

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

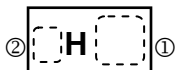
APPLICATIONS

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection

FEATURES

- Bi-directional ESD protection of one line
- Low capacitance: 12pF(Typ.)
- Low reverse stand-off voltage: 5.0V
- Low reverse clamping voltage
- Low leakage current
- Excellent package:1.0mm×0.6mm×0.5mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

MARKING

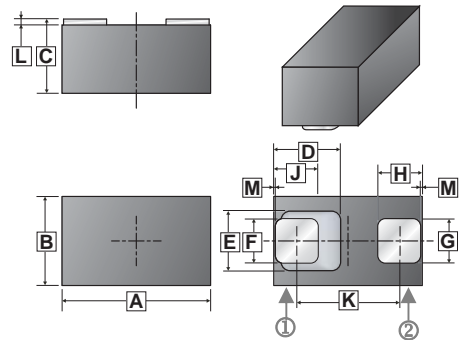


Top View

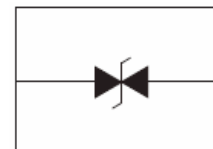
PACKAGE INFORMATION

Package	MPQ	Leader Size
WBFBP-02C	10K	7 inch

WBFBP-02C



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.950	1.050	G	0.275	0.325
B	0.550	0.650	H	0.275	0.325
C	0.450	0.550	J	0.275	0.325
D	0.450 REF.		K	0.675	0.725
E	0.400 REF.		L	0.010	0.070
F	0.275	0.325	M	0.010 REF.	



Bi-direction

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Rating		Symbol	Value	Unit
IEC 61000-4-2 (ESD) ¹	Air contact	V_{ESD}	± 25	kV
	Contact Model		± 25	
JESD22-A114-B ESD Voltage ¹	Per Human Body Model		± 16	
ESD Voltage ¹	Machine Model		± 0.4	
Peak pulse power ²		P_{PP}	40	W
Peak pulse current ²		I_{PP}	4	A
Storage temperature range		$T_{\text{J}}, T_{\text{STG}}$	150, -55 ~ 150	$^{\circ}\text{C}$
Lead Solder Temperature – Maximum (10 Second Duration)		T_{L}	260	$^{\circ}\text{C}$

Note:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse stand off voltage ¹	V_{RWM}		-	-	5	V
Reveres leakage current	I_{R}	$V_{\text{RWM}}=5\text{V}$	-	-	0.1	μA
Reveres breakdown voltage	V_{BR}	$I_{\text{T}}=1\text{mA}$	5.8	-	8	V
Clamping Voltage ²	V_{C}	$I_{\text{PP}}=4\text{A}$	-	-	10	V
Junction capacitance	C_{J}	$f=1\text{MHz}, V_{\text{R}}=0$	-	12	15	pF

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

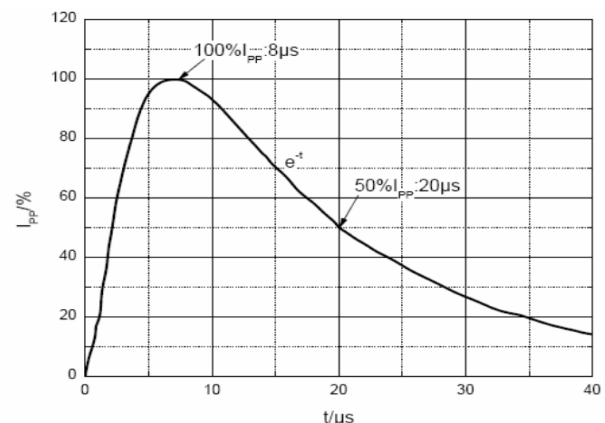
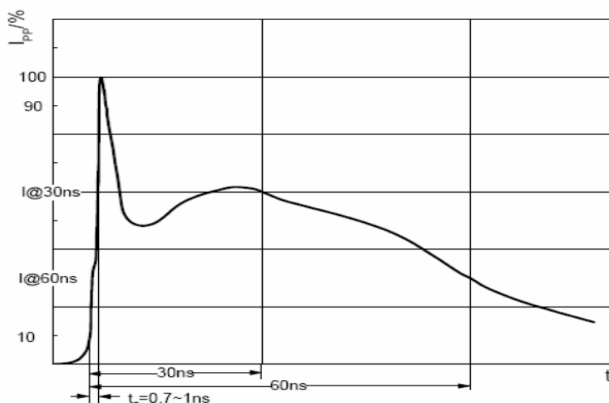
ESD STANDARDS COMPLIANCE

IEC61000-4-2 Standard

Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0 ~ 249
1A	250 ~ 499
1B	500 ~ 999
1C	1000 ~ 1999
2	2000 ~ 3999
3A	4000 ~ 7999
3B	8000 ~ 15999

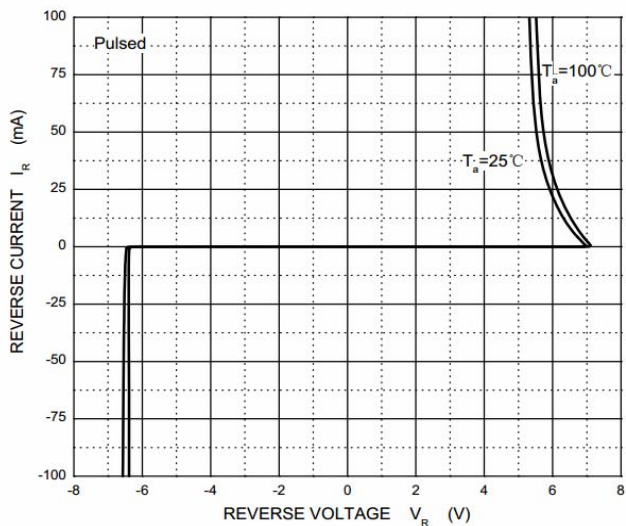


ESD pulse waveform according to IEC61000-4-2

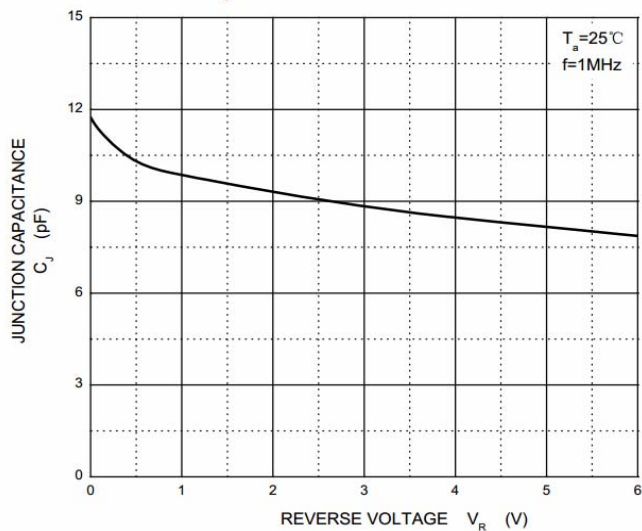
8/20 μs pulse waveform according to IEC 61000-4-5

RATINGS AND CHARACTERISTICS CURVES

Reverse Characteristics



Capacitance Characteristics



V_C — I_{PP}

