1SMA4728A THRU 1SMA4777A

1 W Silicon Zener Diodes

VOLTAGE RANGE
3.3 to 300 Volts
1000mW

FEATURES

* For surface mount application
* Built-in strain relief
* Excellent clamping capability
* Low profile package
* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
* Typical I_R less than 1 A above 10V
* High temperature soldering guaranteed: 260°C / 10 seconds at terminals

GK xxx
7xxA



MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: Solderable per MIL-STD-202, method 208 guranteed
* Polarity: Color band denotes cathode end except Bidirectional
* Mounting position: Any
* Weight: 0.063 grams

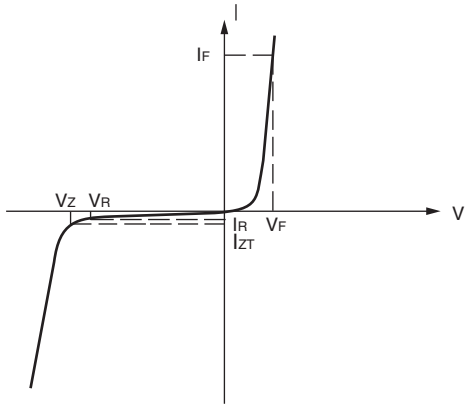
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Maximum steady state power dissipation at T_L = 75 °C (fig. 1) (1)	P_{tot}	1000	mW
Maximum steady state power dissipation at T_A = 25 °C (fig. 1) (2)	P_{tot}	500	mW
Maximum instantaneous forward voltage at 200 mA for all types (3)	V_F	1.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150	°C
Typical thermal resistance, junction to lead	$R_{\theta JL}$ (1)	50	°C/W
Typical thermal resistance, junction to ambient	$R_{\theta JA}$ (2)	250	°C/W

Notes
(1) Mounted on PCB with 5.0 mm x 5.0 mm copper pads attached to each terminal
(2) Mounted on minimum recommended pad layout
(3) Pulse test: 300 µs pulse width, 1 % duty cycle

ELECTRICAL CHARACTERISTICS	
SYMBOL	**PARAMETER**
V_Z	Reverse Zener voltage at I_{ZT}
I_{ZT}	Reverse current
Z_{ZT}	Maximum Zener impedance at I_{ZT}
I_{ZK}	Reverse current
Z_{ZK}	Maximum Zener impedance at I_{ZK}
I_R	Reverse leakage current at V_R
VR	Reverse voltage
I_F	Forward current
V_F	Forward voltage at I_F
I_{ZM}	Maximum DC Zener current



Zener Voltage Regulator

RATING AND CHARACTERISTIC CURVES

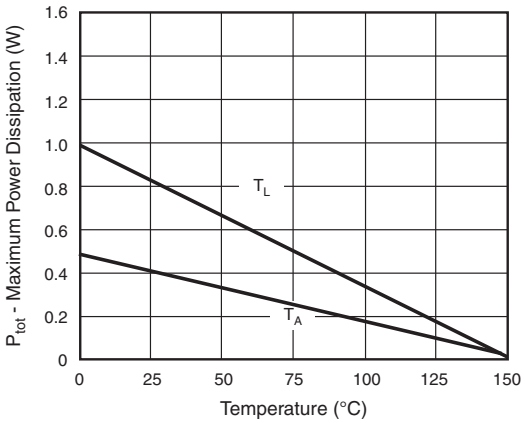


Fig. 1 - Steady State Power Derating

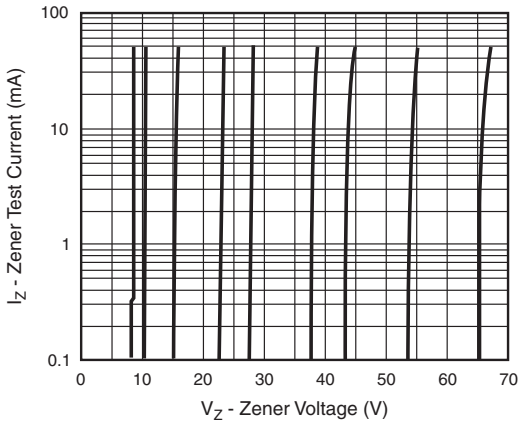


Fig. 3 - Typical Zener Voltage

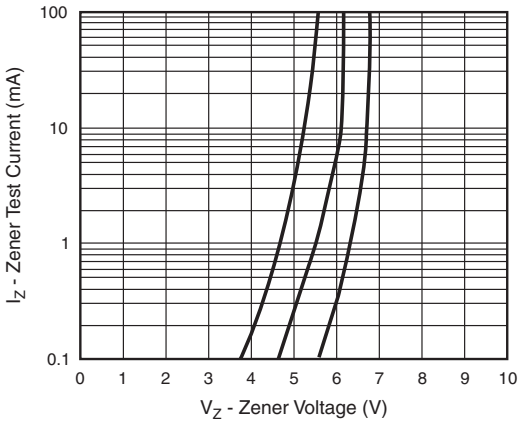


Fig. 2 - Typical Zener Voltage

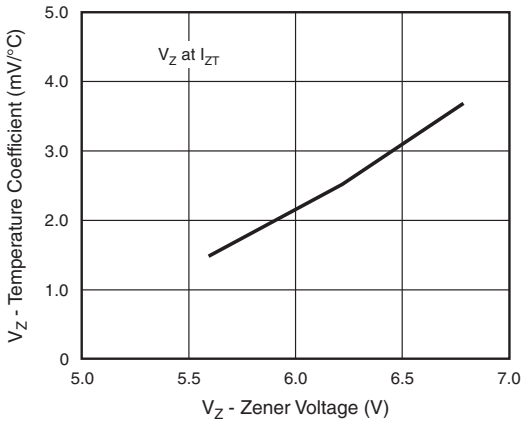


Fig. 4 - Typical Temperature Coefficients

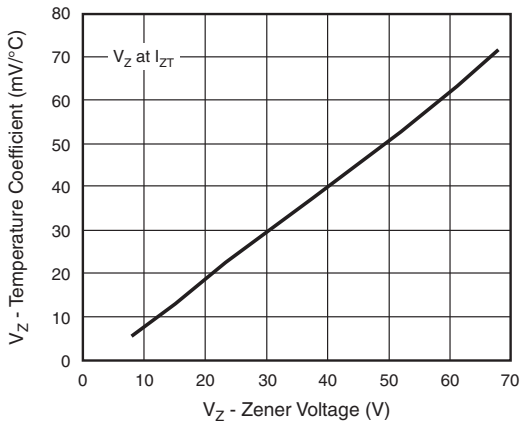


Fig. 5 - Typical Temperature Coefficients

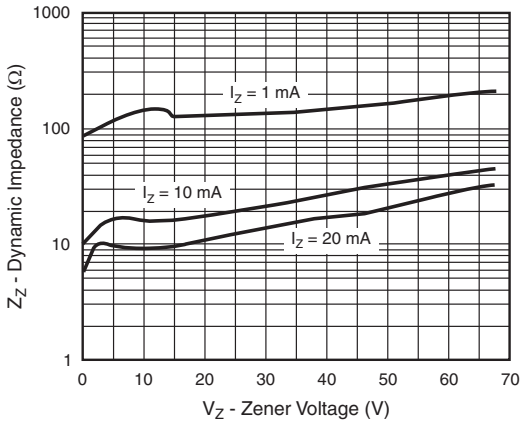


Fig. 6 - Typical Zener Impedance

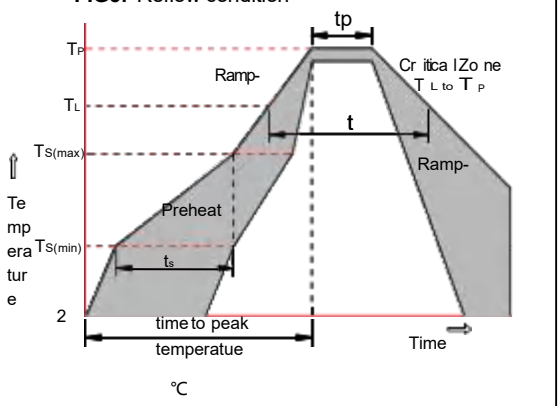
Characteristics at Ta = 25°C

Type	Marking	Zener Voltage Range (1)			I_{ZT}	Dynamic Impedance	Reverse Current		Admissible Zener Current
		V_{ZT} (at I_{ZT})				Z_{ZT} (at I_{ZT})	I_R	at V_R	
		Min (V)	Nom (V)	Max (V)	(mA)	Max (Ω)	Max (μA)	(V)	I_{ZM} (mA)
1SMA4728A	728A	3.10	3.3	3.50	75	10	100	1	285
1SMA4729A	729A	3.40	3.6	3.80	69	10	100	1	263
1SMA4730A	730A	3.70	3.9	4.10	64	9.0	50	1	243
1SMA4731A	731A	4.06	4.3	4.56	58	9.0	25	1	219
1SMA4732A	732A	4.50	4.7	4.93	53	8.0	10	1	203
1SMA4733A	733A	4.84	5.1	5.36	49	7.0	10	1	186
1SMA4734A	734A	5.32	5.6	5.92	45	5.0	10	2	170
1SMA4735A	735A	5.86	6.2	6.51	41	2.0	10	3	154
1SMA4736A	736A	6.46	6.8	7.18	37	3.5	10	4	140
1SMA4737A	737A	7.12	7.5	7.88	34	4.0	10	5	127
1SMA4738A	738A	7.79	8.2	8.67	31	4.5	10	6	116
1SMA4739A	739A	8.60	9.1	9.59	28	5.0	10	7	104
1SMA4740A	740A	9.50	10	10.5	25	7.0	10	7	95
1SMA4741A	741A	10.4	11	11.6	23	8.0	5	8	86
1SMA4742A	742A	11.4	12	12.6	21	9.0	5	9	79
1SMA4743A	743A	12.4	13	14.1	19	10	5	10	71
1SMA4744A	744A	13.8	15	15.8	17	14	5	11	63
1SMA4745A	745A	15.2	16	17.1	16	16	5	12	58
1SMA4746A	746A	16.8	18	19.2	14	20	5	13	52
1SMA4747A	747A	19.0	20	21.2	13	22	5	15	47
1SMA4748A	748A	20.8	22	23.3	12	23	5	17	43
1SMA4749A	749A	22.8	24	26.0	11	25	5	18	38
1SMA4750A	750A	25.3	27	28.9	9.5	35	5	21	35
1SMA4751A	751A	28.2	30	32.0	8.5	40	5	23	31
1SMA4752A	752A	31.3	33	34.9	7.5	45	5	25	28
1SMA4753A	753A	34.2	36	37.9	7.0	50	5	27	26
1SMA4754A	754A	37.2	39	41.5	6.5	60	5	30	24
1SMA4755A	755A	40.9	43	45.6	6.0	70	1	32	22
1SMA4756A	756A	44.9	47	49.8	5.5	80	1	35	20
1SMA4757A	757A	48.6	51	54.0	5.0	95	1	38	18
1SMA4758A	758A	53.6	56	58.8	4.5	110	1	42	17
1SMA4759A	759A	58.9	62	65.6	4.0	125	1	47	15
1SMA4760A	760A	64.6	68	71.7	3.7	150	1	52	14
1SMA4761A	761A	71.2	75	78.8	3.3	175	1	56	12
1SMA4762A	762A	77.9	82	87.0	3.0	200	1	62	11
1SMA4763A	763A	86.0	91	96.0	2.8	250	1	69	10
1SMA4764A	764A	95.0	100	105	2.5	350	1	76	9.5
1SMA4765A	765A	104	110	116	2.3	450	1	84	8.6
1SMA4766A	766A	114	120	127	2.0	550	1	91	7.8
1SMA4767A	767A	125	135	142	1.9	700	1	100	7.0
1SMA4768A	768A	140	150	157	1.7	900	1	110	6.3
1SMA4769A	769A	155	165	172	1.6	1100	1	120	5.8
1SMA4770A	770A	170	180	191	1.4	1200	1	135	5.2
1SMA4771A	771A	189	200	211	1.2	1400	1	150	4.7
1SMA4772A	772A	209	220	231	1.0	1600	1	165	4.3
1SMA4773A	773A	229	240	251	1.0	1800	1	180	3.9
1SMA4774A	774A	249	260	271	1.0	2000	1	190	3.7
1SMA4775A	775A	269	280	291	1.0	2100	1	205	3.4
1SMA4776A	776A	289	300	315	1.0	2300	1	230	3.1
1SMA4777A	777A	313	330	346	1.0	2500	1	250	2.8

Soldering parameters

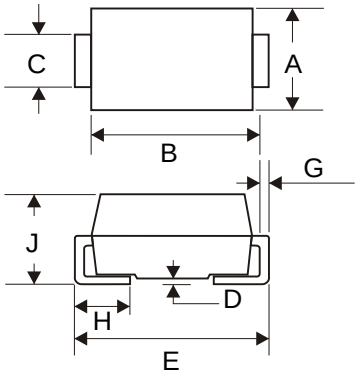
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition

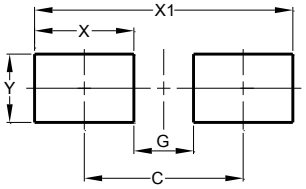


Package Dimensions & Suggested Pad Layout

SMA



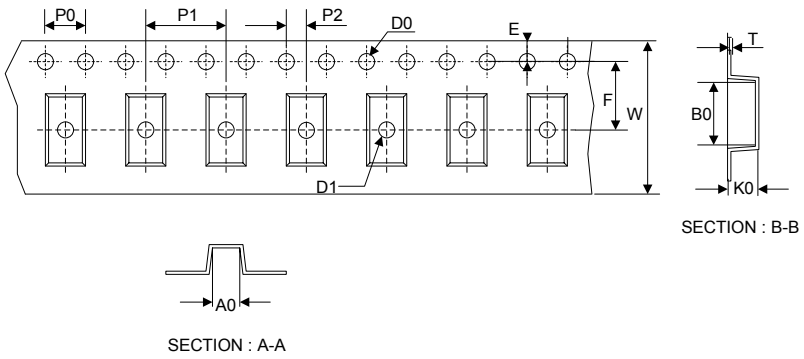
SMA		
Dim	**Min**	**Max**
A	2.40	2.79
B	3.99	4.50
C	1.32	1.47
D	-	0.20
E	4.93	5.28
G	0.15	0.31
H	0.76	1.52
J	1.98	2.29
All Dimensions in mm		



Dimensions	Value (in mm)
C	4.20
G	1.90
X	2.30
X1	6.50
Y	2.00

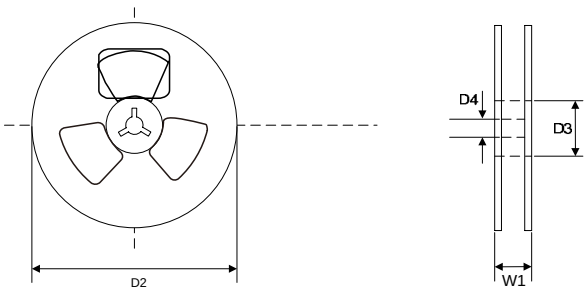
Tape & rell specification

Tape



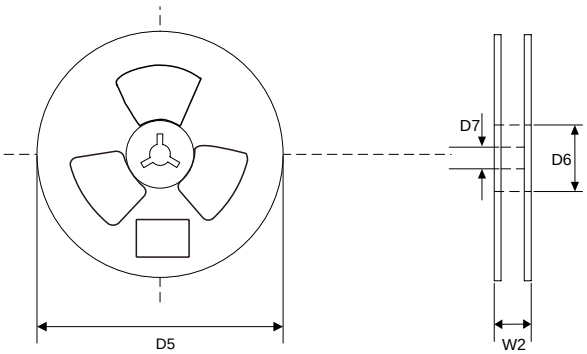
Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.60±0.20
D1	1.60±0.20
E	1.75±0.20
F	5.50±0.15
W	12.00±0.25
A0	2.75±0.20
B0	5.25±0.20
K0	2.45±0.25
T	0.20±0.10

7” Reel



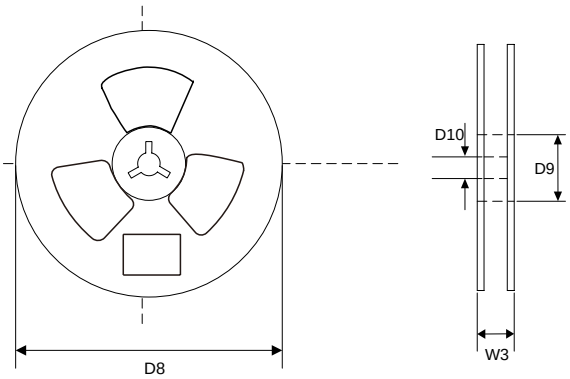
D2	176.0±5.0
D3	55.0Min.
D4	14.0±2.5
W1	14.0±2.5
Quantity: 2000PCS	

11” Reel



D5	276.0±5.0
D6	71.0Min.
D7	14.0±2.5
W2	14.0±2.5
Quantity: 5000PCS	

13” Reel



D8	330.0±5.0
D9	73.0Min.
D10	14.0±2.5
W3	14.0±2.5
Quantity: 5000PCS	