



DWS05D3CEJS ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- Working voltage: 5.0V
- Junction Capacitance: 11pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 30\text{kV}$ contact $\pm 30\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 7A (8/20 μs)

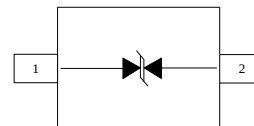
Application

- Cellular handsets and accessories
- Power supply protection
- Handheld portable applications
- Consumer electronics
- Computers and peripherals

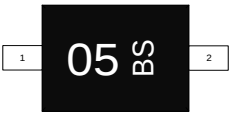
Mechanical Data

- Package: SOD-323
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DWS05D3CEJS	SOD-323		3000 pcs	7 inches



Absolute Maximum Rating ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

Parameter	Symbol	Value	Units
Maximum Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{pp}	7	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(10sec.)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to + 125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^{\circ}\text{C}$

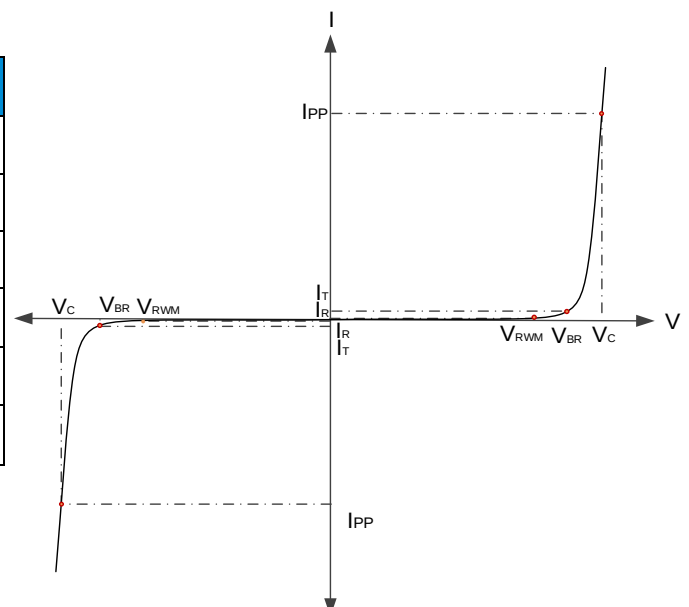
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			50	nA
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6		9	V
Clamping Voltage	V_C	$I_{PP}=7\text{A}, t_p=8/20\mu\text{s}$			12	V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		11	13	pF

Electrical Parameters

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current

Note: 8/20 μs pulse waveform.





Typical Characteristics

Figure1: 8/20 μ s pulse waveform according to IEC61000-4-5

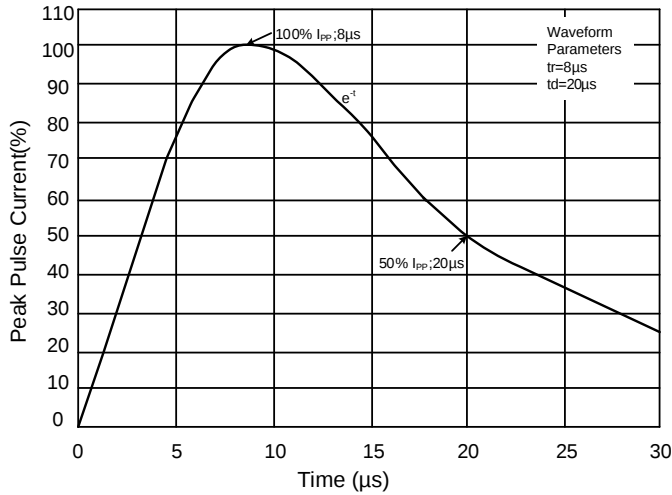


Figure2: ESD pulse waveform according to IEC 61000-4-2

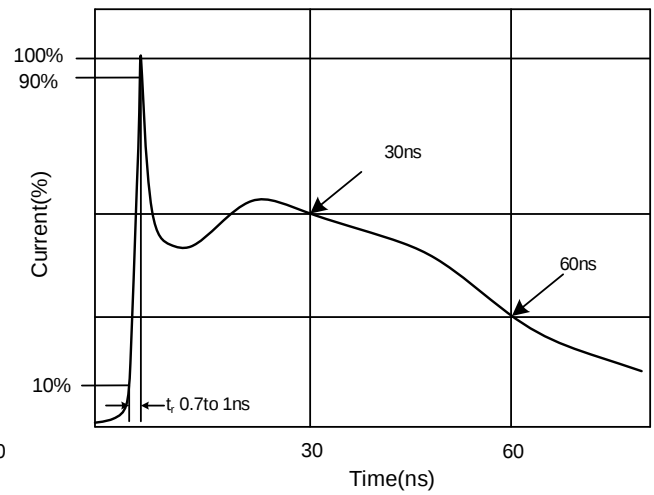


Figure3: Power Derating Curve

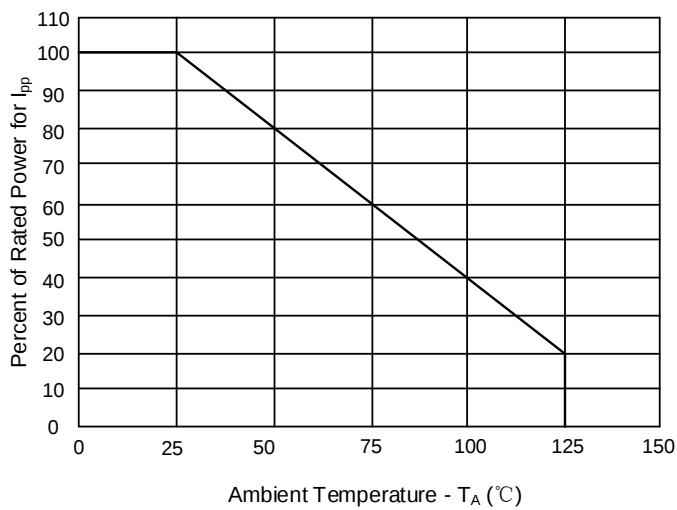
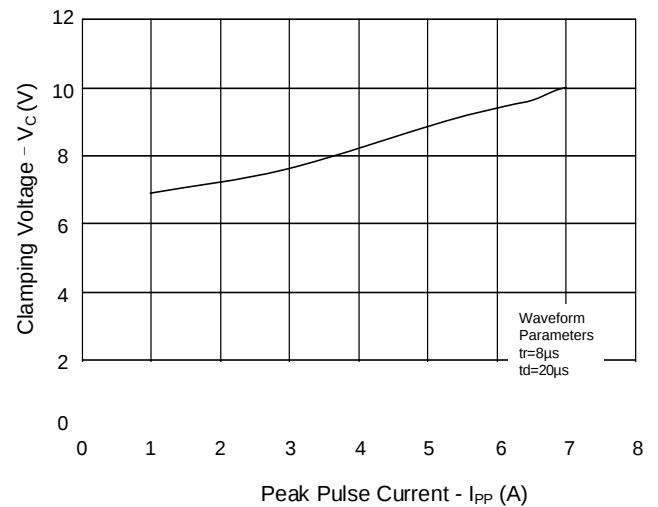


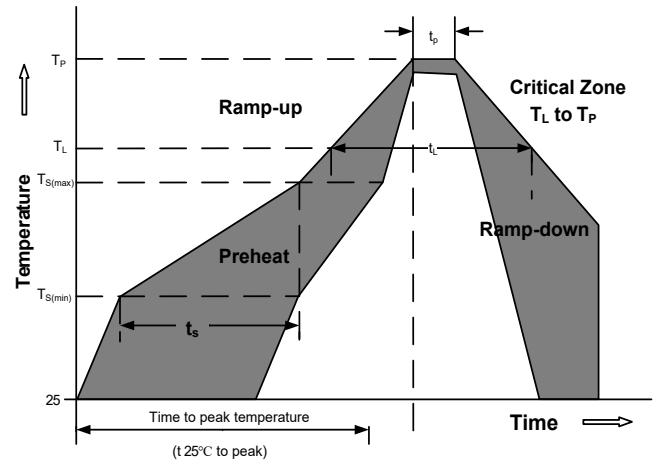
Figure 4: Clamping Voltage vs. I_{pp}



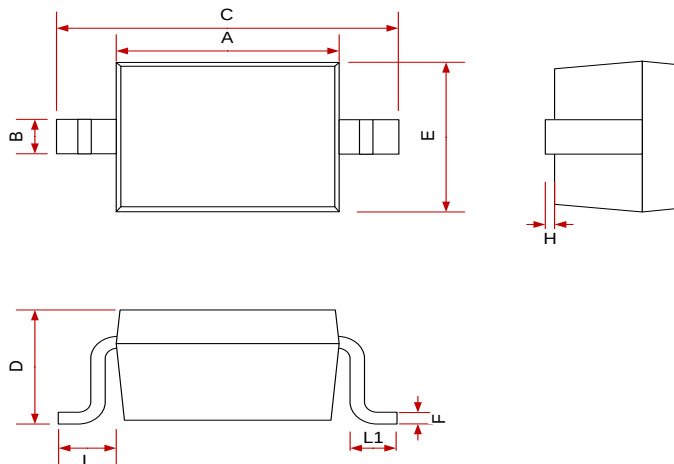


Soldering Parameters

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min ($T_{S(min)}$)	150°C
	Temperature Max ($T_{S(max)}$)	200°C
	Time (min to max) (ts)	60-190 secs
Average ramp up rate (Liquids Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L —Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquids)	217°C
	Temperature (t_L)	60-150 seconds
Peak Temperature (T_P)		260+0/-5°C
Time within actual peak Temperature(t_p)		20-40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		280°C

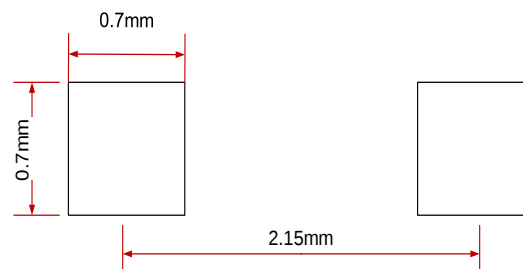


SOD-323 Outline Drawing



COMMON DIMENSION				
SYMBOL	MILLIMETER		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D		1.000		0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Land Pattern *



* This land pattern is for reference purposes only