



Automotive Protection Surface Mount Transient Voltage Suppressors

Feature

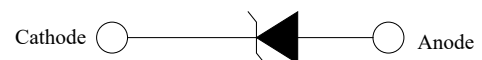
- Low leakage current
- High surge capability
- AEC-Q101 qualified
- Meets ISO16750-2 surge specification(varied by test condition)
- Meets MSL 1, per J-STD-020, LF maximum peak of 245°C
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Junction passivation optimized design passivated anisotropic rectifier technology
- $T_J=175^{\circ}\text{C}$ capability suitable for high reliability and automotive requirement



4032



Bi-directional



Uni-directional

Mechanical Data

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

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000 μs waveform	P_{PP}	6600	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$
Typical thermal resistance, junction to case	$R_{\theta JC}$	9.38	$^{\circ}\text{C/W}$
Typical thermal resistance, junction to lead	$R_{\theta JL}$	18.34	$^{\circ}\text{C/W}$



Ratings and V-I Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG.1: V- I curve characteristics (Bi-directional)

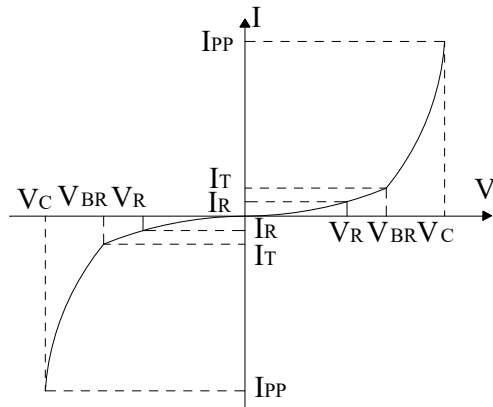


FIG.2: Pulse waveform

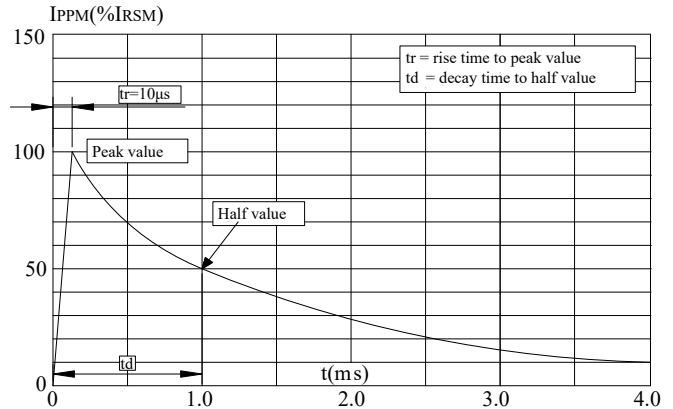


FIG.3: ISO16750-2 test pulse 5a

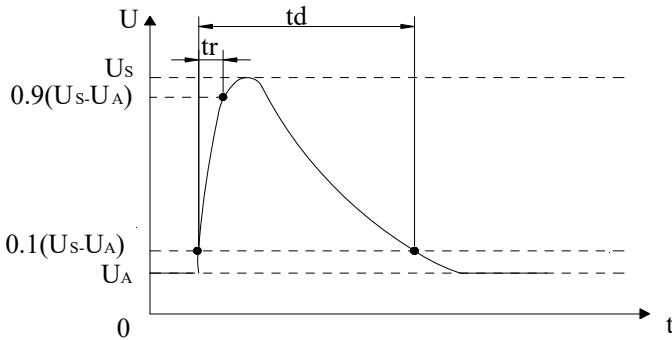
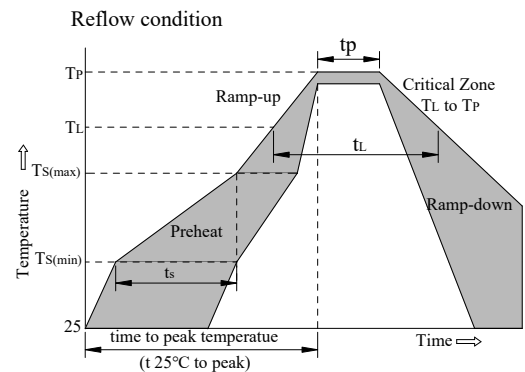


FIG.4: Parameters for test pulse 5a

Parameter	12V system	24V system
U_S	79~101V	151~202V
R_i	0.5~4Ω	1~8Ω
t_d	40~400ms	100~350ms
t_r	5~10ms	5~10ms

Soldering Parameters

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+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/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C





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

Part Number		Marking Code		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni	Bi	Uni	Bi	(V)	max(μA)	min(V)	max(V)	(mA)	(V)	(A)
SMTJ14AT	SMTJ14CAT	8S14	8S14C	14	5	15.6	17.2	5	23.2	284
SMTJ15AT	SMTJ15CAT	8S15	8S15C	15	5	16.7	18.5	5	24.4	270
SMTJ16AT	SMTJ16CAT	8S16	8S16C	16	5	17.8	19.7	5	26.0	253
SMTJ17AT	SMTJ17CAT	8S17	8S17C	17	5	18.9	20.9	5	27.6	239
SMTJ18AT	SMTJ18CAT	8S18	8S18C	18	5	20.0	22.1	5	29.2	226
SMTJ20AT	SMTJ20CAT	8S20	8S20C	20	5	22.2	24.5	5	32.4	204
SMTJ22AT	SMTJ22CAT	8S22	8S22C	22	5	24.4	26.9	5	35.5	186
SMTJ24AT	SMTJ24CAT	8S24	8S24C	24	5	26.7	29.5	5	38.9	170
SMTJ26AT	SMTJ26CAT	8S26	8S26C	26	5	28.9	31.9	5	42.1	157
SMTJ27AT	SMTJ27CAT	8S27	8S27C	27	5	30.0	33.2	5	43.8	150
SMTJ28AT	SMTJ28CAT	8S28	8S28C	28	5	31.1	34.4	5	45.4	145
SMTJ30AT	SMTJ30CAT	8S30	8S30C	30	5	33.3	36.8	5	48.4	136
SMTJ33AT	SMTJ33CAT	8S33	8S33C	33	5	36.7	40.6	5	53.3	124
SMTJ36AT	SMTJ36CAT	8S36	8S36C	36	5	40.0	44.2	5	58.1	114
SMTJ40AT	SMTJ40CAT	8S40	8S40C	40	5	44.4	49.1	5	64.5	102
SMTJ43AT	SMTJ43CAT	8S43	8S43C	43	5	47.8	52.8	5	69.4	95.1

① Surge waveform: 10/1000 μs

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

V_{BR} : Breakdown voltage

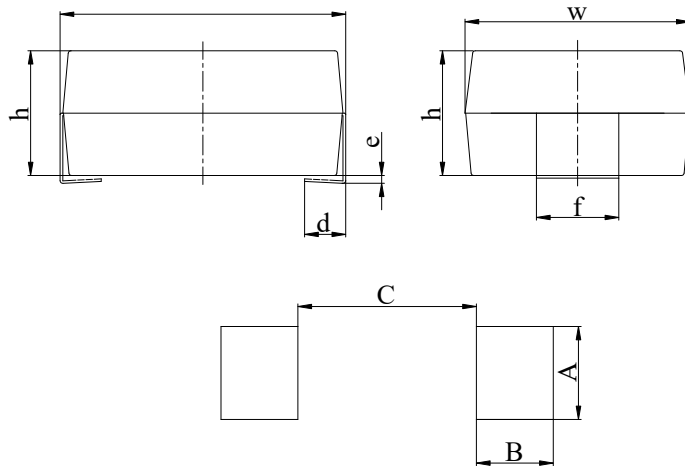
V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse leakage current

I_T : Test current



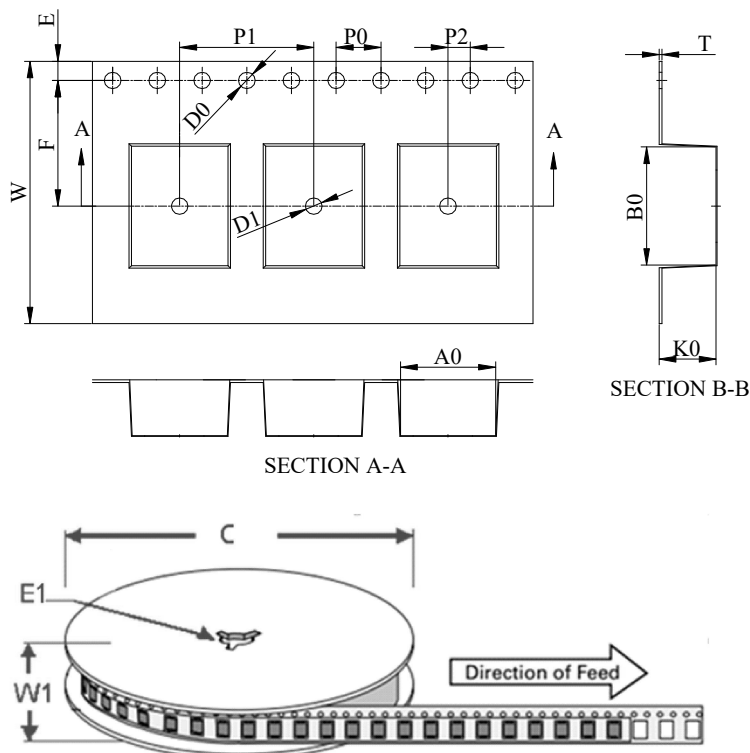
4032 Package Outline Dimensions



Recommended solder pad layout

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
l	10.20		11.00	0.402		0.433
w	7.90		8.50	0.311		0.335
h	4.40		5.00	0.173		0.197
d	1.20		1.80	0.047		0.071
e	0		0.30	0		0.012
f	2.70		3.30	0.106		0.130
A		3.50			0.138	
B		2.80			0.110	
C		6.50			0.256	

4032 Tape and Reel Specification



Ref.	Dimensions	
	Millimeters	Inches
A0	8.50±0.10	0.335±0.004
B0	10.80±0.10	0.425±0.004
C	330.0	13.0
D0	1.50±0.10	0.059±0.004
D1	1.50±0.10	0.059±0.004
E	1.75±0.10	0.069±0.004
E1	13.3±0.3	0.524±0.012
F	11.50±0.10	0.453±0.004
K0	5.10±0.10	0.201±0.004
P0	4.00±0.10	0.157±0.004
P1	12.00±0.10	0.472±0.004
P2	2.00±0.10	0.079±0.004
T	0.30±0.05	0.012±0.002
W	24.00±0.30	0.945±0.012
W1	28.5±2.0	1.122±0.079

Part No.	Package	Reel (pcs)	Per Carton (pcs)	Description
SMTJ Series	4032	1000	4000	13 inch reel pack