

SMF

Primary Characteristics

V_{BR}	3.3~330V
P_D	1W
$T_J \text{ max}$	175°C

Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free component
- For use in stabilizing and clipping circuits with high power rating

Mechanical Data

- Case: SMF
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any

Ordering Information

Part No.	Remark	Package	Packing
SML Series	General	SMF	3000 / Tape & Reel
SML Series-H	Halogen Free		
SML Series-Q	AEC-Q101 qualified		

Maximum Ratings

Parameter	Symbol	Limits	Units
DC Power Dissipation at $T_L = 50^\circ\text{C}$ (Note1)	P_D	1	W
Maximum Forward Voltage at $I_F = 200 \text{ mA}$.	V_F	1.2	V
Maximum Thermal Resistance Junction to Ambient Air (Note2)	$R\theta_{JA}$	170	K / W
Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Note:

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

(2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.



Electrical Characteristics ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

Part Number	Device Marking Code	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Maximum DC Zener Surge Current
		$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}	I_{RM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μ A)	(V)	(mA)	(mApk)
SML4728A	28A	3.3	76.0	10.0	400	1	100.0	1.0	274.0	1370
SML4729A	29A	3.6	69.0	10.0	400	1	100.0	1.0	251.0	1255
SML4730A	30A	3.9	64.0	9.0	400	1	50.0	1.0	232.0	1160
SML4731A	31A	4.3	58.0	9.0	400	1	10.0	1.0	210.0	1150
SML4732A	32A	4.7	53.0	8.0	500	1	10.0	1.0	192.0	960
SML4733A	33A	5.1	49.0	7.0	550	1	10.0	1.0	177.0	885
SML4734A	34A	5.6	45.0	5.0	600	1	10.0	2.0	161.0	805
SML4735A	35A	6.2	41.0	2.0	700	1	10.0	3.0	146.0	730
SML4736A	36A	6.8	37.0	3.5	700	1	5.0	4.0	133.0	660
SML4737A	37A	7.5	34.0	4.0	700	0.5	5.0	5.0	121.0	605
SML4738A	38A	8.2	31.0	4.5	700	0.5	5.0	6.0	110.0	550
SML4739A	39A	9.1	28.0	5.0	700	0.5	0.5	7.0	100.0	500
SML4740A	40A	10	25.0	7.0	700	0.25	0.5	7.6	91.0	454
SML4741A	41A	11	23.0	8.0	700	0.25	0.5	8.4	83.0	414
SML4742A	42A	12	21.0	9.0	700	0.25	0.5	9.1	76.0	380
SML4743A	43A	13	19.0	10.0	700	0.25	0.5	9.9	69.0	344
SML4744A	44A	15	17.0	14.0	700	0.25	0.5	11.4	61.0	305
SML4745A	45A	16	15.5	16.0	700	0.25	0.5	12.2	57.0	285
SML4746A	46A	18	14.0	20.0	750	0.25	0.5	13.7	50.0	250
SML4747A	47A	20	12.5	22.0	750	0.25	0.5	15.2	45.0	225
SML4748A	48A	22	11.5	23.0	750	0.25	0.5	16.7	41.0	205
SML4749A	49A	24	10.5	25.0	750	0.25	0.5	18.2	38.0	190
SML4750A	50A	27	9.5	35.0	750	0.25	0.5	20.6	34.0	170
SML4751A	51A	30	8.5	40.0	1000	0.25	0.5	22.8	30.0	150
SML4752A	52A	33	7.5	45.0	1000	0.25	0.5	25.1	27.0	135
SML4753A	53A	36	7.0	50.0	1000	0.25	0.5	27.4	25.0	125
SML4754A	54A	39	6.5	60.0	1000	0.25	0.5	29.7	23.0	115
SML4755A	55A	43	6.0	70.0	1500	0.25	0.5	32.7	22.0	110
SML4756A	56A	47	5.5	80.0	1500	0.25	0.5	35.8	19.0	95
SML4757A	57A	51	5.0	95.0	1500	0.25	0.5	38.8	18.0	90
SML4758A	58A	56	4.5	110.0	2000	0.25	0.5	42.6	16.0	80
SML4759A	59A	62	4.0	125.0	2000	0.25	0.5	47.1	14.0	70
SML4760A	60A	68	3.7	150.0	2000	0.25	0.5	51.7	13.0	65
SML4761A	61A	75	3.3	175.0	2000	0.25	0.5	56.0	12.0	60
SML4762A	62A	82	3.0	200.0	3000	0.25	0.5	62.2	11.0	55
SML4763A	63A	91	2.8	250.0	3000	0.25	0.5	69.2	10.0	50
SML4764A	64A	100	2.5	350.0	3000	0.25	0.5	76.0	9.0	45
SMZ1110A	11Z	110	2.3	450.0	4000	0.25	0.5	83.6	8.6	40
SMZ1120A	12Z	120	2.0	550.0	4500	0.25	0.5	91.2	7.8	37
SMZ1130A	13Z	130	1.9	700.0	5000	0.25	0.5	98.8	7.0	34



Electrical Characteristics ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

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		$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}	I_{RM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)	(mA _{pk})
SMZ1150A	15Z	150	1.7	1000.0	6000	0.25	0.5	114.0	6.4	30
SMZ1160A	16Z	160	1.6	1100.0	6500	0.25	0.5	121.6	5.8	28
SMZ1180A	18Z	180	1.4	1200.0	7000	0.25	0.5	136.8	5.2	25
SMZ1200A	20Z	200	1.2	1900.0	9990	0.25	0.5	152.0	4.7	22
SMZ1220A	22Z	220	1.0	1600.0	8000	0.25	0.5	167.2	4.0	20
SMZ1240A	24Z	240	0.9	1800.0	8500	0.25	0.5	182.4	3.8	19
SMZ1250A	25Z	250	0.9	2000.0	9000	0.25	0.5	190.0	3.6	18
SMZ1270A	27Z	270	0.8	2100.0	9000	0.25	0.5	205.0	3.3	16
SMZ1300A	30Z	300	0.8	2300.0	9500	0.25	0.5	228.0	3.0	15
SMZ1330A	33Z	330	0.7	2500.0	9500	0.25	0.5	250.2	2.7	13

Note:

- (1) The type number listed have a standard tolerance on the nominal Zener voltage of $\pm 5\%$
- (2) The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC Method.



Rating and Characteristics Curves

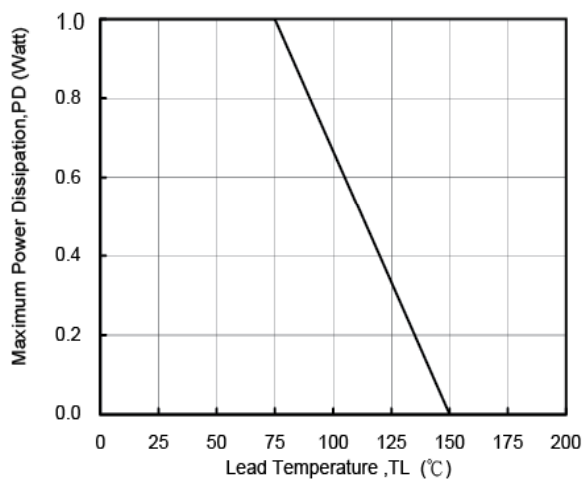


Fig. 1 - Power Temperature Derating Curve

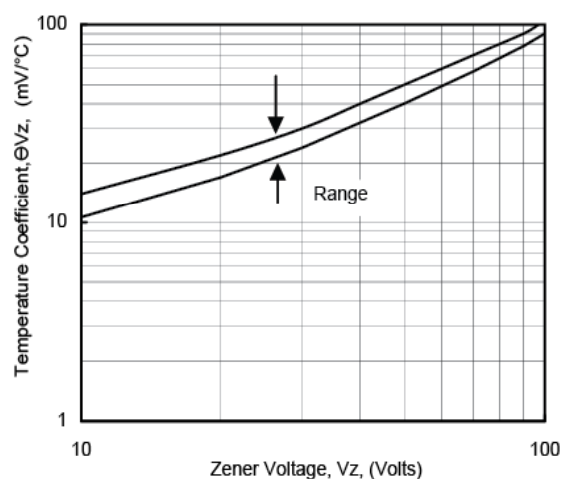


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

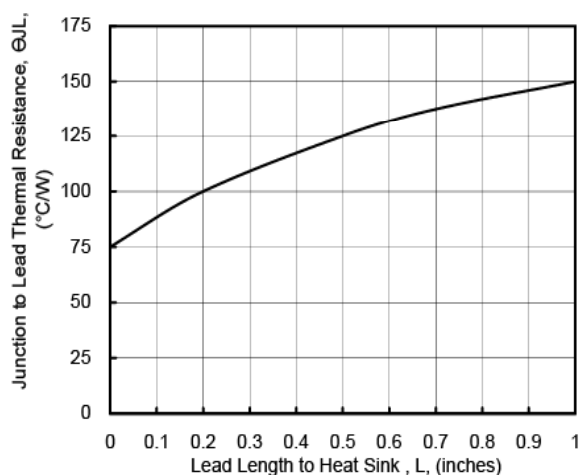


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

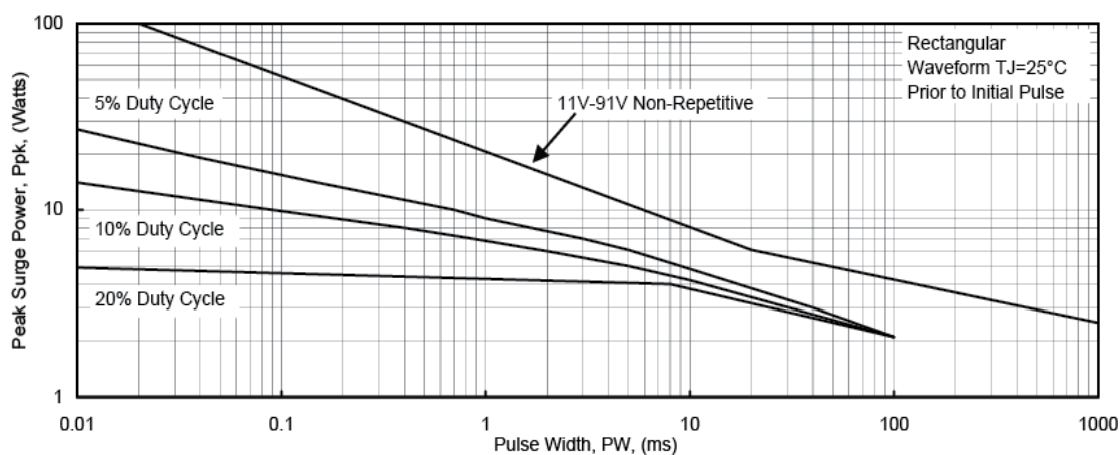
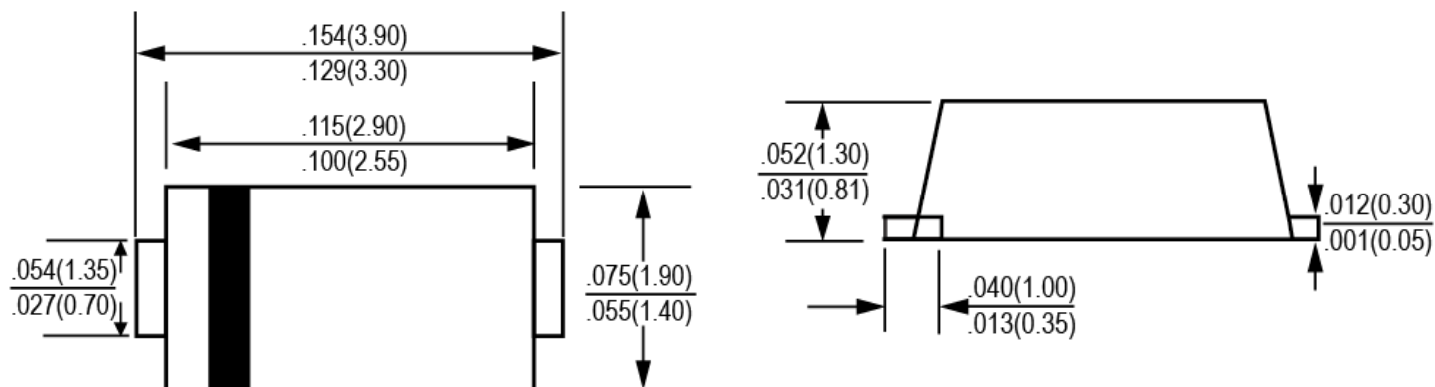


Fig. 4 - Maximum Surge Power



Package Outline Dimensions

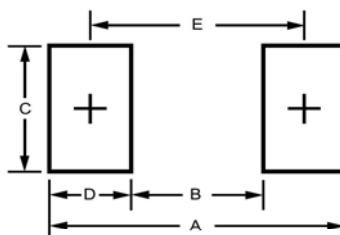


SMF

Dimensions in inches and (millimeters)

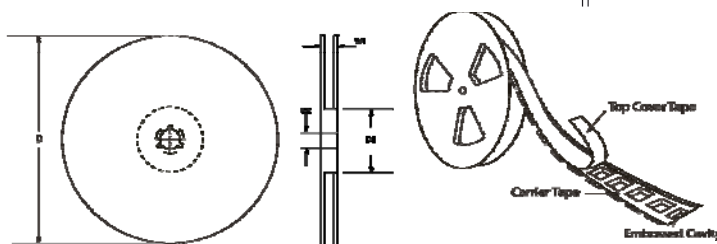
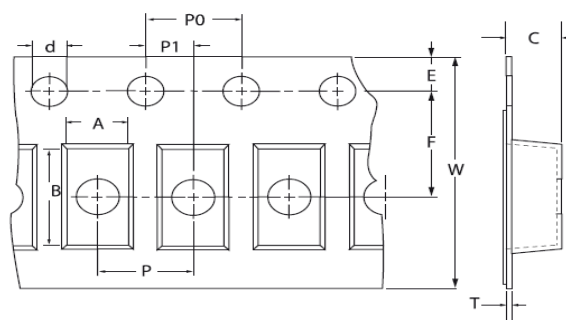
Suggested Pad Layout

Symbol	Outline	SMF millimeters
A		-
B		-
C		1.40
D		1.30
E		2.90



Tape & Reel Specification

Item	Symbol	Dimension
		millimeters
Carrier width	A	2.0 ±0.1
Carrier length	B	3.95 ±0.1
Sprocket hole	d	1.55 ±0.05
Reel outside diameter	D	178.0 ± 2.0
Reel inner diameter	D1	50.0 min.
Sprocket hole position	E	1.75 ±0.1
Punch hole position	F	3.5 ±0.1
Punch hole pitch	P	4.0 ±0.1
Sprocket hole pitch	P0	4.0 ±0.1
Embossment center	P1	2.0 ±0.1
Tape width	W	8.0 ±0.1
Reel width	W1	11.4max.





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