



15BJxx(C)AH Series 1500W Transient Voltage Suppressor

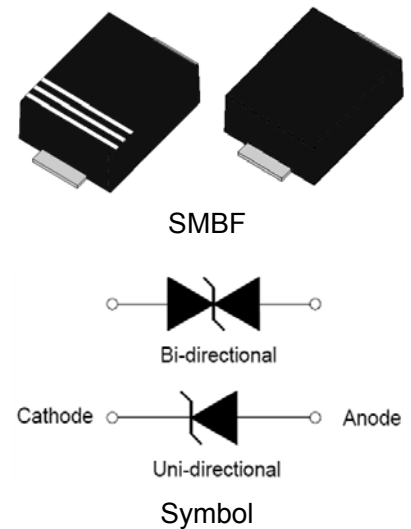
Rev.1.0

DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

FEATURES:

- ✧ Low profile package.
- ✧ Low inductance.
- ✧ Excellent clamping capability.
- ✧ 1500W peak pulse power capability at 10/1000 μ s waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature to reflow soldering: 260 $^{\circ}$ C/40s at terminals.
- ✧ Plastic package has underwriters laboratory flammability 94V-0.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260 $^{\circ}$ C.
- ✧ Terminal: solder plated, solderable per J-STD-002.
- ✧ For surface mounted applications in order to optimize board space.
- ✧ High reliability application and automotive grade (AEC-Q101 qualified).



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}$ C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage and operating junction temperature range	T_{STG}/T_J	-55 to +150	$^{\circ}$ C
Peak pulse power dissipation at 10/1000 μ s waveform	P_{PP}	1500	W
Steady state power dissipation at $T_L=75^{\circ}$ C	$P_{M(AV)}$	5.0	W
Maximum instantaneous forward voltage at 50A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3ms single half sine wave (Note 1)	I_{FSM}	200	A

Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

MARKING



BDE : Device Marking Code
1938: the 38th week, 2019

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
15BJ5.0AH	15BJ5.0CAH	GDE	BDE	5.0	300	6.40	7.00	10	9.2	163.0
15BJ6.0AH	15BJ6.0CAH	GDG	BDG	6.0	250	6.67	7.37	10	10.3	145.6
15BJ6.5AH	15BJ6.5CAH	GDK	BDK	6.5	150	7.22	7.98	10	11.2	134.0
15BJ7.0AH	15BJ7.0CAH	GDM	BDM	7.0	100	7.78	8.60	10	12.0	125.0
15BJ7.5AH	15BJ7.5CAH	GDP	BDP	7.5	50	8.33	9.21	1	12.9	116.3
15BJ8.0AH	15BJ8.0CAH	GDR	BDR	8.0	30	8.89	9.83	1	13.6	110.3
15BJ8.5AH	15BJ8.5CAH	GDT	BDT	8.5	20	9.44	10.40	1	14.4	104.2
15BJ9.0AH	15BJ9.0CAH	GDV	BDV	9.0	10	10.00	11.10	1	15.4	97.4

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

ORDERING INFORMATION

1500W SMBF Series	15BJ	xx	C	A	H
	V_R Voltage		C: Bi-directional	5% V_{BR} Voltage tolerance	For AEC-Q101

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

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

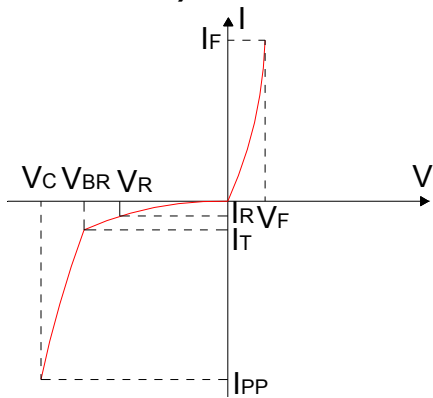


FIG.2:V- I curve characteristics (Bi-directional)

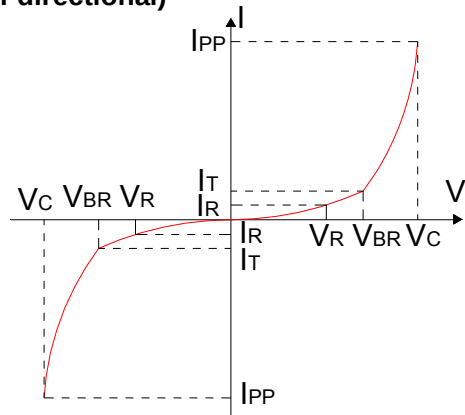


FIG.3: Pulse waveform

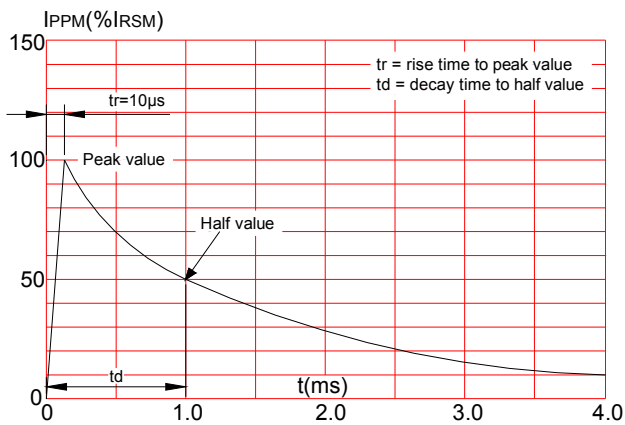
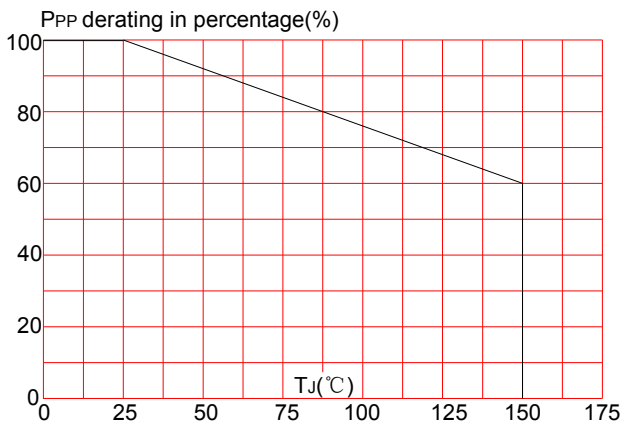
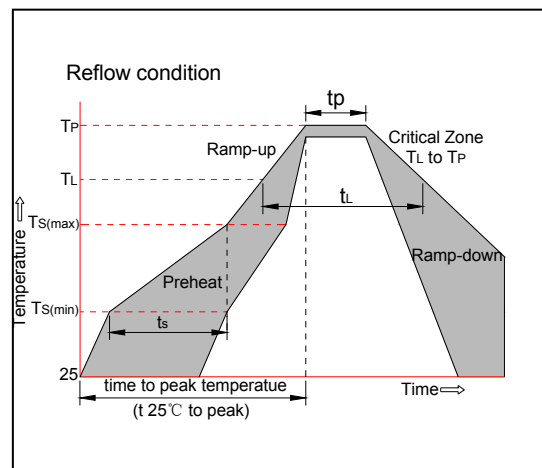


FIG.4: Pulse derating curve

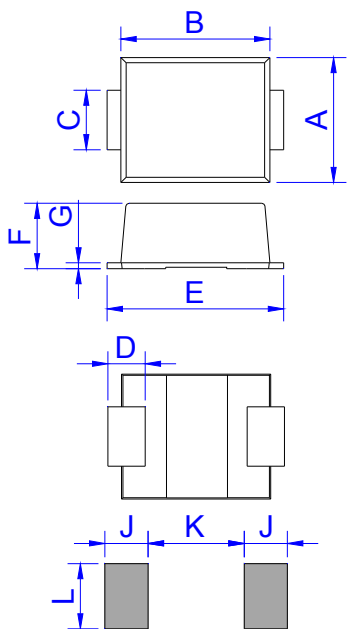


SOLDERING PARAMETERS

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) (ts)	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



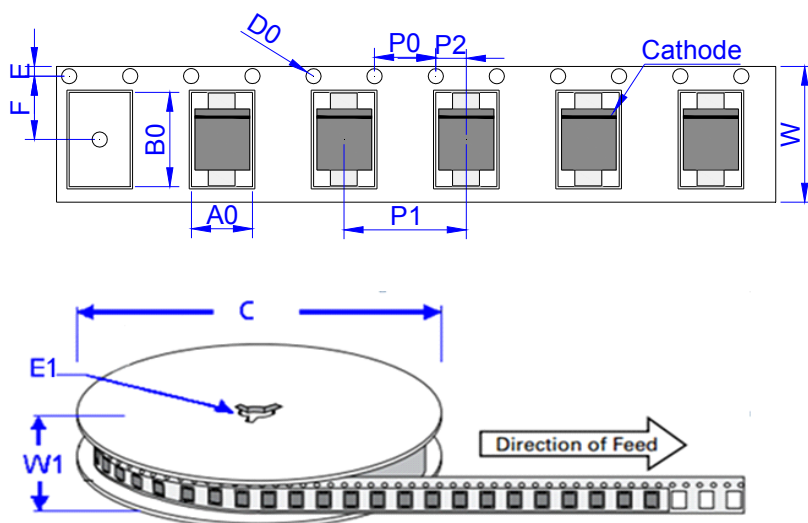
PACKAGE MECHANICAL DATA



SMBF

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.90	4.50	0.154	0.177
B	4.65	5.15	0.183	0.203
C	1.85	2.15	0.073	0.085
D	0.60		0.024	
E	5.60	6.00	0.220	0.236
F	2.05	2.35	0.081	0.093
G	0.12	0.28	0.005	0.011
J	2.00		0.079	
K		3.20		0.126
L	2.30		0.091	

TAPE AND REEL SPECIFICATION-SMBF



Ref.	Dimensions	
	Millimeters	Inches
A0	4.50±0.3	0.177 ± 0.012
B0	6.10±0.3	0.240 ± 0.012
C	330.0	13.0
D0	1.55±0.1	0.061 ± 0.004
E	1.75±0.2	0.069 ± 0.008
E1	13.3±0.3	0.524± 0.012
F	5.5±0.2	0.217 ± 0.008
P0	4.00±0.2	0.157 ± 0.008
P1	8.00±0.2	0.315 ± 0.008
P2	2.00±0.2	0.079 ± 0.008
W	12.0±0.2	0.472 ± 0.008
W1	15.7±2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
15BJxxAH/CAH	0.13	3,000	48,000	13 inch reel pack

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