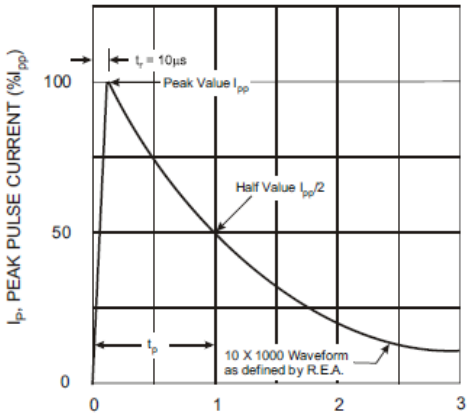


Fig. 4 Pulse Waveform

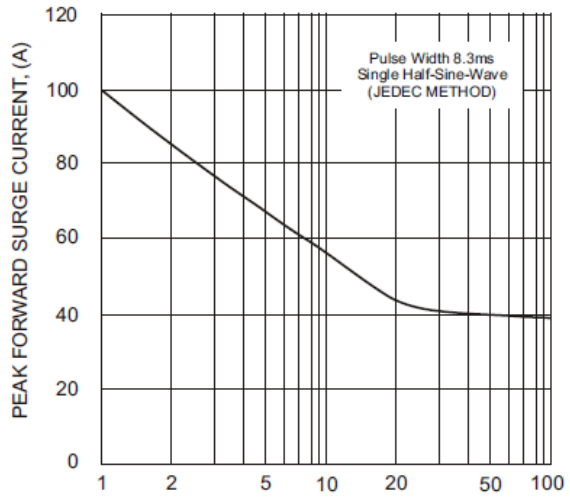


Fig. 5, Maximum Non-Repetitive Surge Current

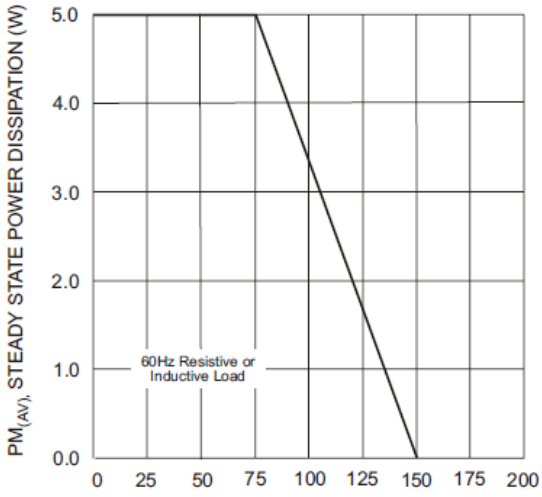
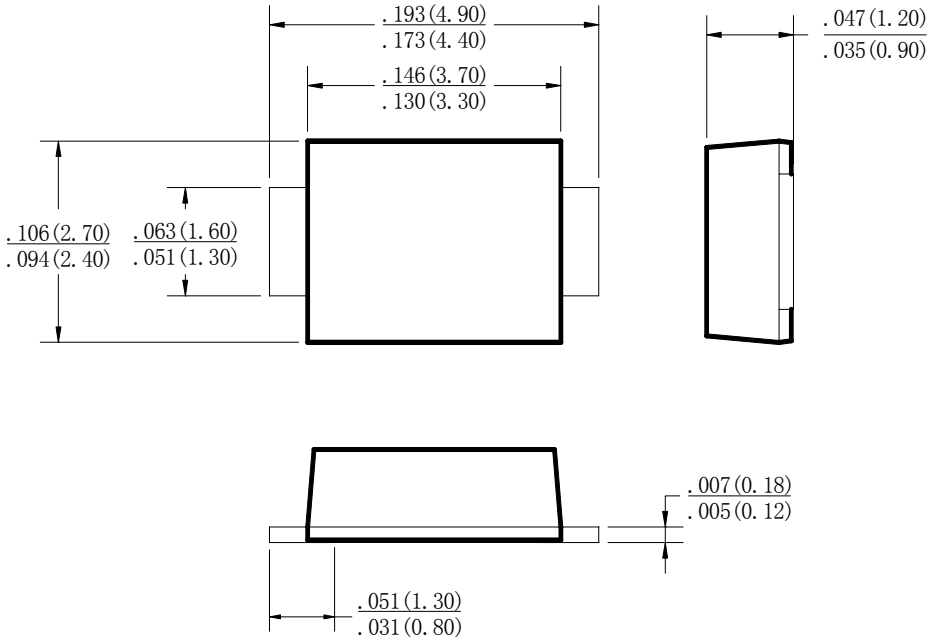


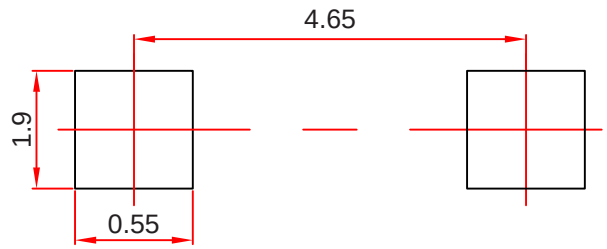
Fig. 6 Steady State Power Derating Curve

SMAF Package Outline Dimensions



Dimensions in inches and (millimeters)

SMAF Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

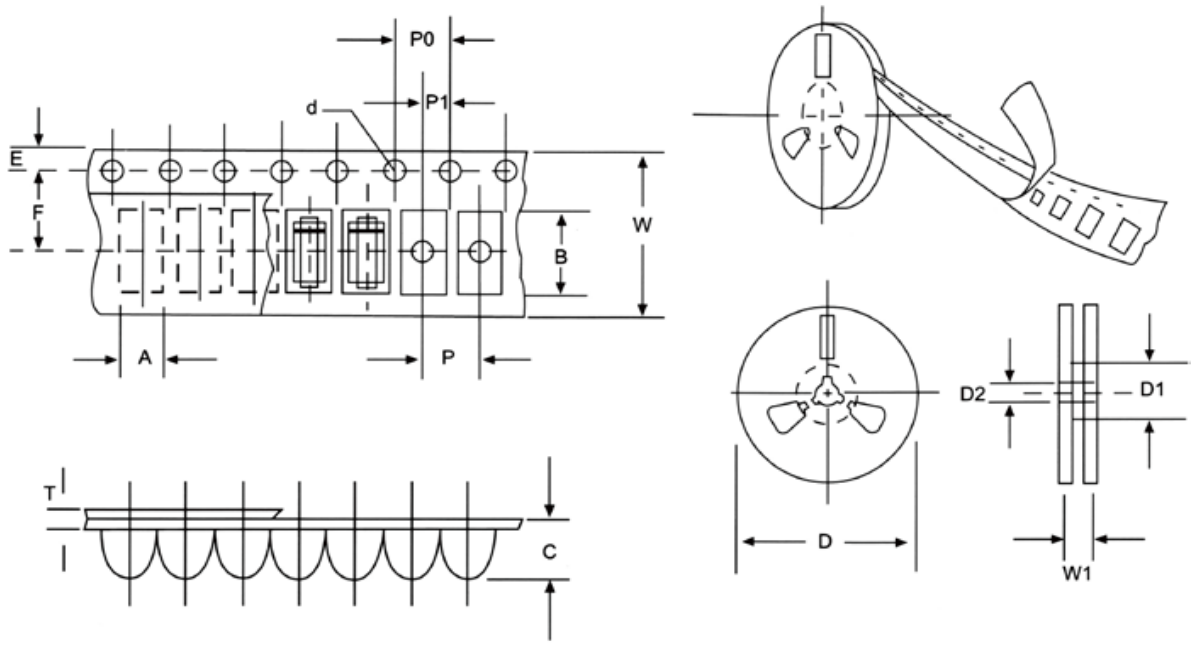


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

ITEM	SYMBOL	SMAF mm(inch)
Carrier width	A	2.83+0.1(0.112+0.004)
Carrier length	B	4.90+0.1(0.193+0.004)
Carrier depth	C	1.45+0.1(0.057+0.004)
Sprocket hole	d	1.55+0.05(0.061+0.002)
Reel outside diameter	D	178+2.0(7.0+0.079)
Reel inner diameter	D1	54±1.0(2.13±0.039)
Feed hole diameter	D2	13+0.5(0.512+0.020)
Stroket hole position	E	1.75+0.1(0.069+0.004)
Punch hole position	F	5.5+0.05(0.217+0.002)
Punch hole pitch	P	4.0+0.1(0.157+0.004)
Sprocket hole pitch	P0	4.0+0.1(0.157+0.004)
Embossment center	P1	2.0+0.1(0.079+0.004)
Totall tape thickness	T	0.23-0.29(0.009-0.011)
Tape width	W	12.0+0.1(0.472+0.004)
Reel width	W1	16.8+2.0(0.661+0.079)

NOTE:Devices are packed in accordance with EIA standard RS-481-A and specification given above.