



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

WBFBP-02C Plastic-Encapsulate Diodes

DTESD12VLED02 ESD Protection Diodes

WBFBP-02C

(1.0×0.6×0.5)

unit: mm



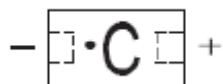
DESCRIPTION

The DTESD12VLED02 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

FEATURES

- Stand-off Voltage: 3.3 V-12 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- These are Pb-Free Devices

MARKING: C



Maximum Ratings @T_A=25°C

Parameter	Symbol	Limits	Unit
IEC61000-4-2(ESD) Contact		±30	KV
ESD voltage Per Human Body Model Per Machine Model		16	KV
		400	V
Total power dissipation on FR-5 board (Note 1)	P _D	100	mW
Thermal Resistance Junction-to-Ambient	R _{ΘJA}	1250	°C/W
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C
Junction and Storage temperature range	T _j , T _{stg}	-55 ~ +150	°C

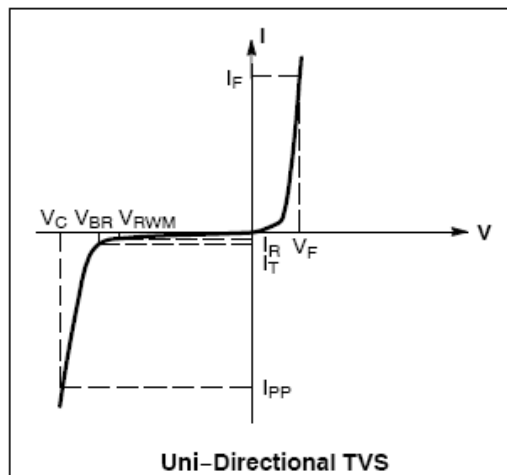
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only.

Functional operation above the Recommended. Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

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

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
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Max. Capacitance @ $V_R=0$ and $f=1\text{MHz}$



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{mA}$ for all types)

Device*	Device Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)		I_T	Max I_{PP} (A) (Note 3)	V_C (V) @Max I_{PP} (A) (Note 3)	P_{pk} (W) (8 x 20 μs)	C (pF)
		Max	Max	Min	Max	mA	-	Max	Typ	Typ
DTESD3V3LED02	A	3.3	2.5	5.0	5.9	1.0	9.8	11.4	102	80
DTESD5V0LED02	B	5.0	1.0	6.2	7.3	1.0	8.7	12.3	107	65
DTESD7V0LED02	X7	7.0	1.0	7.5	8.7	1.0	8.0	15.1	115	55
DTESD12VLED02	C	12	1.0	13.5	15.6	1.0	5.9	23.7	140	30

*Other voltages available upon request.

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .

3. Surge current waveform per Figure 3.

TYPICAL CHARACTERISTICS

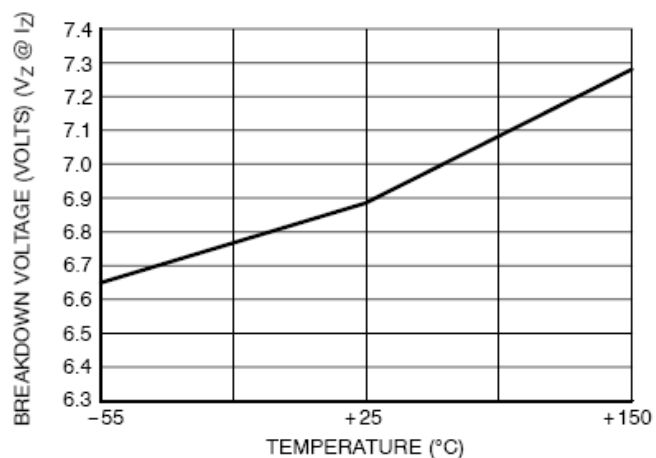


Figure 1. Typical Breakdown Voltage versus Temperature

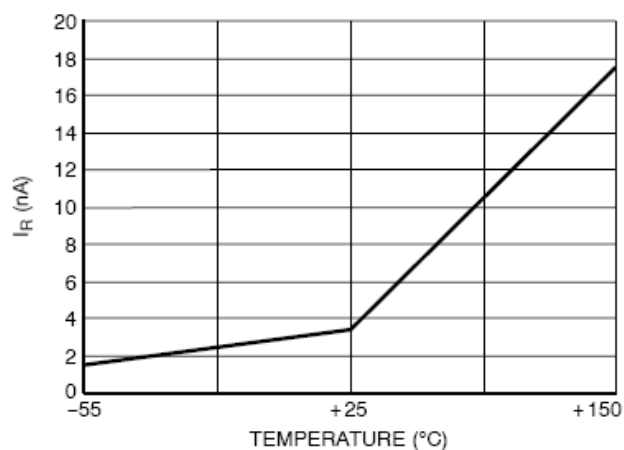


Figure 2. Typical Leakage Current versus Temperature

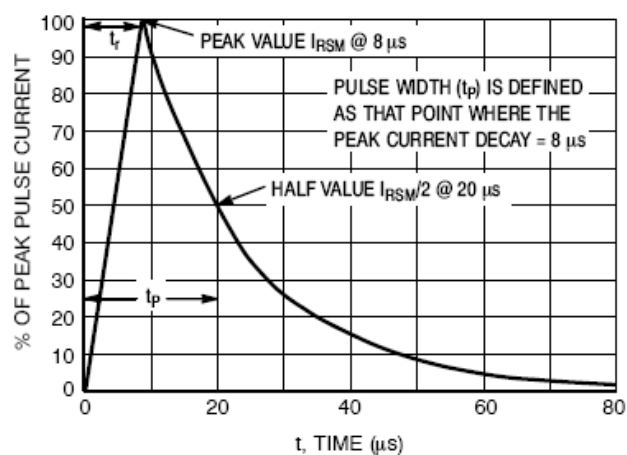


Figure 3. 8 X 20 μ s Pulse Waveform