



DESCRIPTION:

The JEBxxD1FT series are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

FEATURES

- ◇ 3600W to 6600W peak pulse power dissipation at 1.2/50 μ s-8/20 μ s@2 Ω waveform.
- ◇ For small surface mounted applications.
- ◇ Response time is typically <1ns.
- ◇ Low clamping voltage.
- ◇ Low leakage current.
- ◇ RoHS compliant.
- ◇ Meets MSL level 1, per J-STD-020, LF maximum peak of 260 $^{\circ}$ C.
- ◇ Terminal: solder plated, solderable per J-STD-002.

MAIN APPLICATIONS

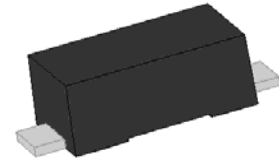
- ◇ Cell phone handsets and accessories
- ◇ Personal digital assistants (PDA's)
- ◇ Notebooks, desktops, and servers
- ◇ Portable instrumentation

PROTECTION SOLUTION TO MEET

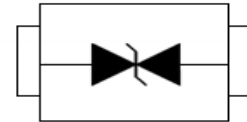
- ◇ IEC61000-4-2 (ESD) \pm 30kV (air), \pm 30kV (contact)
- ◇ IEC61000-4-5 (Lightning) 200A (1.2/50 μ s-8/20 μ s@2 Ω)

MECHANICAL CHARACTERISTICS

- ◇ SOD-123FL package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Typical weight: 0.0144g/pcs
- ◇ Lead finish: lead free



SOD-123FL



PIN Configuration

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

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 1.2/50 μs -8/20 μs @2 Ω waveform	P_{PP}	3600 to 6600	W
Peak pulse current at 1.2/50 μs -8/20 μs @2 Ω waveform	I_{PP}	200	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.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Part Number	Marking	V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$P_{PP}^{①}$	$V_C@I_{PP}$	$I_{PP}^{②}$
				min(V)	max(V)				
Bi-Polar	Bi	V	max(μA)	min(V)	max(V)	mA	W	max(V)	A
JEB07D1FT	J07B	7	1.0	8.0	10.0	1	3600	18.0	200
JEB09D1FT	J09B	9	1.0	9.5	11.5	1	4600	23.0	200
JEB12D1FT	J12B	12	1.0	13.0	15.0	1	5600	28.0	200
JEB15D1FT	J15B	15	1.0	16.5	19.5	1	6000	30.0	200
☆JEB18D1FT	J18B	18	1.0	19.5	23.5	1	6600	33.0	200
☆JEB20D1FT	J20B	20	1.0	22.2	24.5	1	6600	33.0	200
☆JEB24D1FT	J24B	24	1.0	25.0	30.0	1	6400	32.0	200

① Peak pulse power dissipation (Surge waveform: 1.2/50 μs -8/20 μs @2 Ω)

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

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

☆: Products with negative resistance

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

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

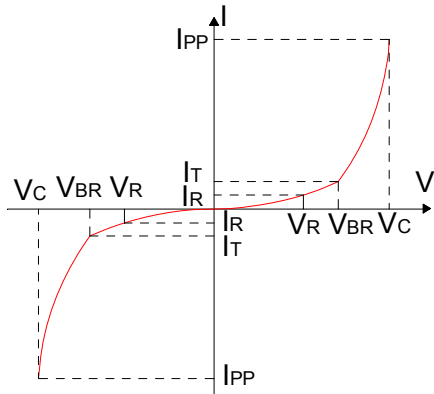


FIG.2:V- I curve characteristics (Bi-directional with negative resistance)

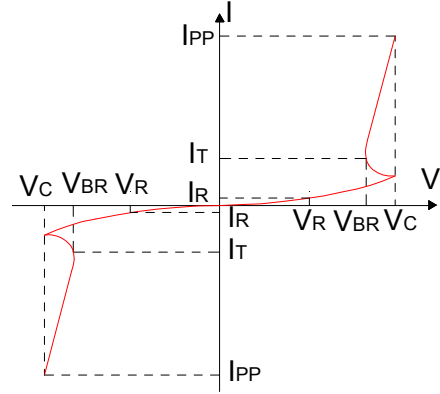


FIG.3: Pulse waveform (1.2/50µs)

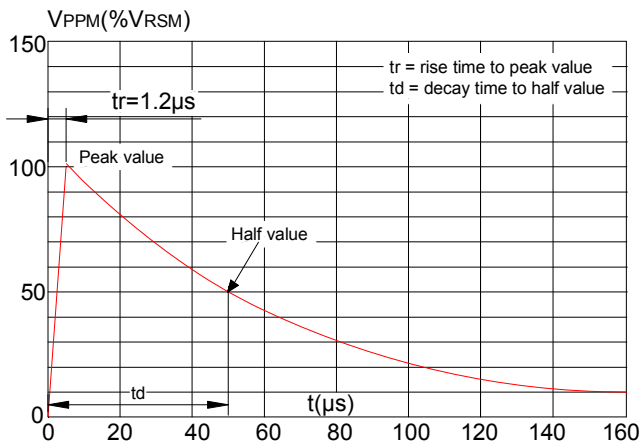


FIG.4: Pulse waveform

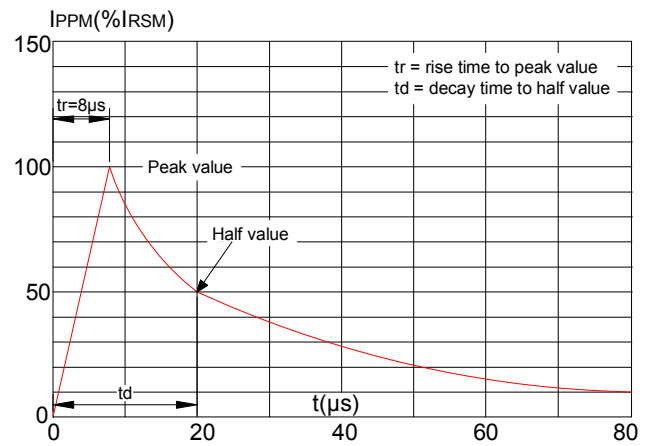


FIG.5: ESD clamping (30kV contact)

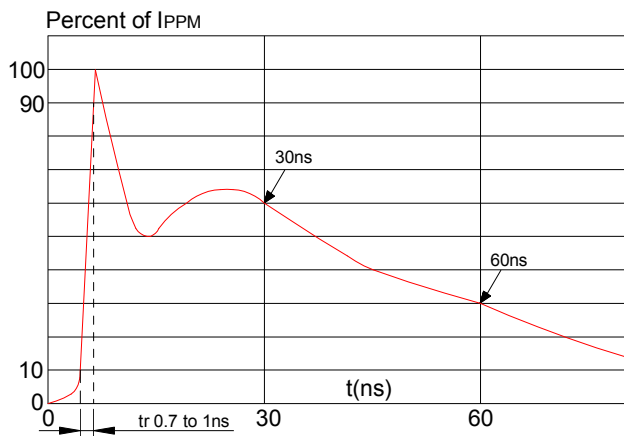
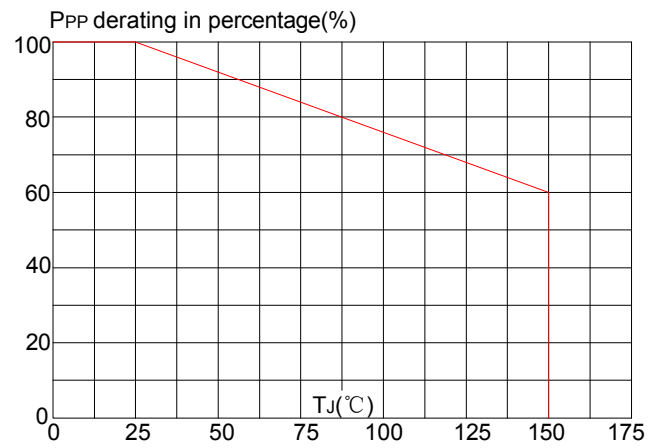
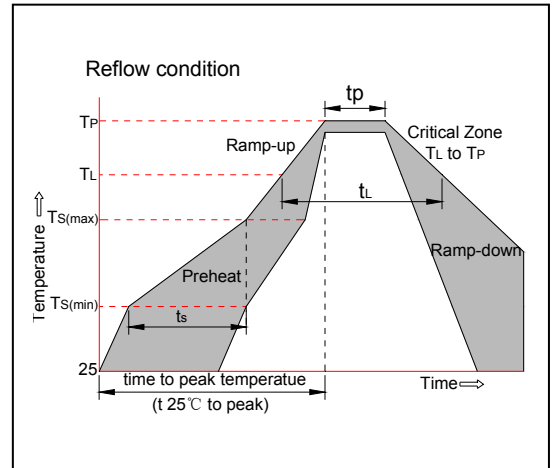


FIG.6: Pulse derating curve

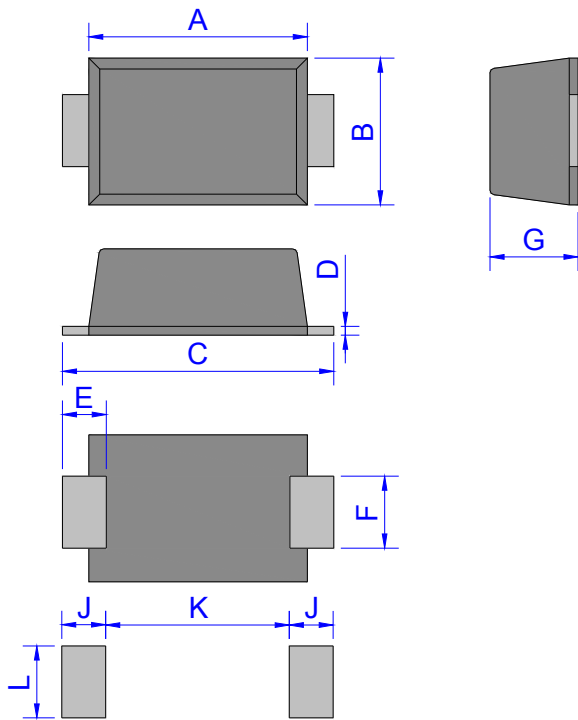


SOLDERING PARAMETERS

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



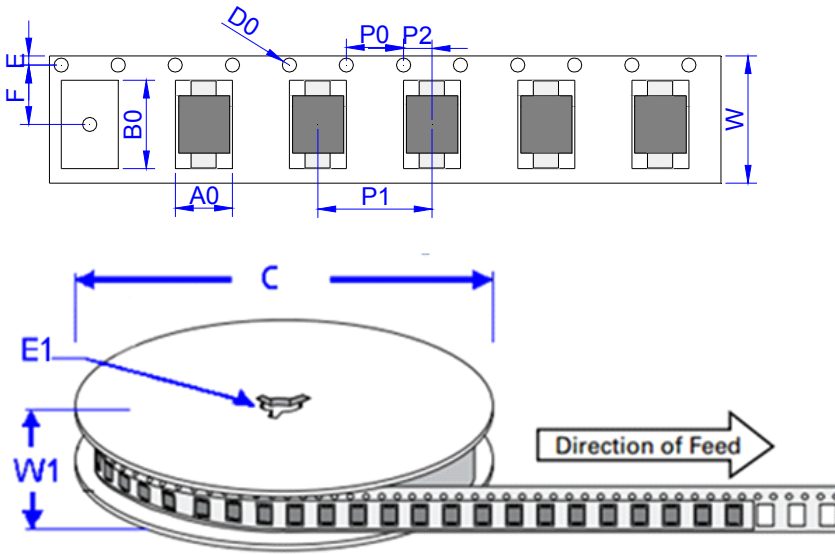
PACKAGE MECHANICAL DATA



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	0.70	1.00	0.028	0.039
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.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
JEBxxD1FT	0.0144	3000	150,000	7 inch reel pack

MARKING CODE



J07B : Device Marking Code

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