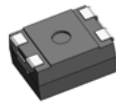


SMTJ

3500 A Transient voltage suppressor



Product features

- Low slope resistance
- Very low clamping voltage
- Excellent clamping capability
- Sharp breakdown voltage
- Glass passivated junction
- Snapback technology for superior clamping factor
- High temperature reflow soldering: +260 °C /40 s at terminal
- Plastic package meets UL 94 V-0 flammability rating
- UL 1449 recognized.
File No. : E340782 Guide VZCA2

Applications

- Consumer electronics
- Telecommunications
- Computing and servers
- Ethernet protection
- Industrial automation
- Networking Equipment

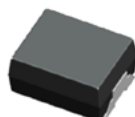
Environmental compliance and general specifications



Ordering part number

SMTJ 58 CA
 Family name _____
 V_R voltage _____
 ("-" indicates decimal point) _____
 Bi-/Uni-Directional (C=Bi) _____
 Voltage tolerance _____

PIN configuration



SMT-4

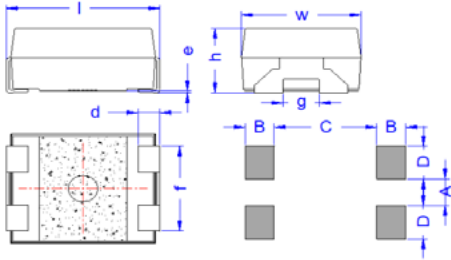

Powering Business Worldwide

Absolute maximum ratings

(+25 °C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating junction temperature range	T_J	-55 to +150	°C
Peak pulse current @ 8/20 μ s	I_{PP}	3500	A
Storage temperature range	T_{STG}	-55 to +150	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	15	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	65	°C/W

Mechanical parameters, pad layout- mm



	Millimeters		Inches	
Dimension	Minimum	Maximum	Minimum	Maximum
L	10.10	10.70	0.398	0.421
w	7.70	8.30	0.303	0.327
h	4.20	5.00	0.165	0.197
d	1.20	1.80	0.047	0.071
e	0	0.30	0	0.012
f	6.20	6.60	0.244	0.260
g	2.40	2.60	0.094	0.102
A		2.00		0.079
B	2.00		0.079	
C		7.00		0.276
D	2.50		0.098	

Part marking

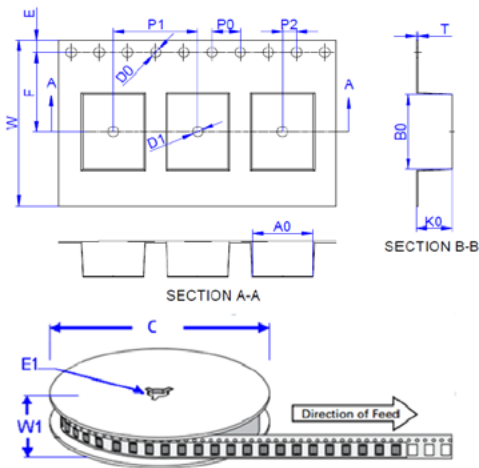


Part marking: xxxx = Date code
yyyyyy- Refer to marking designator listed in Electrical Characteristics table

Packaging information (mm)

Drawing not to scale.

Supplied in tape and reel packaging, 1,000 parts per 13" diameter reel (EIA-481 compliant)



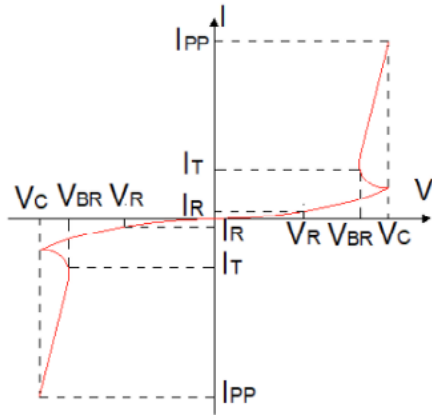
Dimensions	Millimeters	Inches
A0	8.50 ± 0.3	0.335 ± 0.012
B0	10.80 ± 0.3	0.425 ± 0.012
C	330.0	13.0
D0	1.50 ± 0.1	0.059 ± 0.004
D1	1.50 ± 0.1	0.059 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	11.50 ± 0.2	0.453 ± 0.008
K0	5.10 ± 0.1	0.201 ± 0.004
P0	4.00 ± 0.2	0.157 ± 0.008
P1	12.00 ± 0.2	0.472 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
T	0.30 ± 0.05	0.012 ± 0.002
W	24.0 ± 0.3	0.945 ± 0.012
W1	28.5 ± 2.0	1.122 ± 0.079

Electrical characteristics (+25 °C)

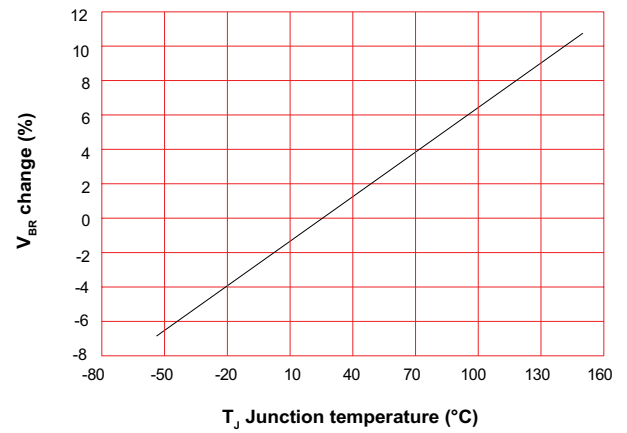
Part number	Marking	V_R (V)	$V_{BR} @ I_T$ min(V)	max(V)	I_T (mA)	$I_R @ V_R$ (μ A)	$V_C @ 8/20 \mu s$ 3000 A (V)	$V_C @ 8/20 \mu s$ 3500 A (V)	C_o typ (pf)
SMTJ58CAT	TJ58CA	58	64	70	10	5	110	120	3000
SMTJ66CAT	TJ66CA	66	72	80	10	5	120	130	2500
SMTJ76CAT	TJ76CA	76	85	95	10	5	140	150	2200
SMTJ86CAT	TJ86CA	86	95	105	10	5	157	170	1900

Ratings and V-I characteristic curves (+25 °C unless otherwise noted)

V-I curve characteristics
(Bi-directional with negative resistance)



Typical V_{BR} vs. junction temperature



Surge waveform: 8/20 μ s

V_R : Stand-off voltage – Maximum voltage that can be applied

V_{BR} : Breakdown voltage

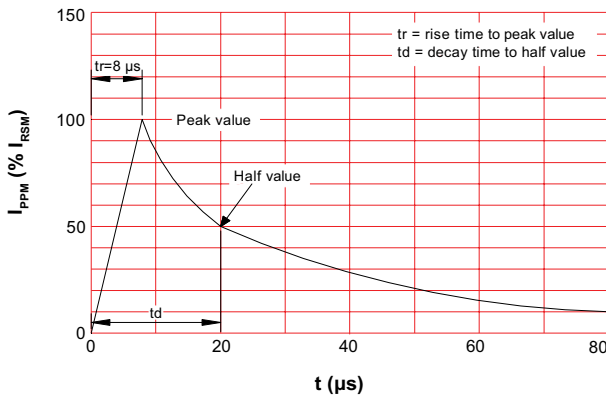
V_C : Clamping voltage – Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse leakage current

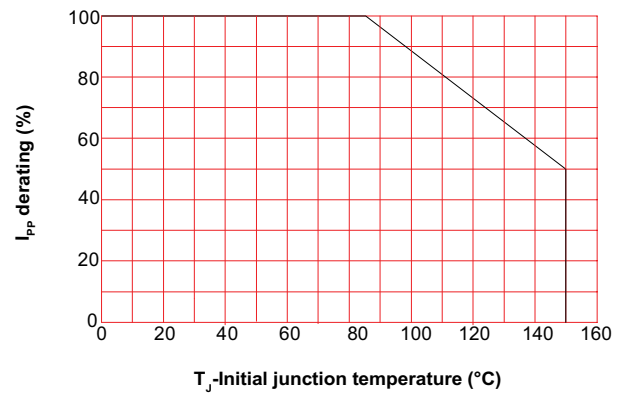
I_T : Test current

V_F : Forward voltage drop for Uni-directional TVS diode

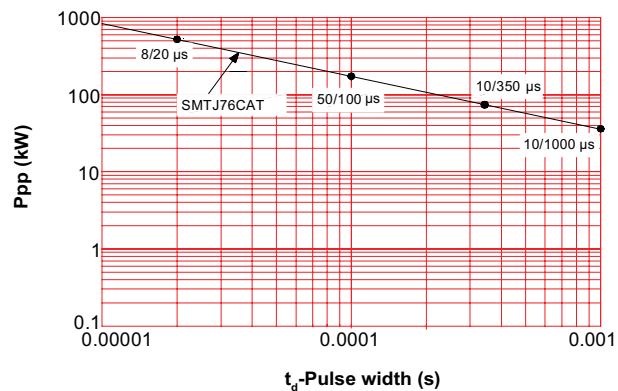
Pulse waveform



Pulse derating curve



Peak pulse power rating curve



Solder reflow profile

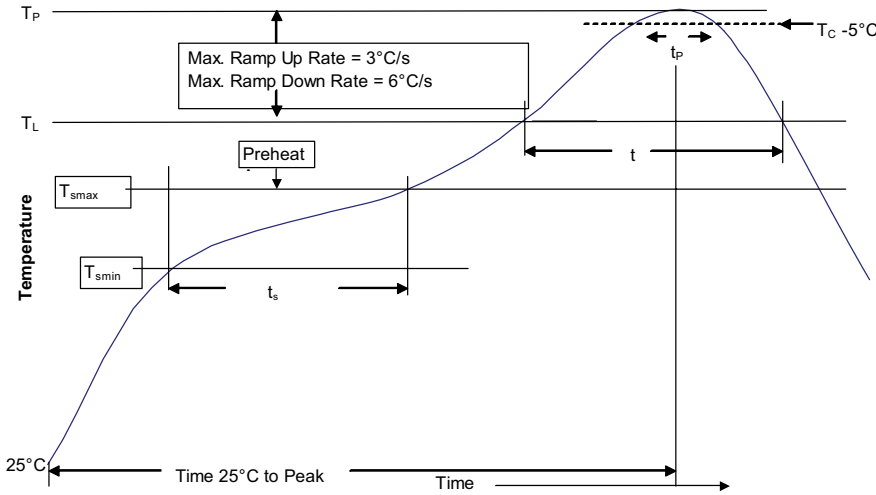


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_C)

Package thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat and soak		
• Temperature min. (T_{smin})	100 °C	150 °C
• Temperature max. (T_{smax})	150 °C	200 °C
• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-180 seconds
Ramp up rate T_L to T_p	3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T_L)	183 °C	217 °C
Time (t_L) maintained above T_L	60-150 seconds	60-150 seconds
Peak package body temperature (T_p)*	Table 1	Table 2
Time (t_p)* within 5 °C of the specified classification temperature (T_C)	20 seconds*	40 seconds*
Ramp-down rate (T_p to T_L)	6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

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