

Low Voltage TVS for ESD Protection

 Lead(Pb)-Free

Features:

- * Transient protection for data lines to IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
IEC 61000-4-4 (EFT) 40A (tp = 5/50ns)
- * Protects two data lines
- * Low clamping voltage
- * Working voltage: 3.3V
- * Low leakage current
- * Solid-state silicon-avalanche technology

Peak Pulse Power
40 Watts
Reverse Working Voltage
3.3 VOLTS

BOTTOM VIEW



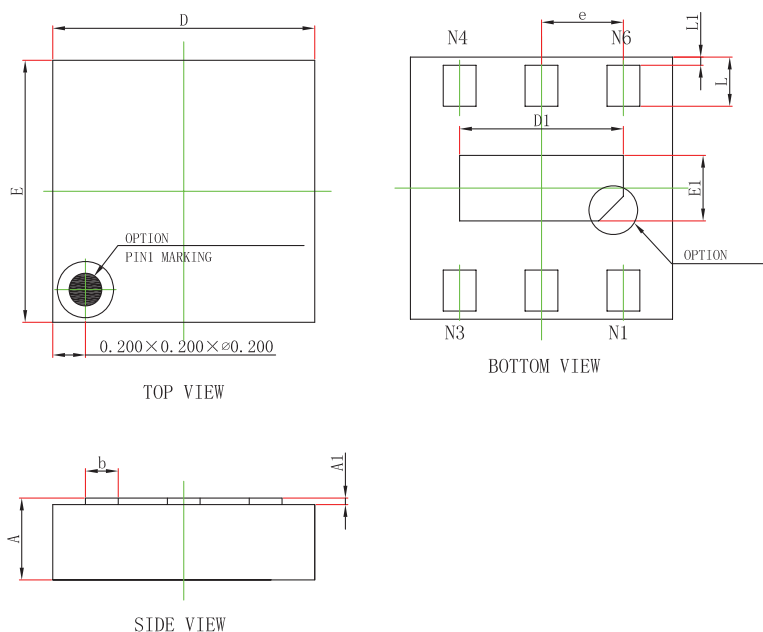
BFBP-06E

Main Applications:

- * Cellular Handsets & Accessories
- * Personal Digital Assistants (PDAs)
- * Notebooks & Handhelds
- * Portable Instrumentation
- * Digital Cameras
- * MP3 Players

BFBP-06E Outline Dimensions

Unit:mm



Symbol	Min	Max
A	0.45	0.55
A1	0.01	0.09
D	1.55	1.65
E	1.55	1.65
D1	1.00 Ref.	
E1	0.50 Ref.	
b	0.15	0.25
e	0.50 BSC.	
L	0.25	0.35
L1	0.00	0.05

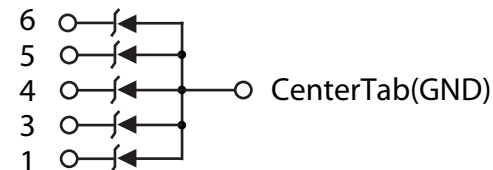
Maximum Ratings (T_A=25°C unless otherwise noted)

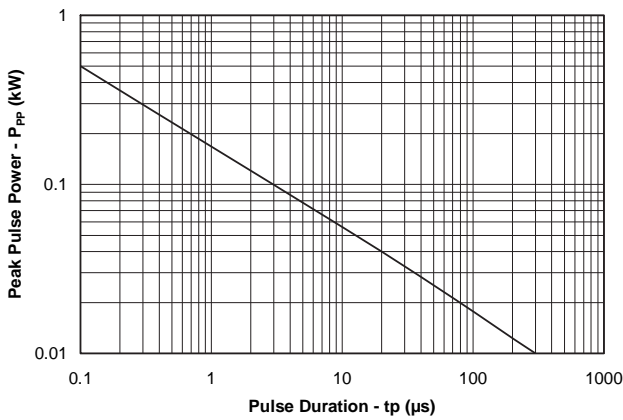
Parameter	Symbol	Value	Units
Peak Pulse Power (t _p =8/20μs)	P _{PP}	40	W
Maximum Peak Pulse Current (t _p = 8/20μs)	I _{PP}	5	A
IEC61000-4-2 Air(ESD) IEC61000-4-2 Contact(ESD)	ESD	20 15	kV
Operating Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

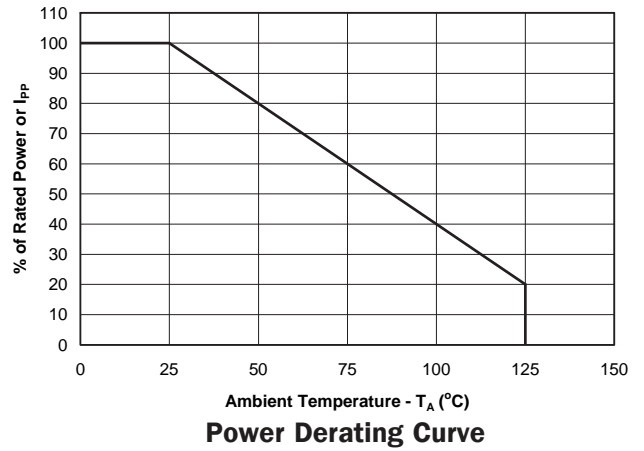
Parameter	Symbol	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V _{RWM}	-	-	3.3	V
Punch-Through Voltage I _{PT} = 2μA	V _{PT}	3.5	3.9	4.6	V
Snap-Back Voltage I _{SB} = 50mA	V _{SB}	2.8	-	-	V
Reverse Leakage Current V _{RWM} = 3.3V	I _R	-	0.05	0.5	μA
Clamping Voltage I _{PP} = 1A, t _p = 8/20μs Any I/O to Gnd	V _C	-	-	5.5	V
Clamping Voltage I _{PP} = 5A, t _p = 8/20μs Any I/O to Gnd	V _C	-	-	8.0	V
Reverse Clamping Voltage I _{PP} = 1A, t _p = 8/20μs Any I/O to Gnd	V _{CR}	-	-	2.4	V
Junction Capacitance					
I/O pin to Gnd V _R = 0V, f = 1MHz	C _j	-	20	25	pF
I/O pin to Gnd V _R = 3.3V, f = 1MHz		-	12	-	pF
I/O pin to I/O pin V _R = 0V, f = 1MHz		-	10	12.5	pF
I/O pin to I/O pin V _R = 3.3V, f = 1MHz		-	7.5	-	pF

Device Marking

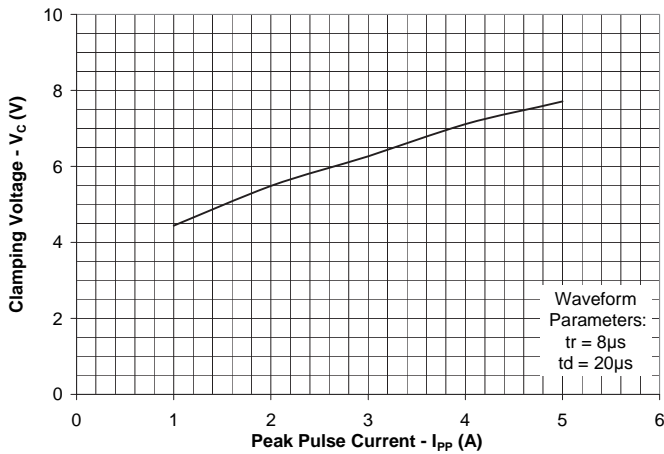
Item	Marking	Equivalent Circuit diagram
ESD3305B6E	A	



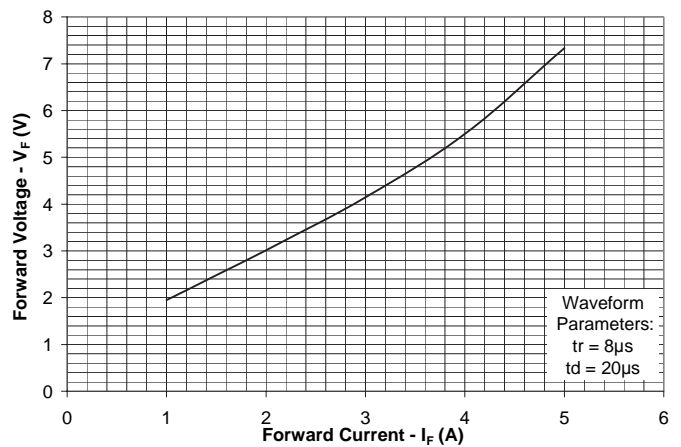
Non-Repetitive Peak Pulse Power vs. Pulse Time



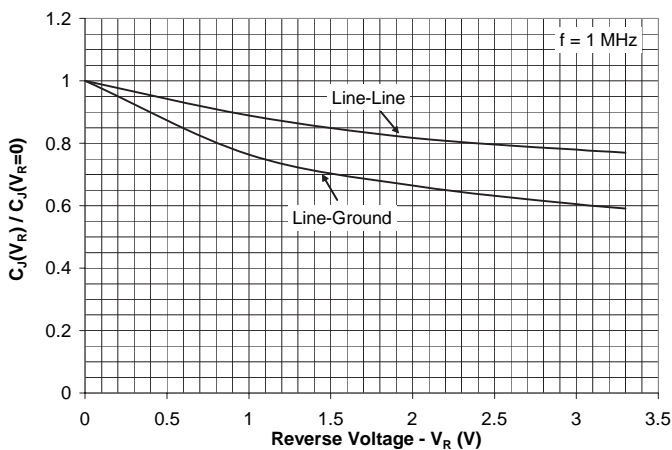
Power Derating Curve



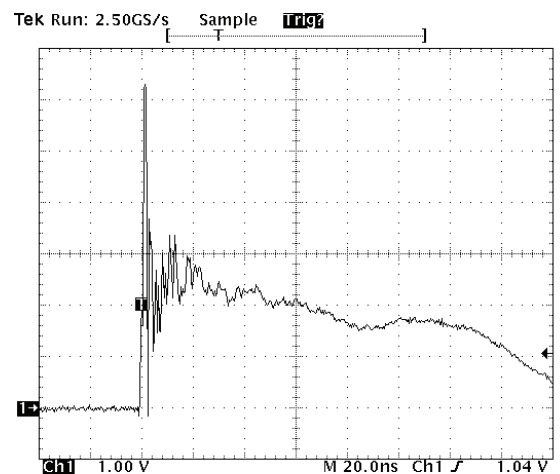
Clamping Voltage vs. Peak Pulse Current



Forward Voltage vs. Forward Current



Normalized Capacitance vs. Reverse Voltage



(8kV Contact per IEC 61000-4-2)