

## FEATURES

- | Glass passivated chip

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- | Built-in strain relief

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- | Low inductance

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- | High peak reverse power dissipation

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- | Low reverse leakage

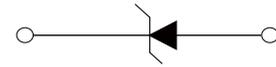
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- | For use in stabilizing and clipping with high power rating

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SOD-123FL



Schematic Symbol

## MECHANICAL DATA

- | Case : Molded plastic body

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- | Polarity : Polarity symbol marking on body

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- | Mounting Position : Any

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## APPROVALS

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

## MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Parameter	Symbo	Value	Unit
DC Power dissipation at T <sub>L</sub> = 75 °C <sup>(1)</sup>	P <sub>D</sub>	1.0	W
Maximum forward voltage at if=200mA	V <sub>F</sub>	1.2	V
Junction temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
Storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Note:

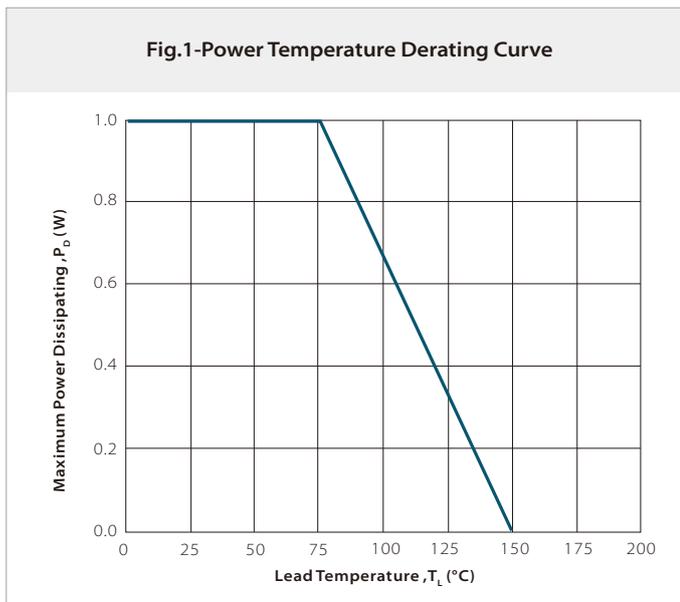
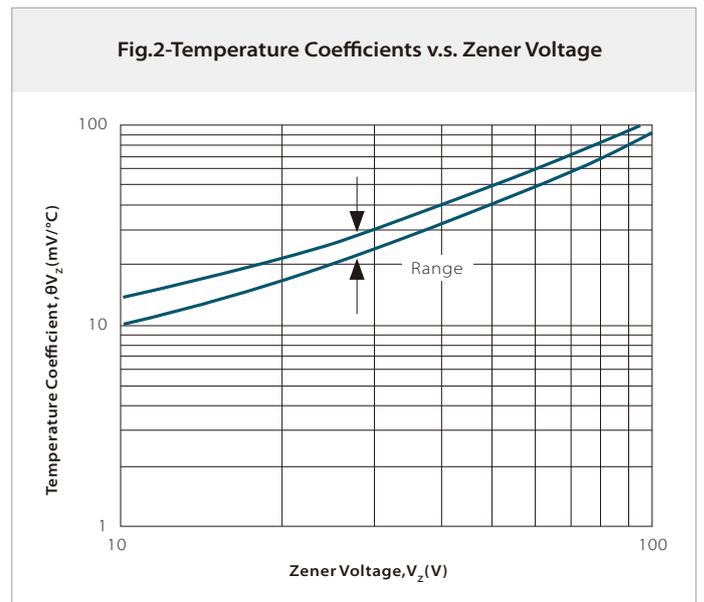
 (1) T<sub>L</sub>=Lead temperature at 3/8" (9.5mm) from body

## ELECTRICAL CHARACTERISTICS

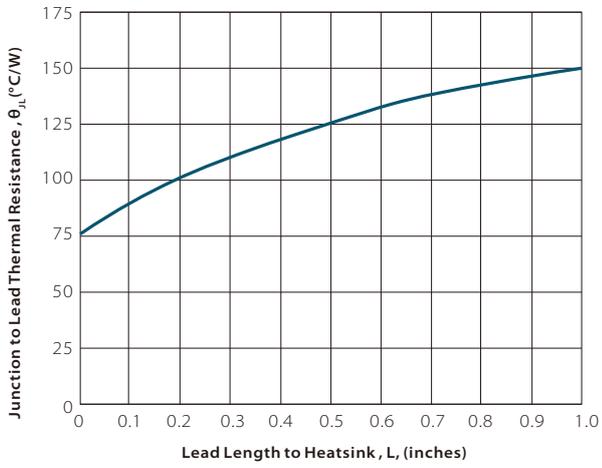
Part Number	Device Marking Code	Nominal Zener Voltage @ $I_T$			$I_T$ (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		$V_{Z\text{AVE.}}$ (V)	$V_{Z\text{MIN.}}$ (V)	$V_{Z\text{MAX.}}$ (V)		$Z_{ZT\text{MAX.}}$ ( $\Omega$ ) @ $I_{ZT}$	$Z_{ZK\text{MAX.}}$ ( $\Omega$ ) @ $I_{ZK}$	$I_{ZK}$ (mA)	$I_R$ ( $\mu$ A) @ $V_R$	$V_R$ (V)	
SMF4728A	28A	3.3	3.14	3.47	76.0	10.0	400.0	1.00	100.0	1.0	274.0
SMF4729A	29A	3.6	3.42	3.78	69.0	10.0	400.0	1.00	100.0	1.0	251.0
SMF4730A	30A	3.9	3.71	4.10	64.0	9.0	400.0	1.00	50.0	1.0	232.0
SMF4731A	31A	4.3	4.09	4.52	58.0	9.0	400.0	1.00	10.0	1.0	210.0
SMF4732A	32A	4.7	4.47	4.94	53.0	8.0	500.0	1.00	10.0	1.0	192.0
SMF4733A	33A	5.1	4.85	5.36	49.0	7.0	550.0	1.00	10.0	1.0	177.0
SMF4734A	34A	5.6	5.32	5.88	45.0	5.0	600.0	1.00	10.0	2.0	161.0
SMF4735A	35A	6.2	5.89	6.51	41.0	2.0	700.0	1.00	10.0	3.0	146.0
SMF4736A	36A	6.8	6.46	7.14	37.0	4.0	700.0	1.00	10.0	4.0	133.0
SMF4737A	37A	7.5	7.13	7.88	34.0	4.0	700.0	0.50	10.0	5.0	121.0
SMF4738A	38A	8.2	7.79	8.61	31.0	5.0	700.0	0.50	10.0	6.0	110.0
SMF4739A	39A	9.1	8.65	9.56	28.0	5.0	700.0	0.50	10.0	7.0	100.0
SMF4740A	40A	10.0	9.50	10.50	25.0	7.0	700.0	0.25	10.0	7.6	91.0
SMF4741A	41A	11.0	10.45	11.55	23.0	8.0	700.0	0.25	0.5	8.4	83.0
SMF4742A	42A	12.0	11.40	12.60	21.0	9.0	700.0	0.25	0.5	9.1	76.0
SMF4743A	43A	13.0	12.35	13.65	19.0	10.0	700.0	0.25	0.5	9.9	69.0
SMF4744A	44A	15.0	14.25	15.75	17.0	14.0	700.0	0.25	0.5	11.4	61.0
SMF4745A	45A	16.0	15.20	16.80	15.5	16.0	700.0	0.25	0.5	12.2	57.0
SMF4746A	46A	18.0	17.10	18.90	14.0	20.0	750.0	0.25	0.5	13.7	50.0
SMF4747A	47A	20.0	19.00	21.00	12.5	22.0	750.0	0.25	0.5	15.2	45.0
SMF4748A	48A	22.0	20.90	23.10	11.5	23.0	750.0	0.25	0.5	16.7	41.0
SMF4749A	49A	24.0	22.80	25.20	10.5	25.0	750.0	0.25	0.5	18.2	38.0
SMF4750A	50A	27.0	25.65	28.35	9.5	35.0	750.0	0.25	0.5	20.6	34.0
SMF4751A	51A	30.0	28.50	31.50	8.5	40.0	1000.0	0.25	0.5	22.8	30.0
SMF4752A	52A	33.0	31.35	34.65	7.5	45.0	1000.0	0.25	0.5	25.1	27.0
SMF4753A	53A	36.0	34.20	37.80	7.0	50.0	1000.0	0.25	0.5	27.4	25.0
SMF4754A	54A	39.0	37.05	40.95	6.5	60.0	1000.0	0.25	0.5	29.7	23.0
SMF4755A	55A	43.0	40.85	45.15	6.0	70.0	1500.0	0.25	0.5	32.7	22.0
SMF4756A	56A	47.0	44.65	49.35	5.5	80.0	1500.0	0.25	0.5	35.8	19.0
SMF4757A	57A	51.0	48.45	53.55	5.0	95.0	1500.0	0.25	0.5	38.8	18.0
SMF4758A	58A	56.0	53.20	58.80	4.5	110.0	2000.0	0.25	0.5	42.6	16.0

Part Number	Device Marking Code	Nominal Zener Voltage @ $I_T$			$I_{ZT}$ (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		$V_{ZAVE.}$ (V)	$V_{ZMIN.}$ (V)	$V_{ZMAX.}$ (V)		$Z_{ZT MAX.}$ ( $\Omega$ ) @ $I_{ZT}$	$Z_{ZK MAX.}$ ( $\Omega$ ) @ $I_{ZK}$	$I_{ZK}$ (mA)	$I_R$ ( $\mu$ A) @ $V_R$	$V_R$ (V)	
SMF4759A	59A	62.0	58.90	65.10	4.0	125.0	2000.0	0.25	0.5	47.1	14.0
SMF4760A	60A	68.0	64.60	71.40	3.7	150.0	2000.0	0.25	0.5	51.7	13.0
SMF4761A	61A	75.0	71.25	78.75	3.3	175.0	2000.0	0.25	0.5	56.0	12.0
SMF4762A	62A	82.0	77.90	86.10	3.0	200.0	3000.0	0.25	0.5	62.2	11.0
SMF4763A	63A	91.0	86.45	95.55	2.8	250.0	3000.0	0.25	0.5	69.2	10.0
SMF4764A	64A	100.0	95.00	105.00	2.5	350.0	3000.0	0.25	0.5	76.0	9.0
SZF1110A	11Z	110.0	104.50	115.50	2.3	450.0	4000.0	0.25	0.5	83.6	8.6
SZF1120A	12Z	120.0	114.00	126.00	2.0	550.0	4500.0	0.25	0.5	91.2	7.8
SZF1130A	13Z	130.0	123.50	136.50	1.9	700.0	5000.0	0.25	0.5	98.8	7.0
SZF1150A	15Z	150.0	142.50	157.50	1.7	1000.0	6000.0	0.25	0.5	114.0	6.4
SZF1160A	16Z	160.0	152.00	168.00	1.6	1100.0	6500.0	0.25	0.5	121.6	5.8
SZF1180A	18Z	180.0	171.00	189.00	1.4	1200.0	7000.0	0.25	0.5	136.8	5.2
SZF1200A	20Z	200.0	190.00	210.00	1.2	1900.0	9990.0	0.25	0.5	152.0	4.7

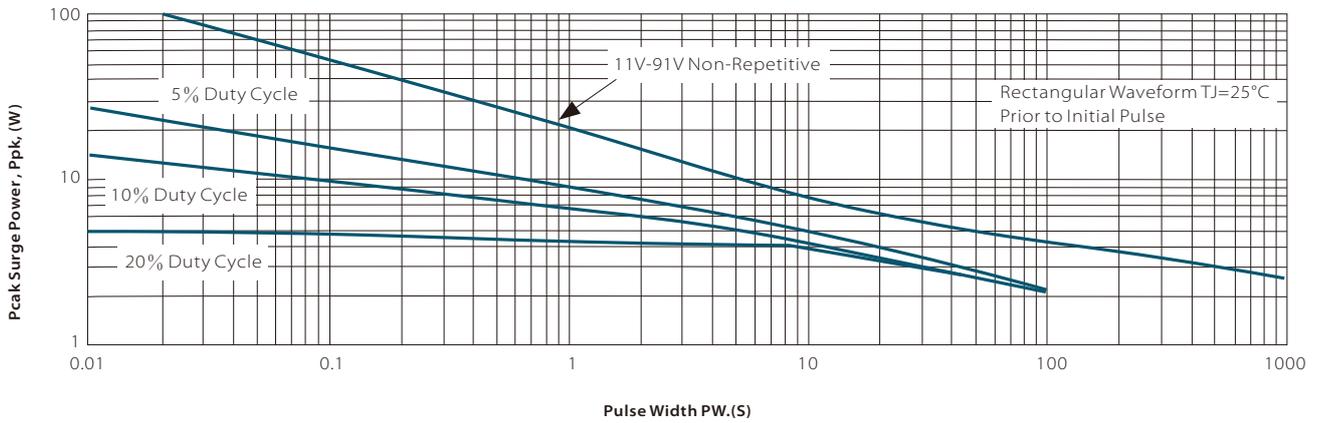
## CHARACTERISTIC CURVES

**Fig.1-Power Temperature Derating Curve**

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


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

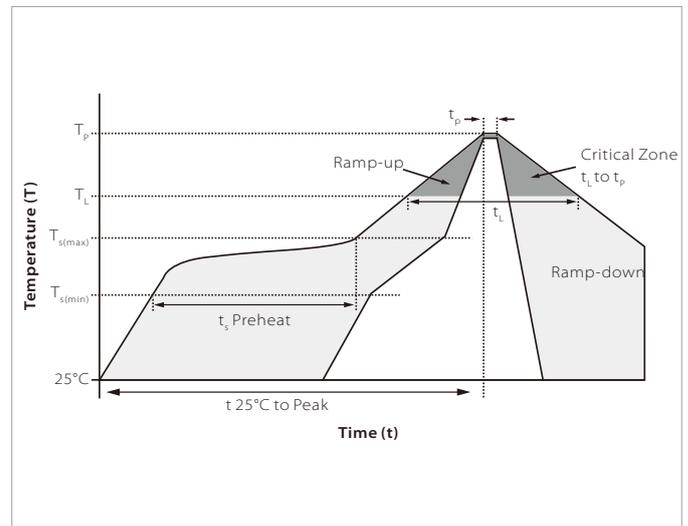


**Fig.4-Maximum Surge Power**

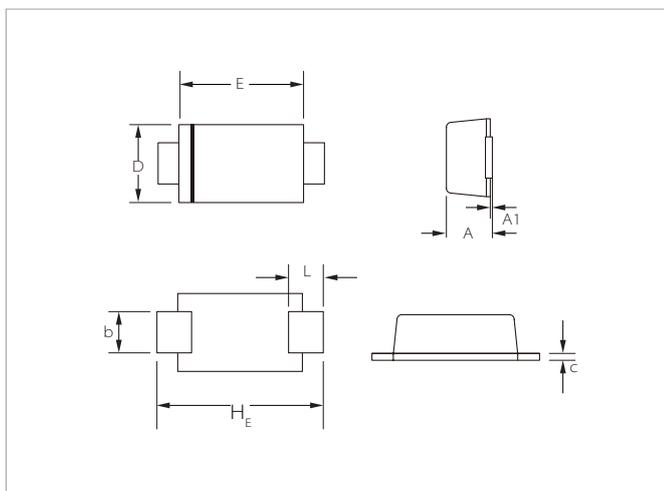


## SOLDERING PARAMETERS

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) ( $t_r$ )	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

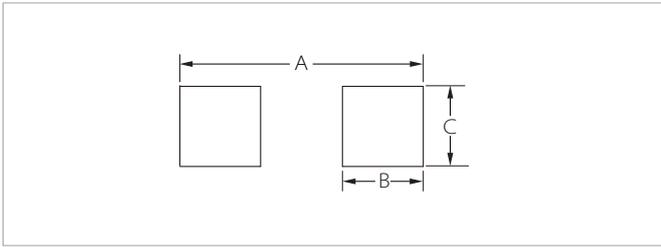


## SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	2.90	0.098	0.114
L	0.35	0.90	0.014	0.035
H <sub>E</sub>	3.40	3.90	0.134	0.154

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SMF47xxA Series	SOD-123FL	3000PCS	7"

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