

JEB05D5 Bidirectional TVS Diode for ESD Protection**Features and benefits**

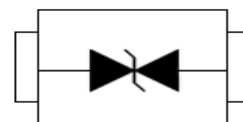
- ✧ 100 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ✧ Protects one bi-directional I/O line or power line
- ✧ Low clamping voltage
- ✧ Working voltages : 5V
- ✧ Low leakage current
- ✧ ROHS compliant

Application information

- ✧ Consumer electronics DC power supply
- ✧ Microprocessor based equipment
- ✧ Portable Instrumentation

Protection solution to meet

- ✧ IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 6.5A (8/20 μs)

Pin Information and Graphic symbol**SOD-523****symbol****Mechanical Characteristics**

- ✧ SOD-523 Package
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Weight 0.5 Milligrams (Approximate)
- ✧ Quantity Per Reel : 5,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking Code: 5XB

Absolute Maximum Ratings ($T_A=25^\circ C$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	$^\circ C$
Operating junction temperature range	T_j	-55 to +125	$^\circ C$
Lead Soldering Temperature	T_L	260 (10 sec.)	$^\circ C$
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 15 +/- 8	kV

Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

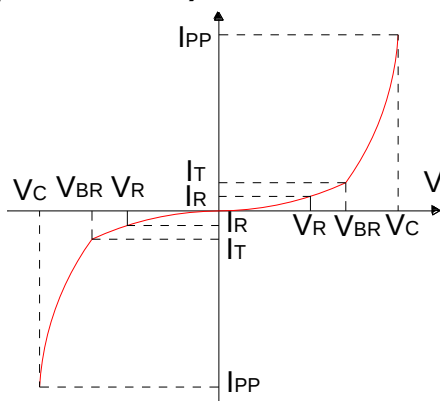
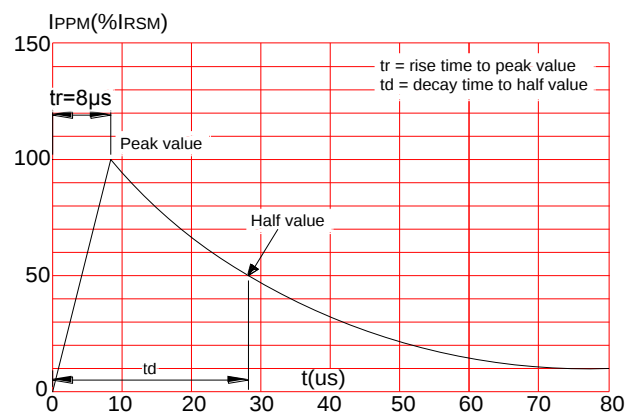
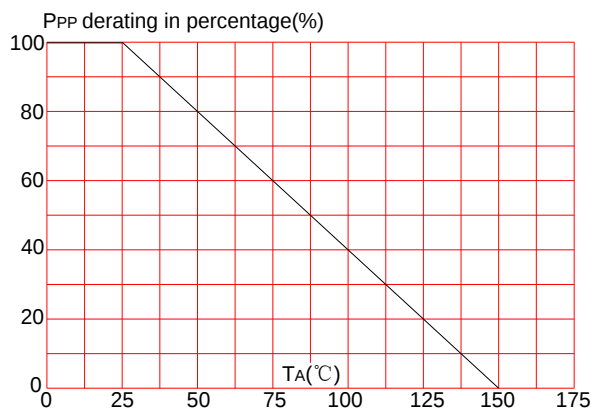
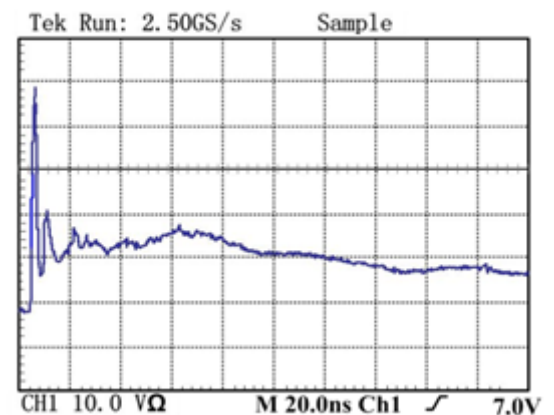
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	VR				5.0	V
Reverse Breakdown Voltage	VBR	$I_T = 1\text{mA}$	6.0			V
Reverse Leakage Current	IR	$V_R = 5\text{V}$			1	μA
Clamping Voltage	VC	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			10	V
		$I_{PP} = 6.5\text{A}$, $t_p = 8/20\mu\text{s}$			15.5	V
Junction Capacitance	CJ	$V_R = 0\text{V}$, $f = 1\text{MHz}$		10		pF

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

V_{BR} : Breakdown Voltage

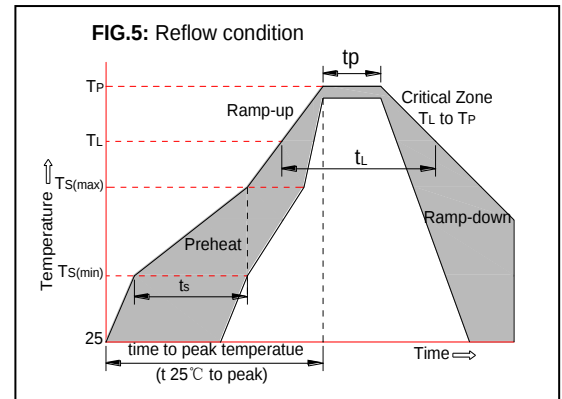
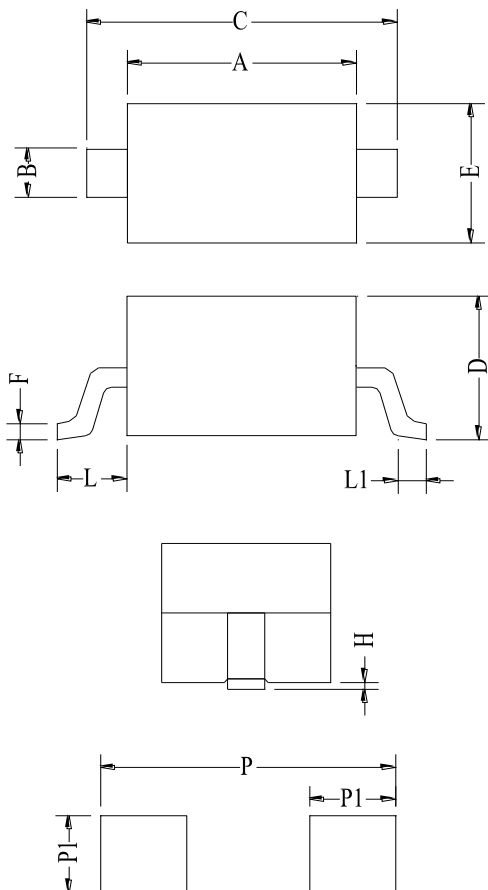
V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

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 (Bi-directional)****FIG.2: Pulse waveform****FIG.3: Pulse derating curve****FIG.4:ESD Clamping(8KV Contact)**

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 (Liquid us 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)(Liquid us)	+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)		30 secs. Max
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**

Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	0.25	0.35	0.010	0.014
C	2.50	2.70	0.098	0.106
D	0.00	1.00	0.000	0.039
E	1.20	1.40	0.047	0.055
F	0.08	0.15	0.003	0.006
L	0.475REF		0.019REF	
L1	0.25	0.40	0.010	0.016
H	0.00	0.10	0.000	0.004
P1	0.8		0.031	
P	3.0		0.118	