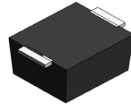


15BJ

Automotive grade 1500 W Transient voltage suppressor



Product features

- Automotive grade (AEC-Q101 qualified)
- Low profile SMD package
- Excellent clamping capability
- High reliability application
- 1500 W peak pulse power capability at 10/1000 μ s waveform
- Typical I_R less than 1 μ A above 11 V
- Fast response time: typically less than 1.0 ps from 0 V to V_{BR} minimum
- High temperature reflow soldering: +260 °C /40 s at terminal
- Plastic package meets UL 94 V-0 flammability rating
- Meets moisture sensitivity level (MSL) level 1
- Terminal: tin plated, solderable per J-STD-002
- For surface mounted applications in order to optimize board space
- UL 497B recognized.
File No. : E198449 Guide QVGO2

Applications

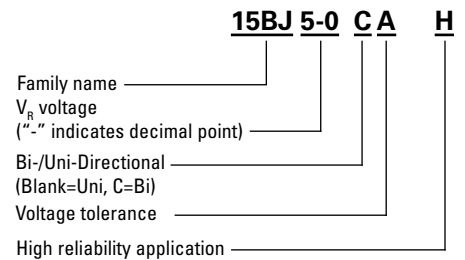
- Automotive chassis and safety systems
- Advanced driver assistance systems (ADAS)
- Communication and infotainment systems
- Network systems and body electronics
- Power Train controls
- xEV and battery systems

Environmental compliance and general specifications

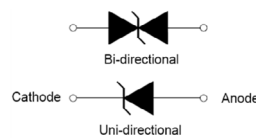
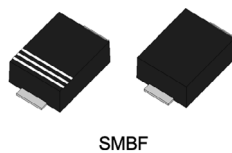
- AEC-Q101 qualified



Ordering part number



PIN configuration



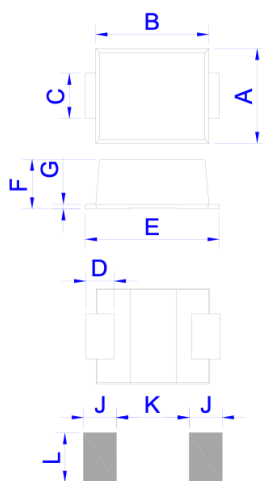
Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Storage operating junction temperature range	T_{STG}/T_J	-55 to +150	°C
Steady state power dissipation at $T_L = +75$ °C	$P_{M(AV)}$	5.0	W
Peak pulse power dissipation on 10/1000 μ s waveform	P_{PP}	1500	W
Maximum instantaneous forward voltage at 100 A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3 ms single half sine wave ¹	I_{FSM}	200	A

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

Mechanical parameters, pad layout- mm/inches



Dimension	Millimeters		Inches	
	Minimum	Maximum	Minimum	Maximum
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	

Part marking

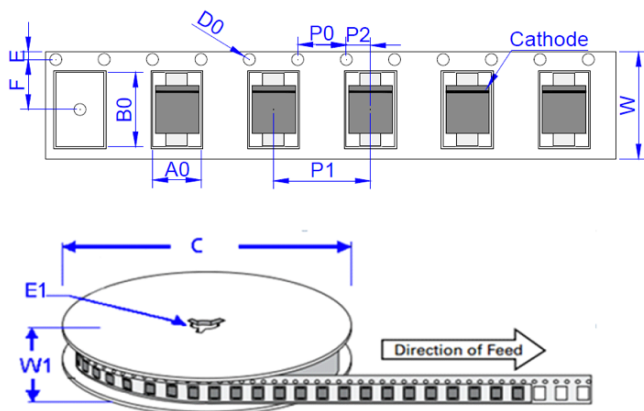


Cathode band (uni-polar only)
Part marking:
xxxx = Date code
yyy- Refer to marking designator listed in Electrical characteristics table

Packaging information- mm/inches

Drawing not to scale.

Supplied in tape and reel packaging, 3,000 parts per 13" diameter reel (EIA-481 compliant)



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
E1	1.75 ± 0.2	0.069 ± 0.008
F	5.50 ± 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

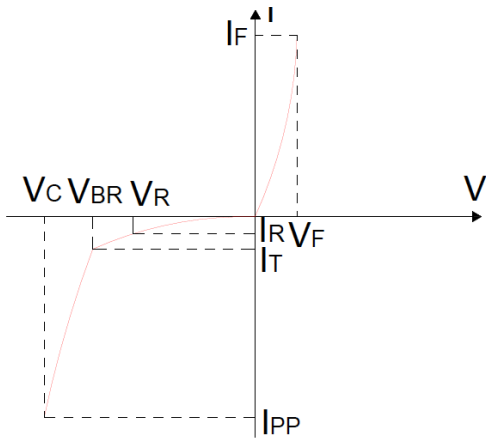
15BJ
Automotive grade 1500 W Transient voltage suppressor

Electrical characteristics (+25 °C)

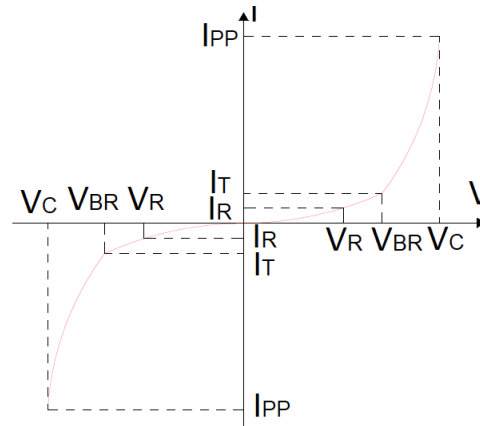
Part number		Marking		V_R	$I_R @ V_R$	$V_{BR} @ I_T$		I_T	$V_C @ I_{PP}$	I_{PP}
Uni-polar	Bi-polar	Uni	Bi	(V)	(μ A)	min (V)	max (V)	(mA)	max (V)	(A)
15BJ5-0AH	15BJ5-0CAH	GDE	BDE	5	300	6.4	7	10	9.2	163
15BJ6-0AH	15BJ6-0CAH	GDG	BDG	6	250	6.67	7.37	10	10.3	145.6
15BJ6-5AH	15BJ6-5CAH	GDK	BDK	6.5	150	7.22	7.98	10	11.2	134
15BJ7-0AH	15BJ7-0CAH	GDM	BDM	7	100	7.78	8.6	10	12	125
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	30	8.89	9.83	1	13.6	110.3
15BJ8-5AH	15BJ8-5CAH	GDT	BDT	8.5	20	9.44	10.4	1	14.4	104.2
15BJ9-0AH	15BJ9-0CAH	GDV	BDV	9	10	10	11.1	1	15.4	97.4
15BJ10AH	15BJ10CAH	GDX	BDX	10	5	11.1	12.3	1	17	88.2
15BJ11AH	15BJ11CAH	GDZ	BDZ	11	2	12.2	13.5	1	18.2	82.4
15BJ12AH	15BJ12CAH	GEE	BEE	12	1	13.3	14.7	1	19.9	75.4
15BJ13AH	15BJ13CAH	GEG	BEG	13	1	14.4	15.9	1	21.5	69.8
15BJ14AH	15BJ14CAH	GEK	BEK	14	1	15.6	17.2	1	23.2	64.7
15BJ15AH	15BJ15CAH	GEM	BEM	15	1	16.7	18.5	1	24.4	61.5
15BJ16AH	15BJ16CAH	GEP	BEP	16	1	17.8	19.7	1	26	57.7
15BJ17AH	15BJ17CAH	GER	BER	17	1	18.9	20.9	1	27.6	54.4
15BJ18AH	15BJ18CAH	GET	BET	18	1	20	22.1	1	29.2	51.4
15BJ20AH	15BJ20CAH	GEV	BEV	20	1	22.2	24.5	1	32.4	46.3
15BJ22AH	15BJ22CAH	GEX	BEX	22	1	24.4	26.9	1	35.5	42.3
15BJ24AH	15BJ24CAH	GEZ	BEZ	24	1	26.7	29.5	1	38.9	38.6
15BJ26AH	15BJ26CAH	GFE	BFE	26	1	28.9	31.9	1	42.1	35.6
15BJ28AH	15BJ28CAH	GFG	BFG	28	1	31.1	34.4	1	45.4	33.1
15BJ30AH	15BJ30CAH	GFK	BFK	30	1	33.3	36.8	1	48.4	31
15BJ33AH	15BJ33CAH	GFM	BFM	33	1	36.7	40.6	1	53.3	28.2
15BJ36AH	15BJ36CAH	GFP	BFP	36	1	40	44.2	1	58.1	25.8
15BJ40AH	15BJ40CAH	GFR	BFR	40	1	44.4	49.1	1	64.5	23.3
15BJ43AH	15BJ43CAH	GFT	BFT	43	1	47.8	52.8	1	69.4	21.6
15BJ45AH	15BJ45CAH	GFV	BFV	45	1	50	55.3	1	72.7	20.6
15BJ48AH	15BJ48CAH	GFX	BFX	48	1	53.3	58.9	1	77.4	19.4
15BJ51AH	15BJ51CAH	GFZ	BFZ	51	1	56.7	62.7	1	82.4	18.2
15BJ54AH	15BJ54CAH	GGE	BGE	54	1	60	66.3	1	87.1	17.2
15BJ58AH	15BJ58CAH	GGG	BGG	58	1	64.4	71.2	1	93.6	16.1
15BJ60AH	15BJ60CAH	GGK	BGK	60	1	66.7	73.7	1	96.8	15.5
15BJ64AH	15BJ64CAH	GGM	BGM	64	1	71.1	78.6	1	103	14.6
15BJ70AH	15BJ70CAH	GGP	BGP	70	1	77.8	86	1	113	13.3
15BJ75AH	15BJ75CAH	GGR	BGR	75	1	83.3	92.1	1	121	12.4
15BJ78AH	15BJ78CAH	GGT	BGT	78	1	86.7	95.8	1	126	11.9
15BJ85AH	15BJ85CAH	GGV	BGV	85	1	94.4	104	1	137	11
15BJ90AH	15BJ90CAH	GGX	BGX	90	1	100	111	1	146	10.3
15BJ100AH	15BJ100CAH	GGZ	BGZ	100	1	111	123	1	162	9.3
15BJ110AH	15BJ110CAH	GHE	BHE	110	1	122	135	1	177	8.5
15BJ120AH	15BJ120CAH	GHG	BHG	120	1	133	147	1	193	7.8
15BJ130AH	15BJ130CAH	GHK	BHK	130	1	144	159	1	209	7.2
15BJ150AH	15BJ150CAH	GHM	BHM	150	1	167	185	1	243	6.2
15BJ160AH	15BJ160CAH	GHP	BHP	160	1	178	197	1	259	5.8
15BJ170AH	15BJ170CAH	GHR	BHR	170	1	189	209	1	275	5.5
15BJ180AH	15BJ180CAH	GHT	BHT	180	1	201	222	1	292	5.2
15BJ190AH	15BJ190CAH	GHU	BHU	190	1	211	234	1	307	4.9
15BJ200AH	15BJ200CAH	GHV	BHV	200	1	224	247	1	324	4.7

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

V- I curve characteristics (Uni-directional)



V- I curve characteristics (Bi-directional)



Surge waveform: 10/1000 μ s

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

V_{BR} : Breakdown voltage

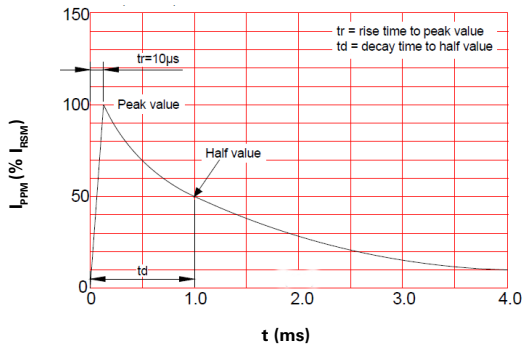
V_C : Clamping voltage – Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse leakage current

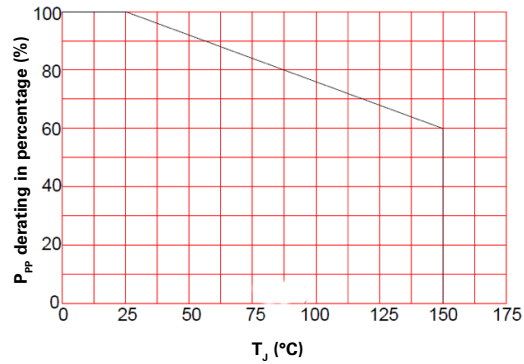
I_T : Test current

V_F : Forward voltage drop for Uni-directional

Pulse waveform



Pulse derating 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 (+0, -5 °C)
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.

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

© 2021 Eaton
All Rights Reserved
Printed in USA
Publication No. ELX1059 BU-ELX21059
June 2021

Eaton is a registered trademark.
All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.

