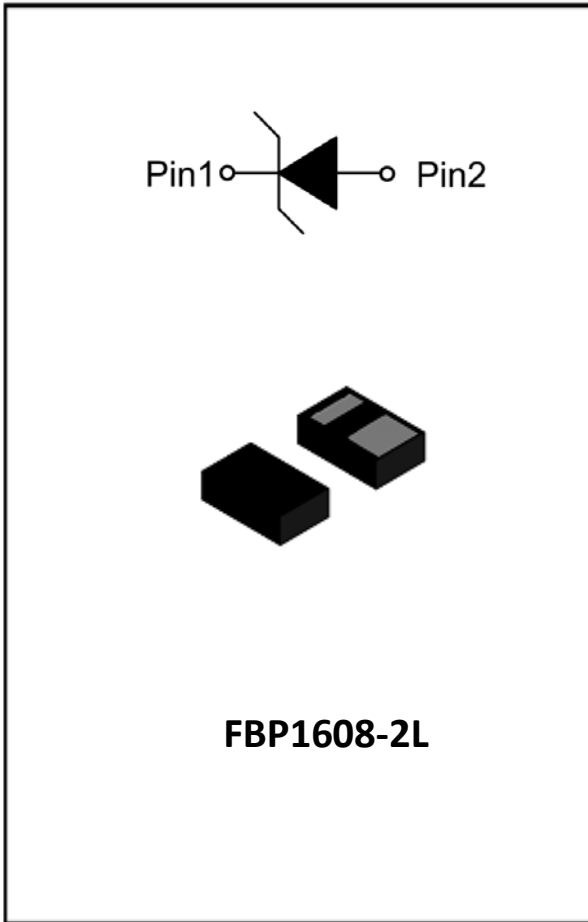


1-Line Uni-directional , Transient Voltage Suppressor



Features

- Ultra small package
- Stand-off voltage: 24V
 - Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
 - IEC61000-4-5(surge): 20A (8/20 μs)
- Low clamping voltage
- RoHS Compliant

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
 - Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

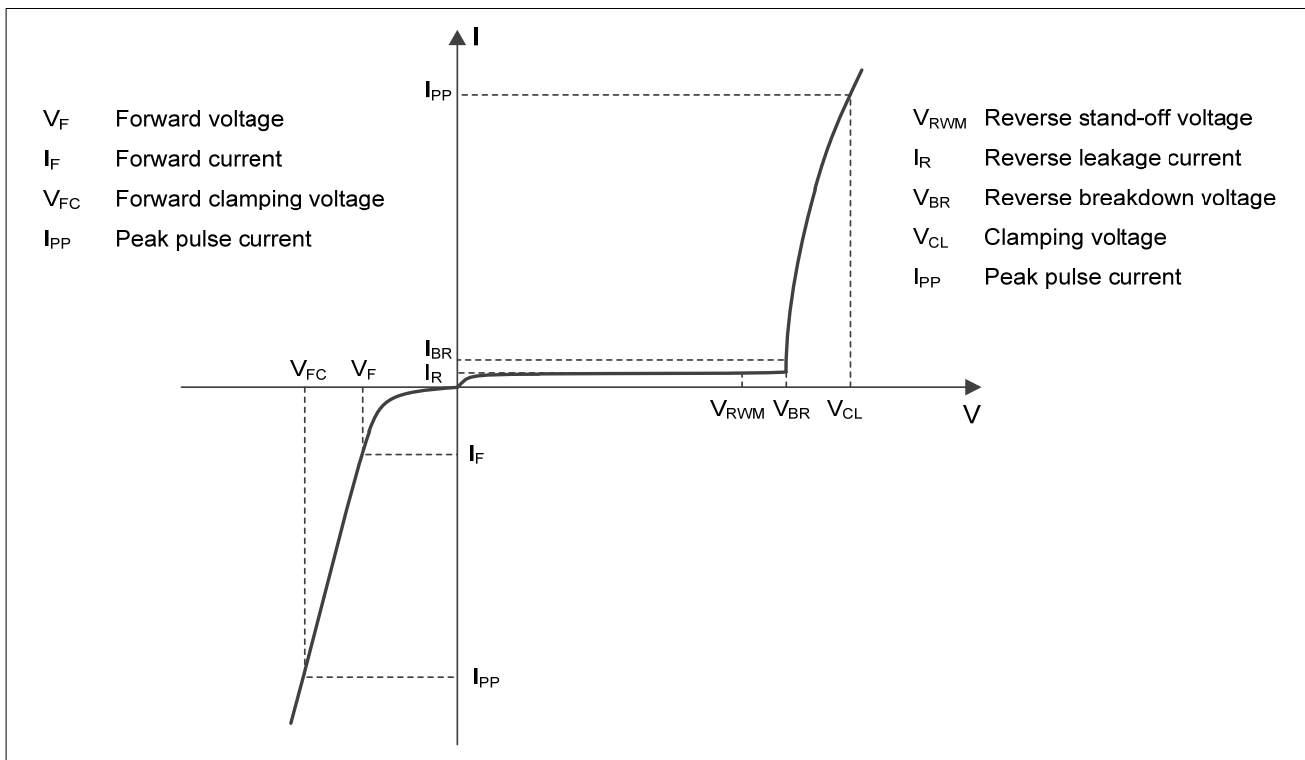
Mechanical Characteristics

- Package: FBP1608-2L
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



FH = Device Marking Code

■ Definitions of electrical characteristics





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■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	960	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	20	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	
Operating Temperature Range	T_J	-55~125	°C
Storage Temperature Range	T_{STG}	-55~150	°C

■Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				24
Reverse leakage current	I_R	μA	$V_{RWM} = 24V$			0.5
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	26		
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$			34
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 20A, t_p = 8/20\mu s$			48
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		120	

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5. (8/20 μs current waveform).

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD24VP6A	F2	Approximate 2.327	10000	100000	400000	7" reel



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

Fig.1 8/20 μs waveform per IEC61000-4-5

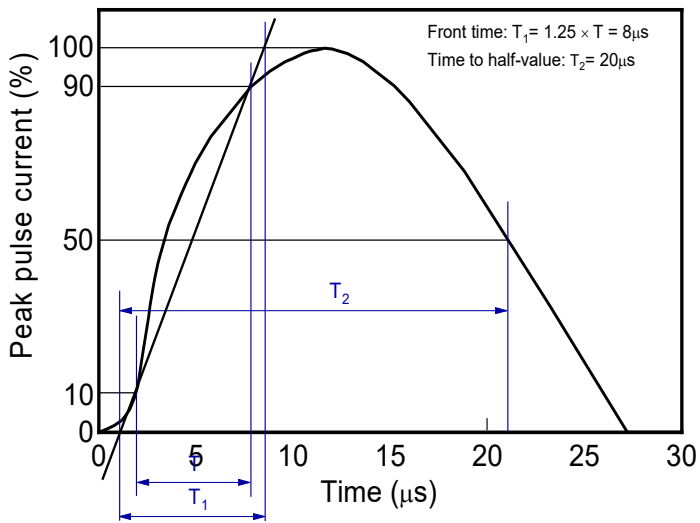


Fig.3 Clamping voltage vs. Peak pulse current

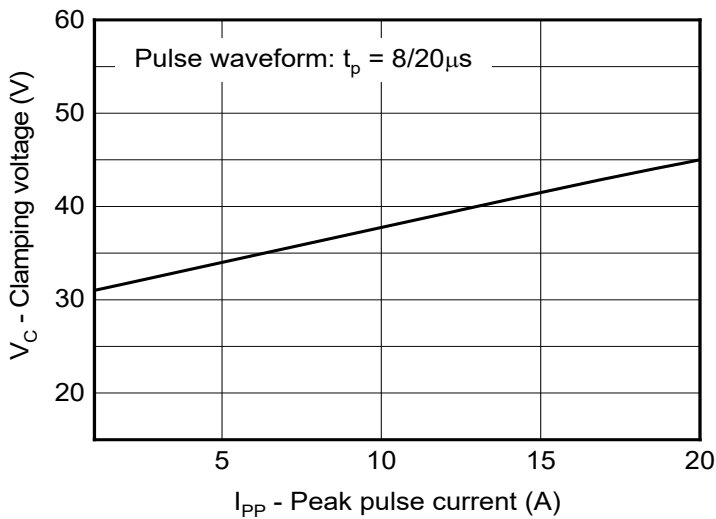


Fig.5 Power derating vs. Ambient temperature

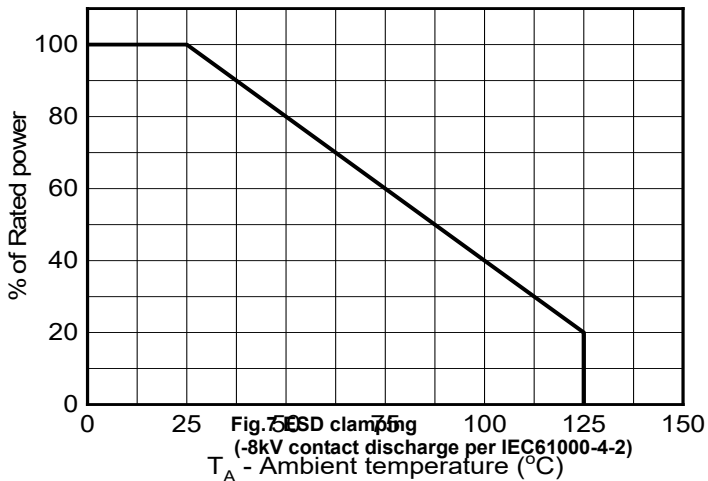


Fig.2 Contact discharge current waveform per IEC61000-4-2

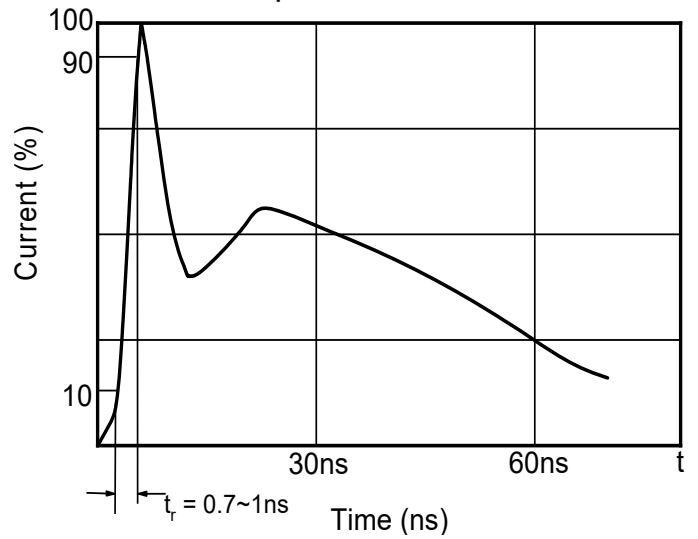


Fig.4 Non-repetitive peak pulse power vs. Pulse time

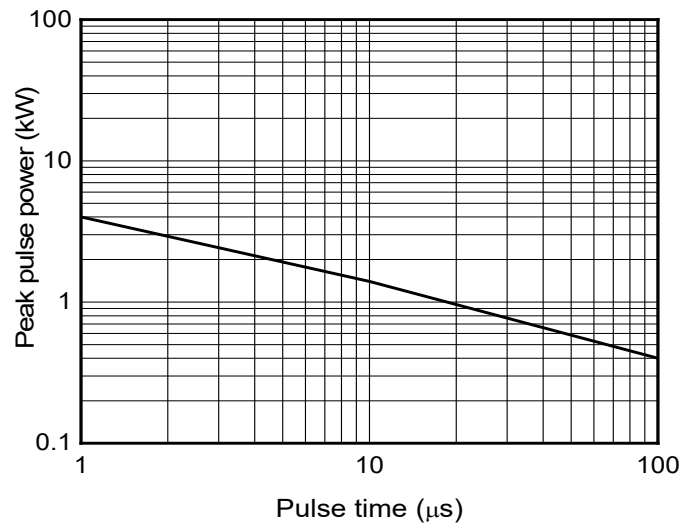
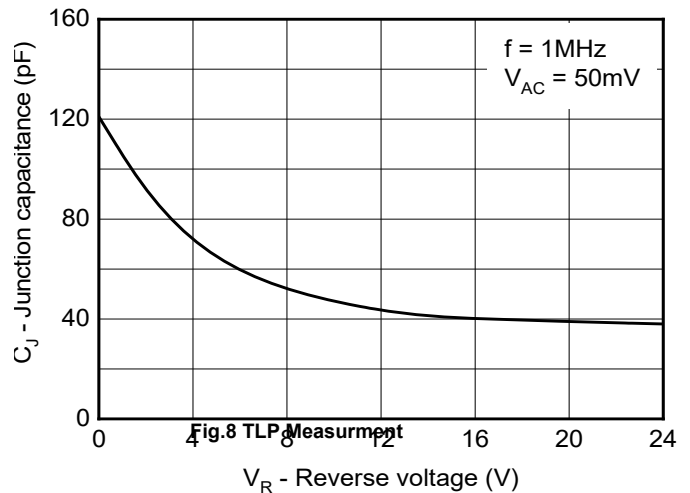
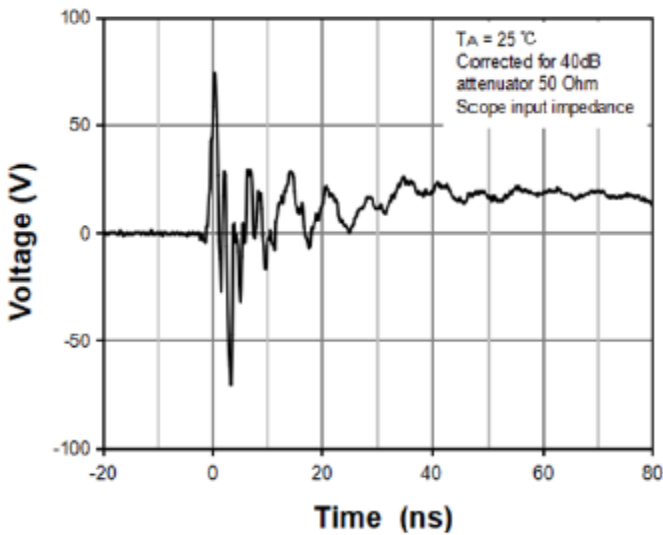
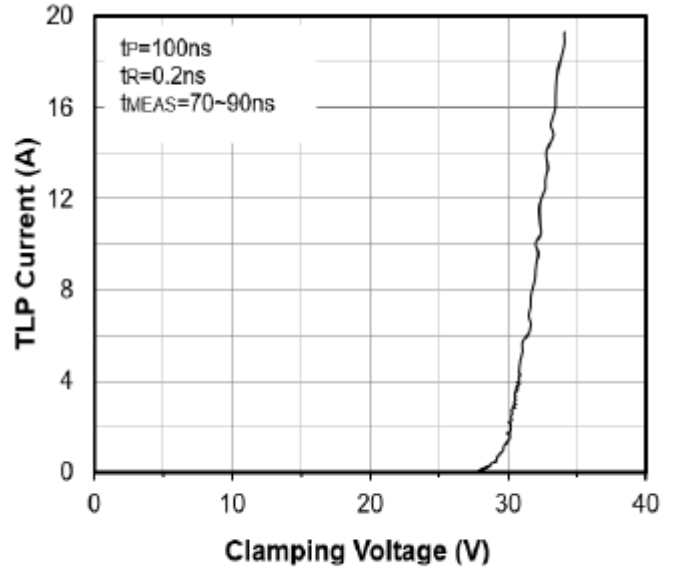


Fig.6. Capacitance vs. Reverse voltage



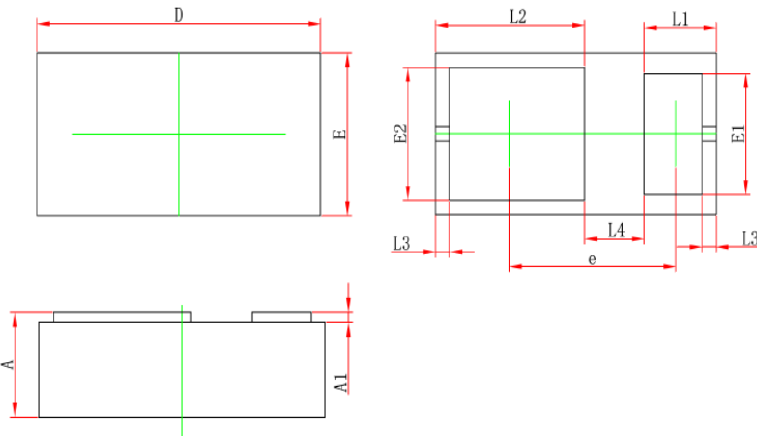


ESD Clamping Voltage
8 kV Contact per IEC61000-4-2



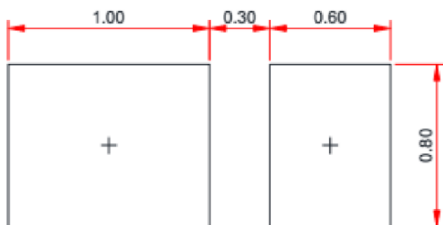
TLP Measurement

■Outline Dimensions



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.450	0.550	0.018	0.022
A1	0.010	0.090	0.000	0.004
D	1.550	1.650	0.061	0.065
E	0.750	0.850	0.030	0.033
E1	0.520	0.680	0.020	0.027
E2	0.600	0.760	0.024	0.030
L1	0.410 REF.		0.016 REF.	
L2	0.850 REF.		0.033 REF.	
L3	0.080 REF.		0.003 REF.	
L4	0.340 REF.		0.013 REF.	
E	0.900	1.000	0.035	0.039

■Recommend land pattern (Unit:mm)



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.



ESD24VFP

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