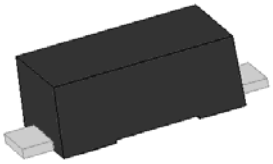
JEBxxD1F Bi-directional TVS Diode Rev.1.1

DESCRIPTION:

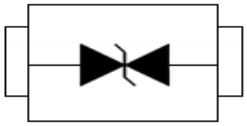
The JEBxxD1F series are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

FEATURES

- ✧ 4800W to 9500W Peak pulse power dissipation on 1.2/50μs-8/20μs@2Ω waveform
- ✧ For small surface mounted applications
- ✧ Response time is typically < 1ns
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant



SOD-123FL



PIN Configuration

MAIN APPLICATIONS

- ✧ Cell phone handsets and accessories
- ✧ Personal digital assistants (PDA's)
- ✧ Notebooks, desktops, and servers
- ✧ Portable instrumentation

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ✧ IEC61000-4-5 (Lightning) 300A to 350A (1.2/50μs-8/20μs@2Ω)

MECHANICAL CHARACTERISTICS

- ✧ SOD-123FL package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Typical weight: 0.0168g/pcs
- ✧ Lead finish: lead free

ABSOLUTE MAXIMUM RATINGS(T_A=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 1.2/50μs-8/20μs@2Ω waveform	P_{PP}	4800 to 9500	W
Peak pulse current on 1.2/50μs-8/20μs@2Ω waveform	I_{PP}	300 to 350	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-55 to +150	℃
Storage temperature range	T_{STG}	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃)

Part Number	Marking	V_R	I_R@V_R	V_{BR}@I_T		I_T	Co①	P_{PP}②	V_C@I_{PP}	I_{PP}③
Bi-Polar	Bi	V	μA	min(V)	max(V)	mA	typ (pF)	W	max(V)	A
JEB07D1F	07BF	7	1.0	8.0	10.0	1	1100	4800	16.0	300
JEB12D1F	12BF	12	1.0	13.0	15.0	1	620	7500	25.0	300
JEB15D1F	15BF	15	1.0	16.5	19.5	1	470	9500	27.0	350
JEB18D1F	18BF	18	1.0	19.5	23.5	1	400	9000	30.0	300

① f=1MHz,V_{DC}=0V,V_{RMS}=0.1V

② Peak pulse power dissipation (Surge waveform: 1.2/50μs-8/20μs@2Ω)

③ Peak pulse current (Surge waveform: 1.2/50μs-8/20μs@2Ω)

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

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

V_{BR}: Breakdown voltage I_R: Reverse leakage current

RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25ºC, unless otherwise noted)

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

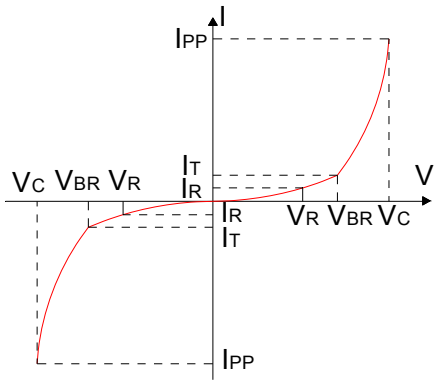


FIG.2: Pulse waveform (1.2/50μs)

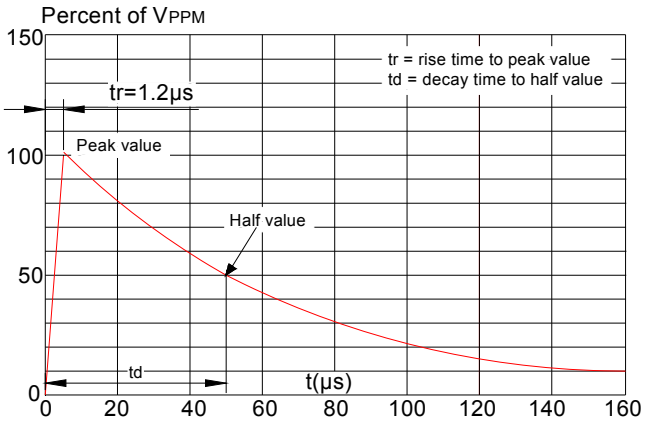


FIG.3: Pulse derating curve

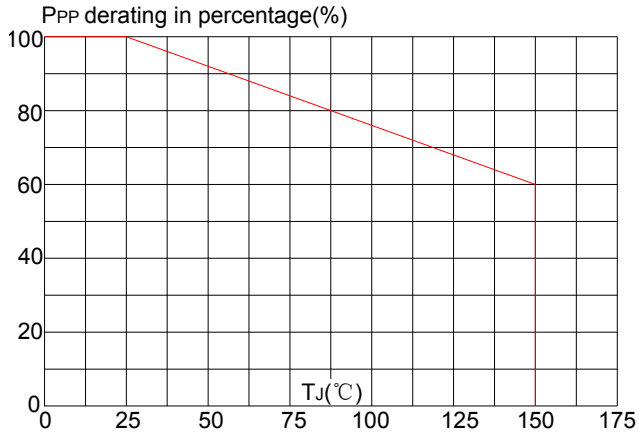


FIG.4: Pulse waveform

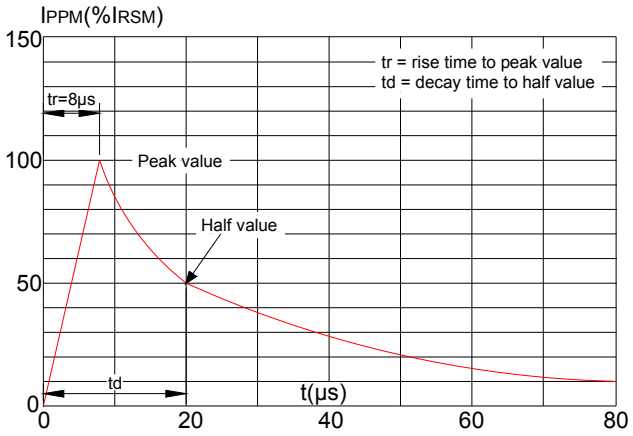
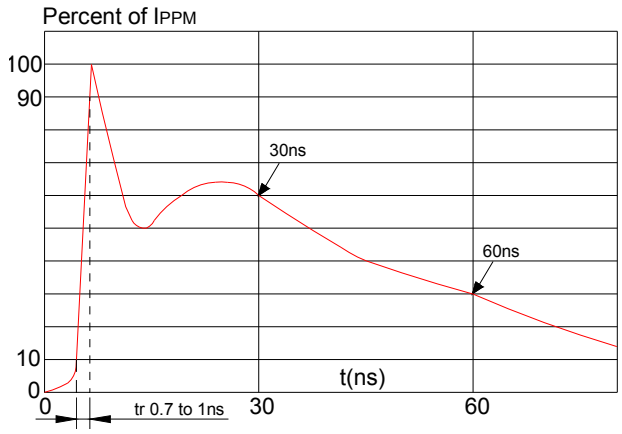
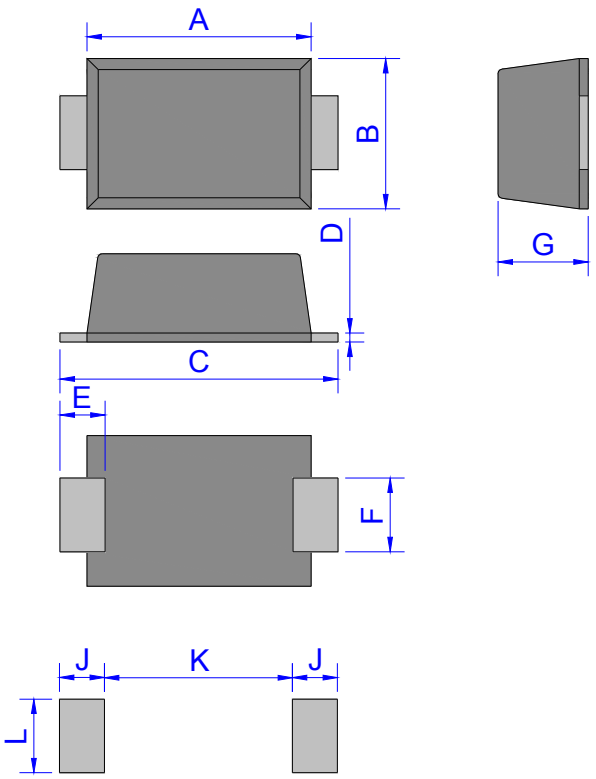


FIG.5: ESD clamping (30kV contact)



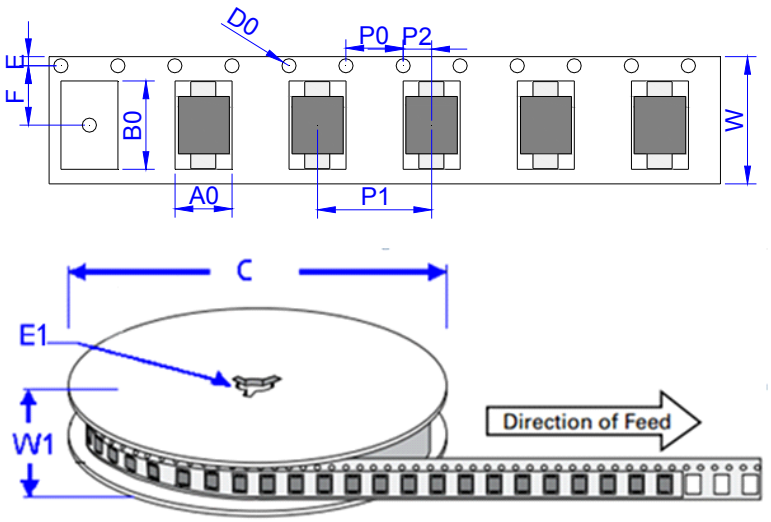
PACKAGE MECHANICAL DATA



SOD-123FL

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.01
E	0.3	0.9	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.95	1.35	0.037	0.053
J	1.30		0.051	
K		1.70		0.067
L	1.30		0.051	

TAPE AND REEL SPECIFICATION-SOD-123FL



Ref.	Dimensions	
	Millimeters	Inches
A0	1.95 ± 0.3	0.077± 0.012
B0	3.95 ± 0.3	0.156 ± 0.012
C	178	7.0
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	3.50 ± 0.2	0.138 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	8.0± 0.2	0.315 ± 0.008
W1	11.5 ± 1.0	0.453 ± 0.039

PART No.	UNIT WEIGHT (g/PCS) typ.	PACKAGE	REEL (PCS)	DESCRIPTION
JEBxxD1F	0.0168	SOD-123FL	3000	7 inch reel pack

MARKING CODE

07BF : Device Marking Code