

FEATURES

- | Complete voltage range 3.0 to 300 volts
- | High peak reverse power dissipation
- | High reliability
- | Low leakage current
- | Standard zener voltage tolerance is $\pm 5\%$



SMAF



Schematic Symbol

MECHANICAL DATA

- | Case : Molded plastic body
- | Polarity : Polarity symbol marking on body
- | Mounting Position : Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
DC Power dissipation at $T_L = 50^{\circ}\text{C}$ (Note1)	P_D	2.0	W
Maximum instantaneous forward voltage@ $I_F=200\text{mA}$	V_F	1.2	V
Maximum junction temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

Note:
 (1) T_L =Lead temperature at 3/8" (9.5mm) from body

ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Nominal Zener Voltage			Test current	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V _Z Min(V)	V _Z AVE.(V)	V _Z Max(V)		Z _{ZT} at I _{ZT} (Ω)	Z _{ZK} at I _{ZK} (Ω)	I _{ZK} (mA)	I _R (uA)	V _R (V)	
SMAF2Z3.0A	2H1	2.85	3.0	3.15	160.0	8.0	400	1.00	100.0	1.0	603.0
SMAF2Z3.3A	2H2	3.14	3.3	3.47	145.0	8.0	400	1.00	100.0	1.0	548.0
SMAF2Z3.6A	2H3	3.42	3.6	3.78	139.0	5.0	400	1.00	100.0	1.0	502.0
SMAF2Z3.9A	2H4	3.71	3.9	4.10	128.0	5.0	400	1.00	50.0	1.0	464.0
SMAF2Z4.3A	2H5	4.09	4.3	4.52	116.0	4.5	400	1.00	50.0	1.0	421.0
SMAF2Z4.7A	2H6	4.47	4.7	4.94	106.0	4.5	550	1.00	10.0	1.0	385.0
SMAF2Z5.1A	2H7	4.85	5.1	5.36	98.0	3.5	600	1.00	10.0	1.0	354.0
SMAF2Z5.6A	2H8	5.32	5.6	5.88	89.5	2.5	500	1.00	10.0	2.0	323.0
SMAF2Z6.2A	2A0	5.89	6.2	6.51	80.5	1.5	700	1.00	10.0	3.0	292.0
SMAF2Z6.8A	2A1	6.46	6.8	7.14	73.5	2.0	700	1.00	10.0	4.0	266.0
SMAF2Z7.5A	2A2	7.13	7.5	7.88	66.5	2.0	700	0.50	10.0	5.0	242.0
SMAF2Z8.2A	2A3	7.79	8.2	8.61	61.0	2.3	700	0.50	10.0	6.0	220.0
SMAF2Z9.1A	2A4	8.65	9.1	9.56	55.0	2.5	700	0.50	10.0	7.0	200.0
SMAF2Z10A	2A5	9.50	10.0	10.50	50.0	3.5	700	0.25	10.0	7.6	182.0
SMAF2Z11A	2A6	10.45	11.0	11.55	45.5	4.0	700	0.25	1.0	8.4	166.0
SMAF2Z12A	2A7	11.40	12.0	12.60	41.5	4.5	700	0.25	1.0	9.1	152.0
SMAF2Z13A	2A8	12.35	13.0	13.65	38.5	5.0	700	0.25	0.5	9.9	138.0
SMAF2Z14A	2A9	13.30	14.0	14.70	35.7	5.5	700	0.25	0.5	10.6	130.0
SMAF2Z15A	2B0	14.25	15.0	15.75	33.4	7.0	700	0.25	0.5	11.4	122.0
SMAF2Z16A	2B1	15.20	16.0	16.80	31.2	8.0	700	0.25	0.5	12.2	114.0
SMAF2Z17A	2B2	16.15	17.0	17.85	29.4	9.0	750	0.25	0.5	13.0	107.0
SMAF2Z18A	2B3	17.10	18.0	18.90	27.8	10.0	750	0.25	0.5	13.7	100.0
SMAF2Z19A	2B4	18.05	19.0	19.95	26.3	11.0	750	0.25	0.5	14.4	95.0
SMAF2Z20A	2B5	19.00	20.0	21.00	25.0	11.0	750	0.25	0.5	15.2	90.0
SMAF2Z22A	2B6	20.90	22.0	23.10	22.8	12.0	750	0.25	0.5	16.7	82.0
SMAF2Z24A	2B7	22.80	24.0	25.20	20.8	13.0	750	0.25	0.5	18.2	76.0
SMAF2Z27A	2B8	25.65	27.0	28.35	18.5	18.0	750	0.25	0.5	20.6	68.0
SMAF2Z30A	2B9	28.50	30.0	31.50	16.6	20.0	1000	0.25	0.5	22.5	60.0
SMAF2Z33A	2C0	31.35	33.0	34.65	15.1	23.0	1000	0.25	0.5	25.1	55.0
SMAF2Z36A	2C1	34.20	36.0	37.80	13.9	25.0	1000	0.25	0.5	27.4	50.0

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		V _Z Min(V)	V _Z AVE.(V)	V _Z Max(V)		Z _{ZT} at I _{ZT} (Ω)	Z _{ZK} at I _{ZK} (Ω)	I _{ZK} (mA)	I _R (uA)	V _R (V)	
SMAF2Z39A	2C2	37.05	39.0	40.95	12.8	30.0	1000	0.25	0.5	29.7	47.0
SMAF2Z43A	2C3	40.85	43.0	45.15	11.6	35.0	1500	0.25	0.5	32.7	43.0
SMAF2Z47A	2C4	44.65	47.0	49.35	10.6	40.0	1500	0.25	0.5	35.8	39.0
SMAF2Z51A	2C5	48.45	51.0	53.55	9.8	48.0	1500	0.25	0.5	38.8	36.0
SMAF2Z56A	2C6	53.20	56.0	58.80	9.0	55.0	2000	0.25	0.5	42.6	32.0
SMAF2Z62A	2C7	58.90	62.0	65.10	8.1	60.0	2000	0.25	0.5	47.1	29.0
SMAF2Z68A	2C8	64.60	68.0	71.40	7.4	75.0	2000	0.25	0.5	51.7	27.0
SMAF2Z75A	2C9	71.25	75.0	78.75	6.7	90.0	2000	0.25	0.5	56.0	24.0
SMAF2Z82A	2F0	77.90	82.0	86.10	6.1	100.0	3000	0.25	0.5	62.2	22.0
SMAF2Z91A	2F1	86.45	91.0	95.55	5.5	125.0	3000	0.25	0.5	69.2	20.0
SMAF2Z100A	2F2	95.00	100.0	105.00	5.0	175.0	3000	0.25	0.5	76.0	18.0
SMAF2Z110A	2F3	104.50	110.0	115.50	4.5	250.0	4000	0.25	0.5	83.6	17.0
SMAF2Z120A	2F4	114.00	120.0	126.00	4.2	325.0	4500	0.25	0.5	91.2	15.0
SMAF2Z130A	2F5	123.50	130.0	136.50	3.8	400.0	5000	0.25	0.5	98.8	14.0
SMAF2Z140A	2F6	133.00	140.0	147.00	3.6	500.0	5500	0.25	0.5	106.4	13.0
SMAF2Z150A	2F7	142.50	150.0	157.50	3.3	575.0	6000	0.25	0.5	114.0	12.0
SMAF2Z160A	2F8	152.00	160.0	168.00	3.1	650.0	6500	0.25	0.5	121.6	11.0
SMAF2Z170A	2F9	161.50	170.0	178.50	2.9	675.0	7000	0.25	0.5	130.4	11.0
SMAF2Z180A	2G1	171.00	180.0	189.00	2.8	725.0	7000	0.25	0.5	136.8	10.0
SMAF2Z190A	2G2	180.50	190.0	199.50	2.6	825.0	8000	0.25	0.5	144.8	10.0
SMAF2Z200A	2G3	190.00	200.0	210.00	2.5	1900.0	9990	0.25	0.5	152.0	9.0
SMAF2Z220A	2G4	209.00	220.0	231.00	2.0	2000.0	8500	0.25	0.5	167.0	8.0
SMAF2Z270A	2G5	256.50	270.0	283.50	1.6	2200.0	8500	0.25	0.5	205.0	6.7
SMAF2Z300A	2G6	285.00	300.0	315.00	1.5	2200.0	9000	0.25	0.5	228.0	5.9
SMAF2Z330A	2G7	313.50	330.0	346.50	1.4	2300.0	9000	0.25	0.5	250.0	5.4

CHARACTERISTIC CURVES

Fig.1-Power Temperature Derating Curve

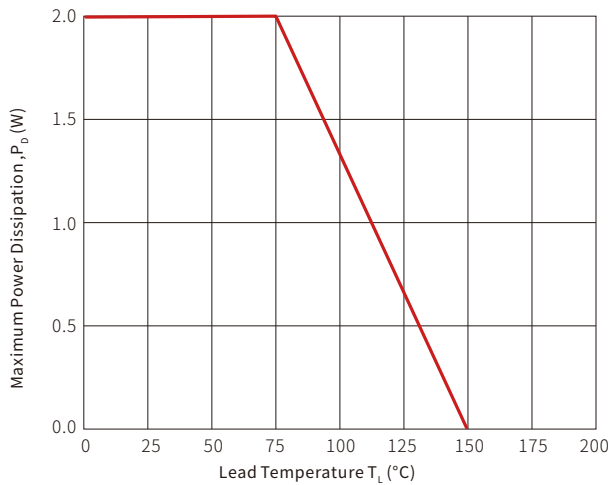


Fig.2-Temperature Coefficients v.s. Zener Voltage

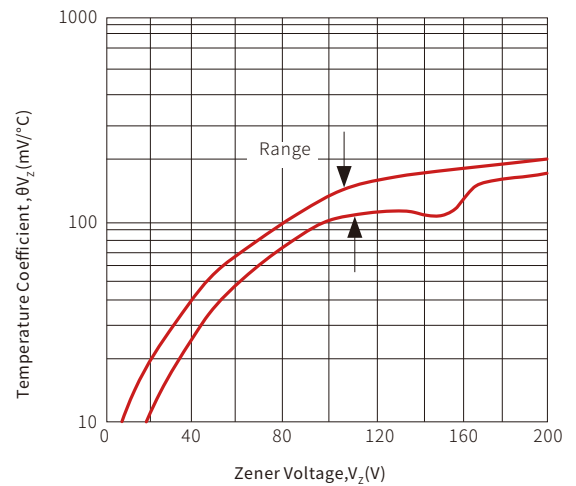


Fig.3-Typical Thermal Resistance v.s. Lead Length

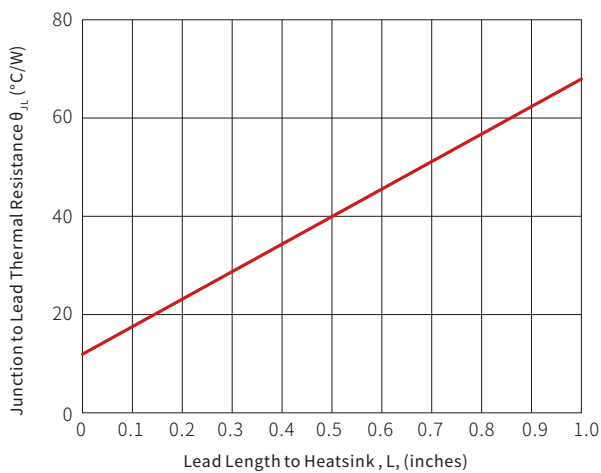


Fig.4-Maximum Surge Power

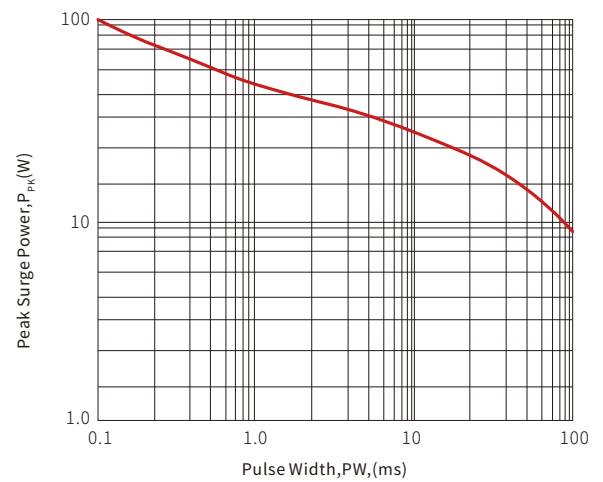
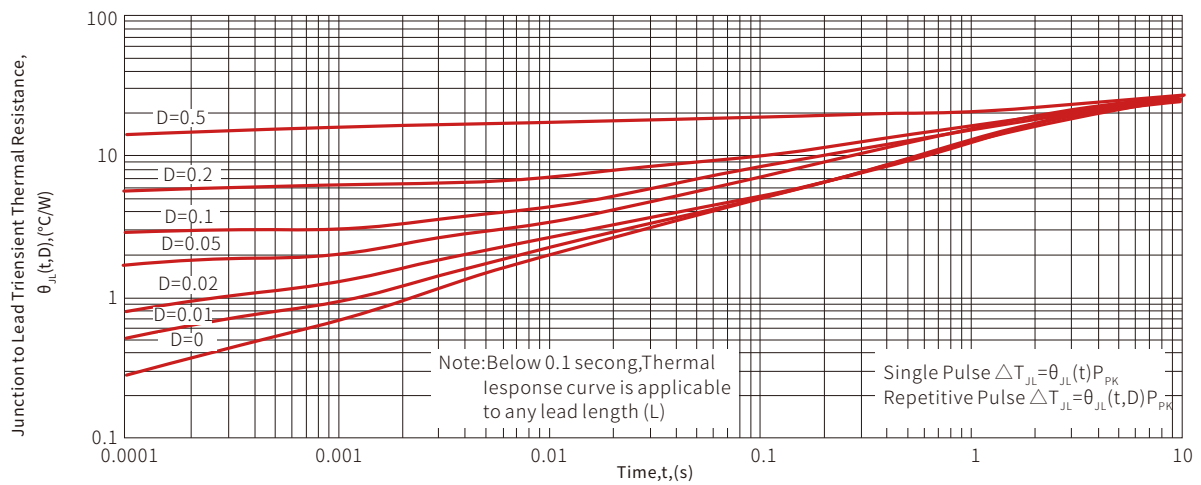
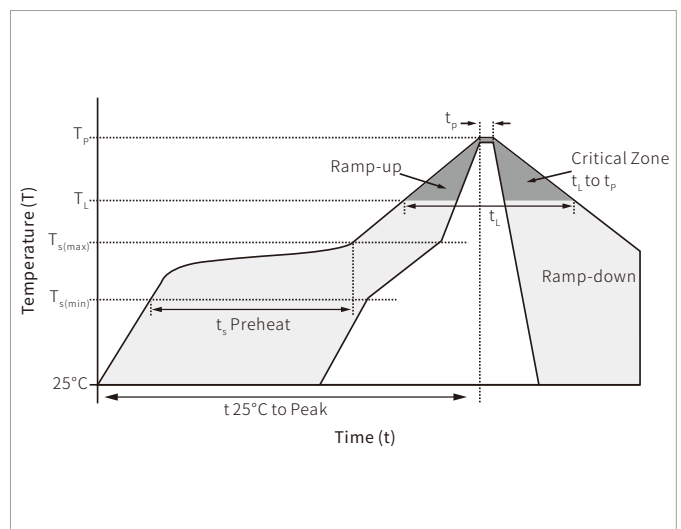


Fig.5-Typical Thermal Response L , Lead Length=3/8inch

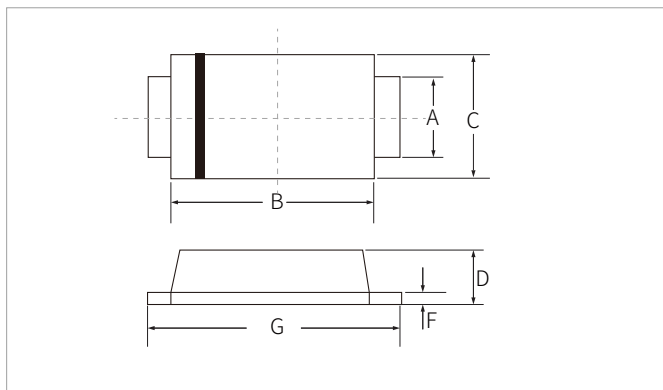


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

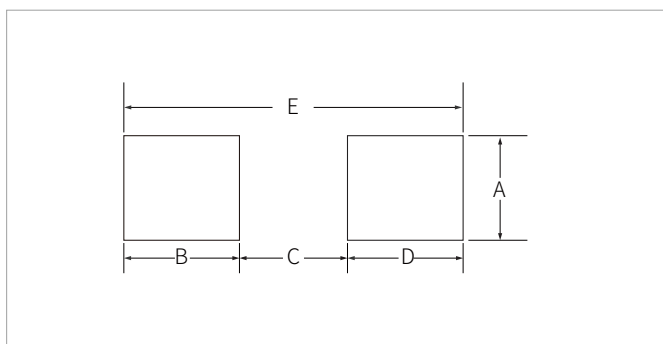


SMAF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.60	0.053	0.063
B	3.40	3.80	0.134	0.145
C	2.40	2.80	0.094	0.110
D	0.95	1.45	0.037	0.057
F	0.15	0.22	0.006	0.009
G	4.40	4.80	0.173	0.189

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.70	-	0.067	-
B	2.50	-	0.098	-
C	-	1.5	-	0.059
D	2.50	-	0.098	-
E	6.50REF		0.256REF	

ORDERING INFORMATION

Part Number	Package	QTY/Reel	Reel Size
SMAF2Z-A	SMAF	3000PCS	7"

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By QR Code

Website



Wechat

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