



JRB-T Series 6600W TVS

Rev.2.1

DESCRIPTION:

The JRB-T series of high current uni/bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer uni/bi-directional port protection from 15 volts to 43 volts. They provide a clamping voltage lower than the avalanche voltage. Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.



R-6/P-600



Bi-directional



Uni-directional

Symbol

FEATURES:

- ✧ Low incremental surge resistance.
- ✧ Excellent clamping capability.
- ✧ JEDEC R-6/P-600 molded plastic.
- ✧ Color band denoted cathode except bidirectional.
- ✧ High temperature wave soldering: 265°C/10s at terminals.
- ✧ Glass passivated chip junction in R-6/P-600 package.
- ✧ 6600W peak pulse power capability at 10×1000µs waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ AEC-Q101 qualified.

IEC COMPATIBILITY

- ✧ ISO16750-2 P5A 12V system (DC14V 87V/1Ω/400ms).
- ✧ ISO16750-2 P5A 24V system (DC28V 174V/4Ω/350ms).

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

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000µs waveform	P_{PP}	6600	W
Maximum instantaneous forward voltage at 100A for unidirectional only	V_F	3.5	V
Steady state power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	8.0	W

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

Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	600	A
Typical thermal resistance junction to lead	$R_{\theta JL}$	8.0	$^{\circ}\text{C}/\text{W}$
Typical thermal resistance junction to ambient	$R_{\theta JA}$	40	$^{\circ}\text{C}/\text{W}$

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

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
JRB-T15A	JRB-T15CA	15	5	16.7	18.5	5	24.4	270.5
JRB-T16A	JRB-T16CA	16	5	17.8	19.7	5	26.0	253.8
JRB-T18A	JRB-T18CA	18	5	20.0	22.1	5	29.2	226.0
JRB-T20A	JRB-T20CA	20	5	22.2	24.5	5	32.4	203.7
JRB-T22A	JRB-T22CA	22	5	24.4	26.9	5	35.5	186.0
JRB-T24A	JRB-T24CA	24	5	26.7	29.5	5	38.9	169.7
JRB-T26A	JRB-T26CA	26	5	28.9	31.9	5	42.1	156.8
JRB-T28A	JRB-T28CA	28	5	31.1	34.4	5	45.4	145.4
JRB-T30A	JRB-T30CA	30	5	33.3	36.8	5	48.4	136.4
JRB-T33A	JRB-T33CA	33	5	36.7	40.6	5	53.3	123.8
JRB-T36A	JRB-T36CA	36	5	40.0	44.2	5	58.1	113.6
JRB-T40A	JRB-T40CA	40	5	44.4	49.1	5	64.5	102.3
JRB-T43A	JRB-T43CA	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

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

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

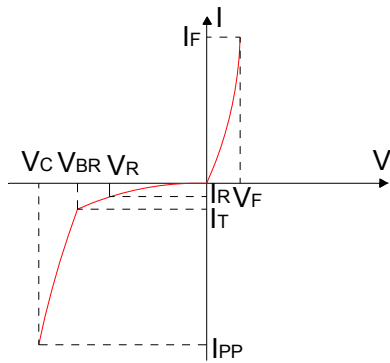


FIG.2:V- I curve characteristics (Bi-directional)

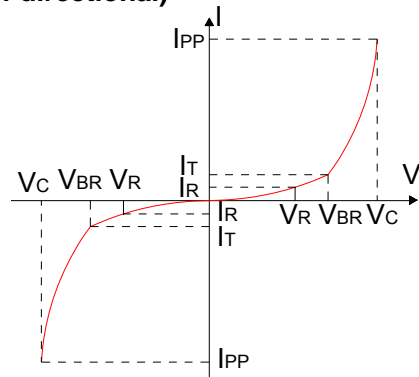


FIG.3: Pulse waveform

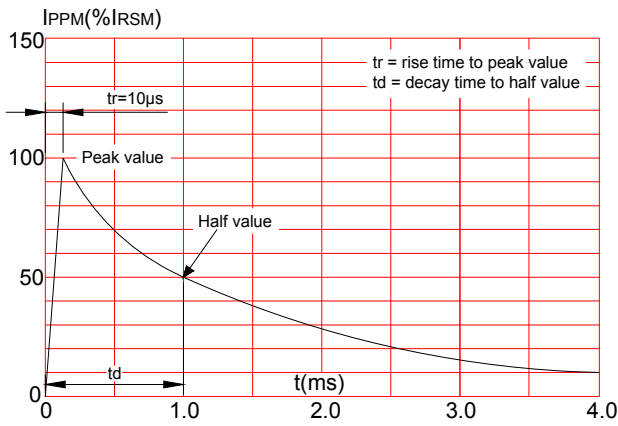
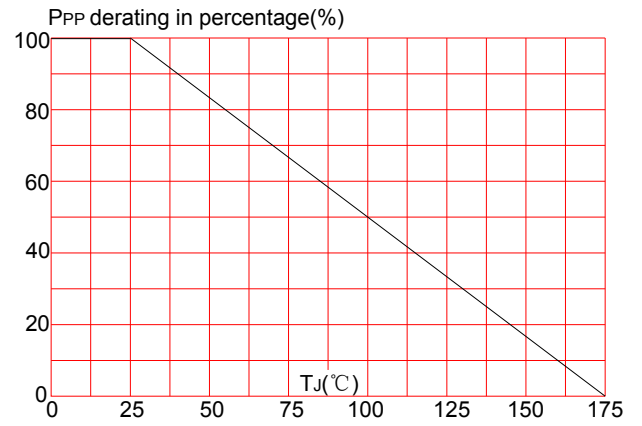
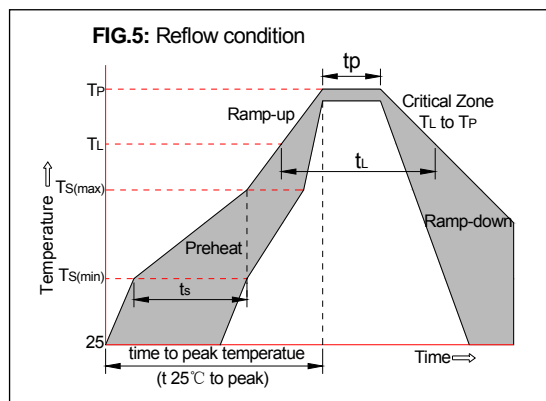


FIG.4: Pulse derating curve



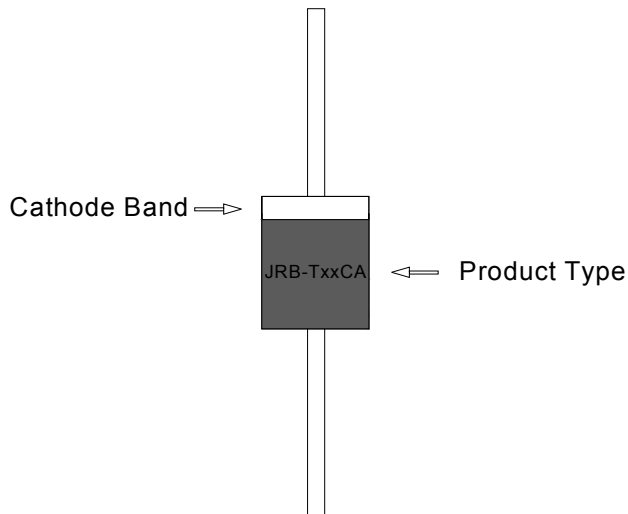
SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
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



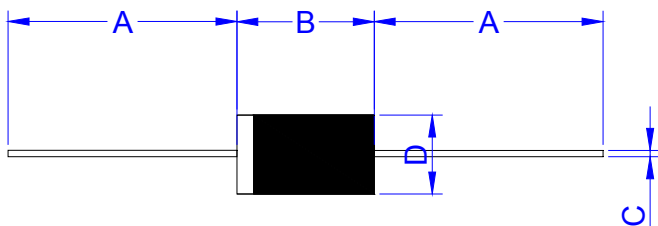
Flow/Wave Soldering(Solder Dipping)	
Peak temperature	265°C
Dipping time	10 sec.
Soldering	1 time

MARKING & ORDERING INFORMATION



- JRB-T xx C A
 (1) (2) (3) (4)
- (1)Series:6600 watts series
 - (2)Reverse Stand-off Voltage
 - (3)Bi-directional
 - (4)5% V_{BR} Voltage tolerance

PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	1.000	-	25.40	-
B	0.339	0.370	8.60	9.40
C	0.047	0.055	1.20	1.40
D	0.339	0.358	8.60	9.10

Part Number	UNIT WEIGHT (g/PCS) typ.	Case Type	Quantity	Packing Option
JRB-TxxA/CA	2.76	R-6/P-600	300	Box

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 2.1st version which is made in 17-May-2018. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright©2018 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.