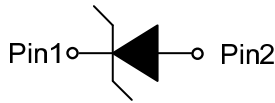


1-Line, Uni-directional, Transient Voltage Suppressor



DFN1608-2L

Features

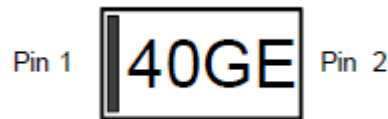
- Ultra small package
- Stand-off voltage: 40V Max
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 20A (8/20 μs)
- Ultra-low capacitance: $C_J = 100\text{ pF typ}$
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

- Power supply protection
- Power management
- Battery Contacts

Mechanical Characteristics

- Package: DFN1608-2L
- Case Material: "Green" Molding Compound.
- Marking Information: See Below



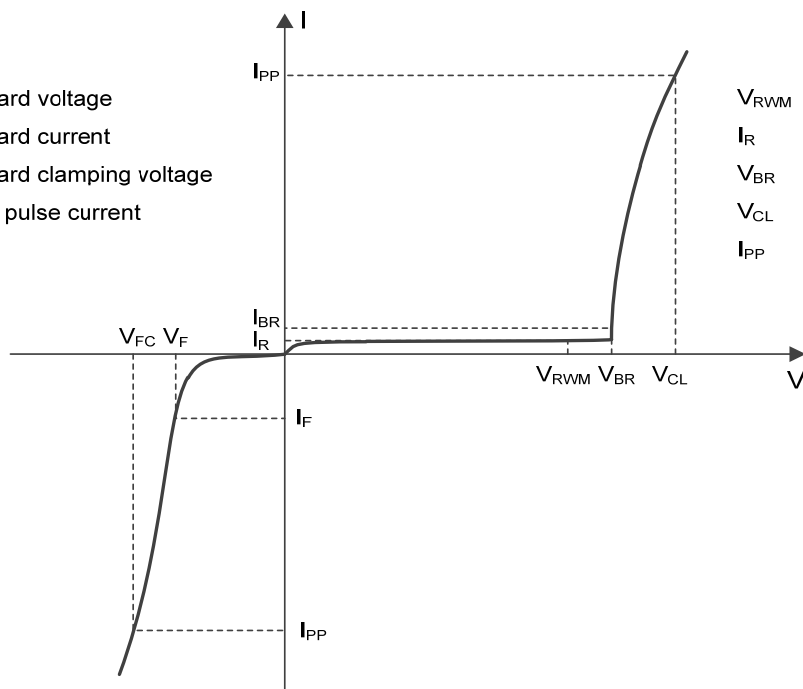
■Definitions of electrical characteristics

V_F Forward voltage

I_F Forward current

V_{FC} Forward clamping voltage

I_{PP} Peak pulse current



V_{RWM} Reverse stand-off voltage

I_R Reverse leakage current

V_{BR} Reverse breakdown voltage

V_{CL} Clamping voltage

I_{PP} Peak pulse current



ESD40VFPA

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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	1500	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	KV
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Storage temperature	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				40
Reverse leakage current	I_R	μA	$V_{RWM} = 40V$			1
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	42		46
Forward voltage	V_F	V	$I_T = 20mA$	0.25		1.25
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$		42	45
		V	$I_{PP} = 20A, t_p = 8/20\mu s$		70	75
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$ Any I/O pin to GND		100	120

(1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

(3). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

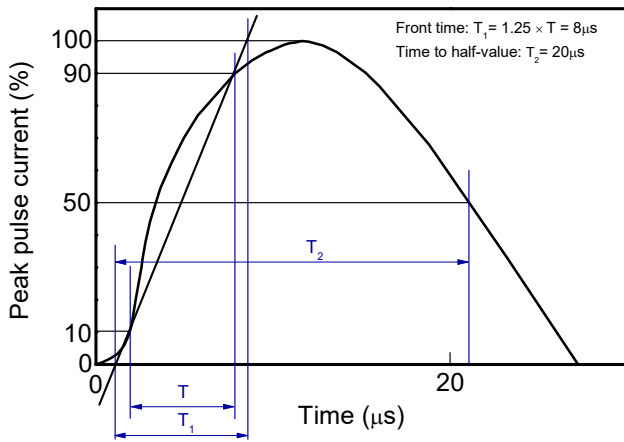
PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD40VFPA	Approximate 2.6	3000	30000	120000	Tae& reel



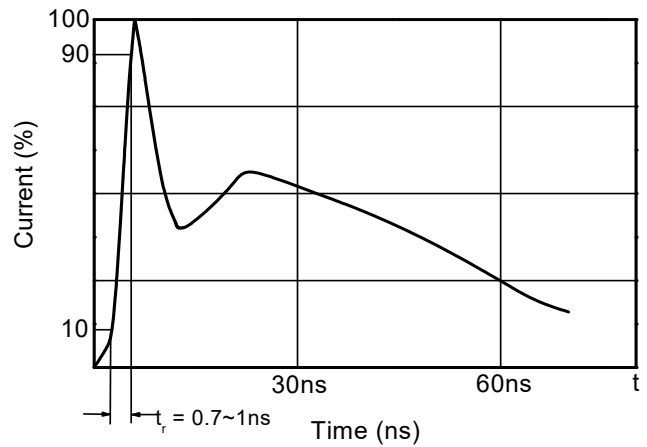
ESD40VFPA

■ Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

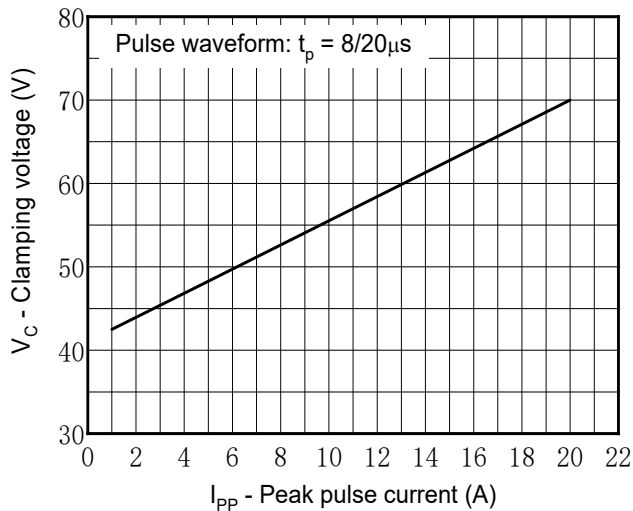
8/20μs waveform per IEC61000-4-5



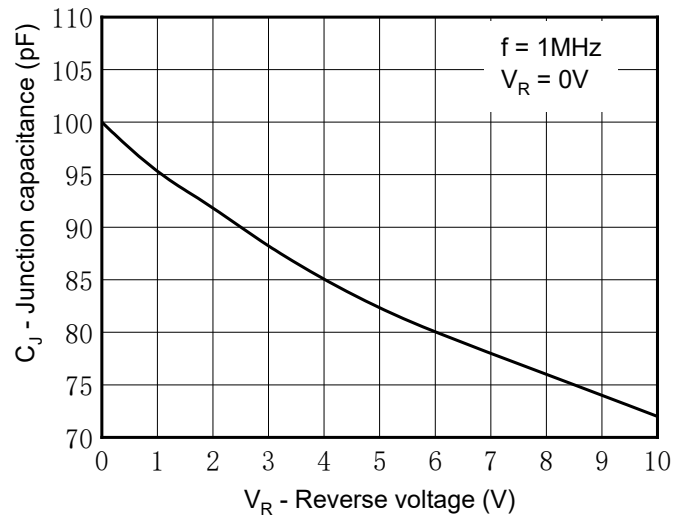
Contact discharge current waveform per IEC61000-4-2



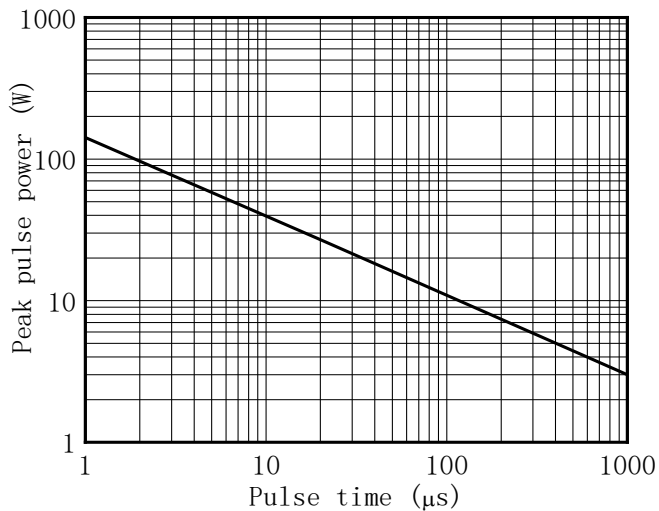
Clamping voltage vs. Peak pulse current



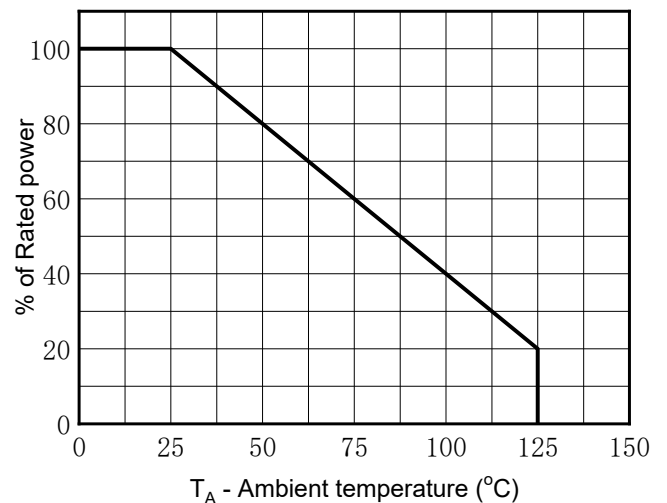
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time

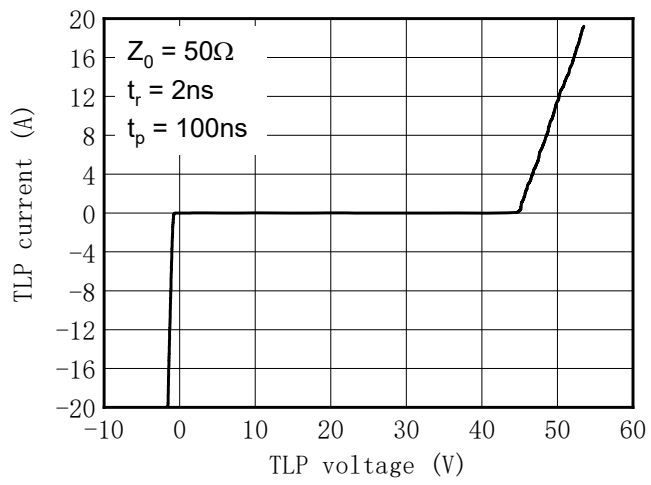


Power derating vs. Ambient temperature



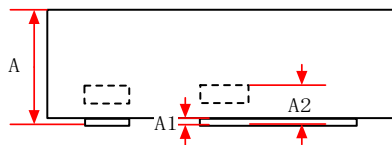
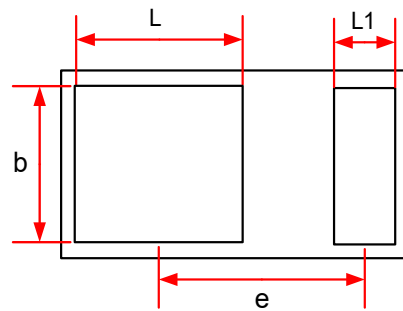
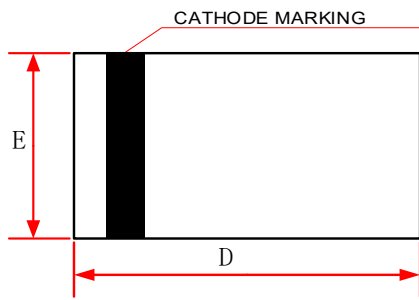


TLP Measurement



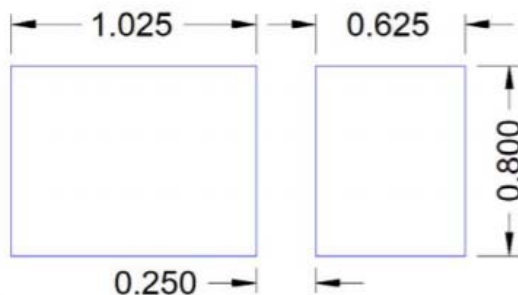


■ Outline Dimensions



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.35	0.45	0.55
A1	0.00		0.10
A2	0.15 Ref.		
b	0.56	0.66	0.76
L	0.62	0.72	0.82
L1	0.22	0.32	0.42
D	1.50	1.60	1.70
E	0.70	0.80	0.90
e	0.93BSC		

■ Recommend land pattern (Unit:mm)



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



ESD40VFPA

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