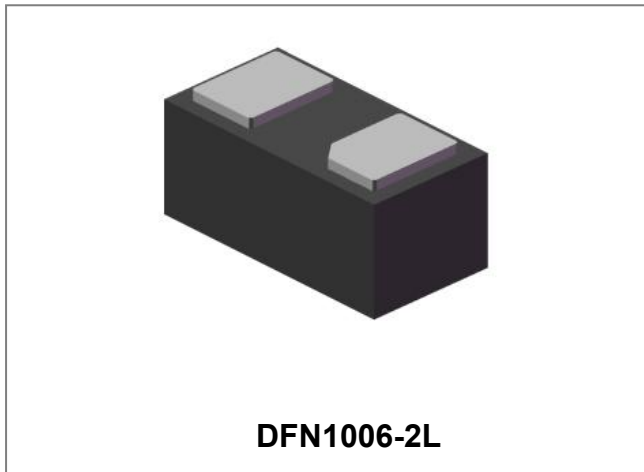


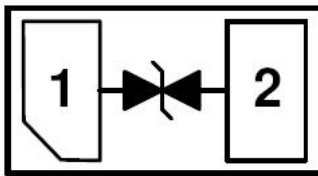
## ESD133C Transient Voltage Suppressor



### Features

- ESD Protection for 1 Line with Bi-directional
- Provide ESD protection for the protected line to IEC 61000-4-2 (ESD)  $\pm 15$ kV (contact)
- Suitable for, 33V and below, operating voltage applications
- Protect one I/O line or power line
- Fast turn-on and low clamping voltage
- Solid-state silicon-avalanche and active circuit triggering technology
- This is a Halogen Free Device

### Circuit Diagram



### Applications

- Cellular Handsets and Accessories
- Small Pane Modules
- Control Signal Line Protection
- Power Line Protection
- Portable Devices
- Touch Panels
- Notebooks and Handhelds
- Peripherals

### Mechanical Characteristics

- DFN1006-2L package
- Marking : Marking Code
- RoHS Compliant

### Maximum Ratings

Characteristics	Symbol	Max.	Units
pin-1 to pin-2 ESD per IEC 61000-4-2(Contact)	$V_{ESD-1}$	$\pm 15$	KV
Lead Soldering Temperature	$T_{SOL}$	260(10 sec.)	$^{\circ}C$
Operating Temperature	$T_{OP}$	-55 to +85	$^{\circ}C$
Storage Temperature	$T_{STO}$	-55 to +150	$^{\circ}C$

**Electrical Characteristics(T=25°C unless otherwise specified)**

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	$V_{RWM}$	T=25°C	-33	-	33	V
Reverse Breakdown Voltage	$V_{BV}$	$I_{BV}=1mA, T=25°C$	35	36	42	V
Reverse Leakage Current	$I_R$	$V_{RWM}=\pm 33V, T=25°C$	-	0.001	1	uA
Clamping Voltage	$V_C$	$I_{PP}=4A, t_p=8/20\mu s, T=25°C$	-	57	60	V
Diode Capacitance	$C_d$	$V_R=0V, f=1MHz, T=25°C$	-	12	20	pF

**Ratings and Characteristics Curves**

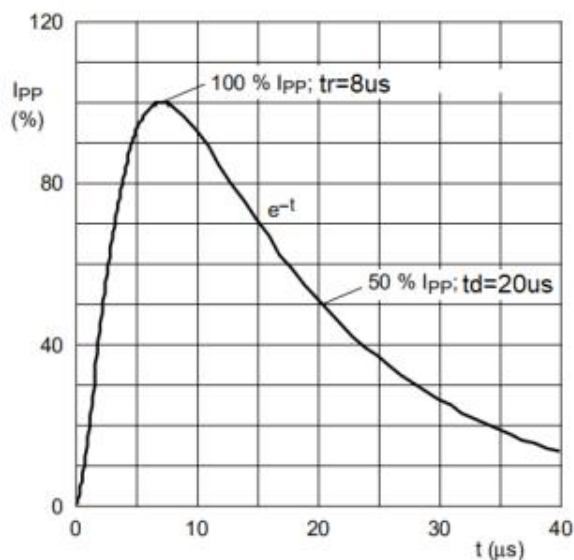


Fig. 1 8/20us Pulse Waveform

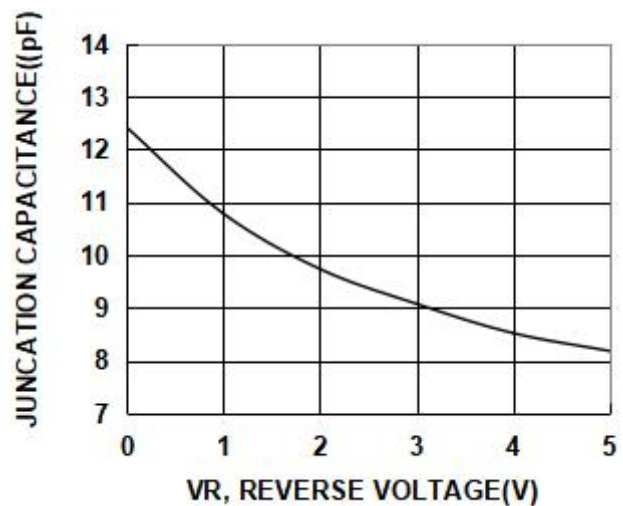


Fig. 2 Typical Capacitance vs. Reverse Voltage

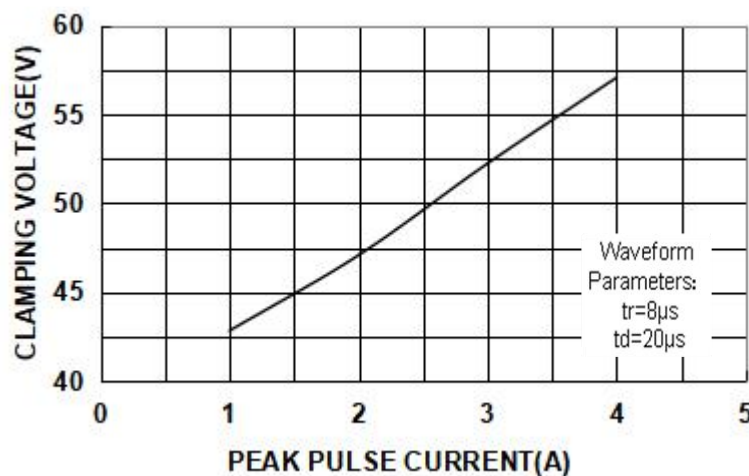


Fig. 3 Typical Clamping Voltage vs. Peak Pulse Current

**Ordering Information:**

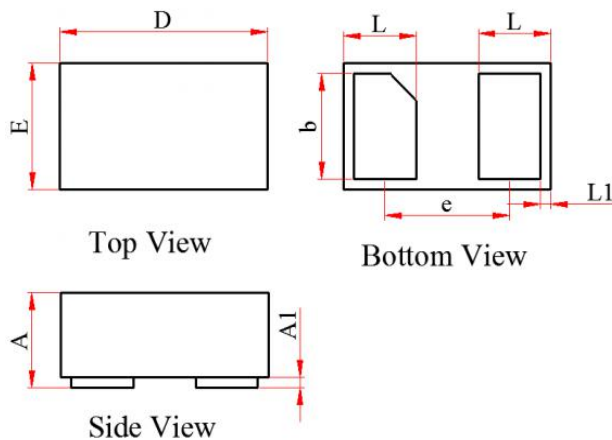
Device	Package	Shipping
ESD133C	DFN1006-2L	10000pcs/ reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


33C = Marking code

Notes: ESD133C is printed in the direction of 1 for reference.

**Mechanical Dimensions**


Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.400	0.500	--	0.016	0.020
A1	--	--	0.075	--	--	0.003
D	1.000	0.950	1.050	0.039	0.037	0.041
E	0.600	0.550	0.650	0.024	0.022	0.026
b	0.500	0.450	0.550	0.020	0.018	0.022
L	0.350	0.300	0.400	0.014	0.012	0.016
L1	0.050 REF			0.002 REF		
e	0.600 BSC			0.024 BSC		

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