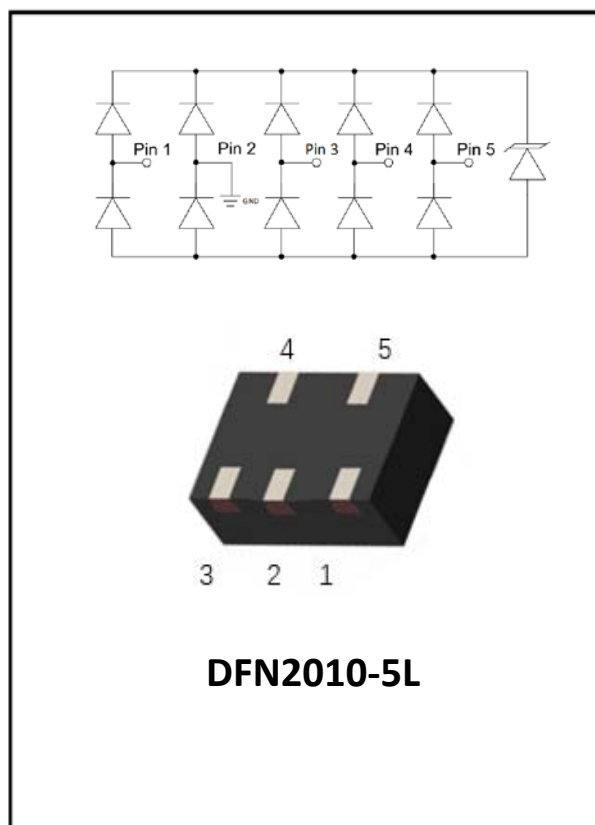


1-Line , Bi-directional , Transient Voltage Suppressor



Features

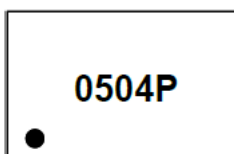
- Ultra small package
- Stand-off voltage: 5V
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 20\text{kV}$ (contact)
IEC61000-4-4 (EFT): 3A ($8/20\ \mu\text{s}$)
- Low clamping voltage
- Compliant

Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

Mechanical Characteristics

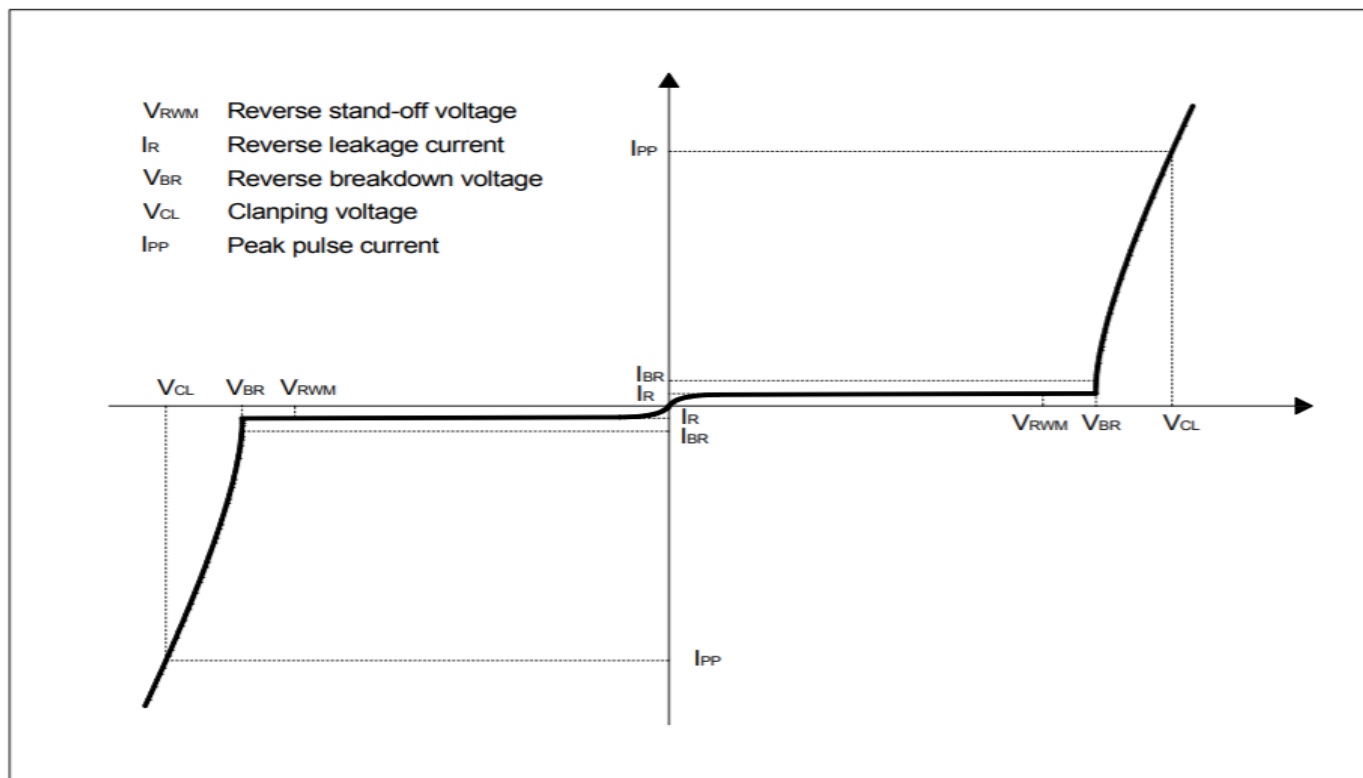
- Package: DFN2010-5L
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



0504P = Device Marking Code

Dot denotes Pin1

■Definitions of electrical characteristics



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

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	50	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	3	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±25	KV
ESD according to IEC61000-4-2 contact discharge		±20	KV
Junction temperature	T_J	-55~125	°C
Operating temperature	T_{OP}	-40~85	°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				5
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$			0.2
Reverse breakdown voltage	V_{BR}	V	$I_T = 1mA$	6		
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$			10
		V	$I_{PP} = 3A, t_p = 8/20\mu s$			17
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		0.2	

Notes:

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

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDULC0504PCB	F1	Approximate 1.37	3000	30000	120000	7" reel

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

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

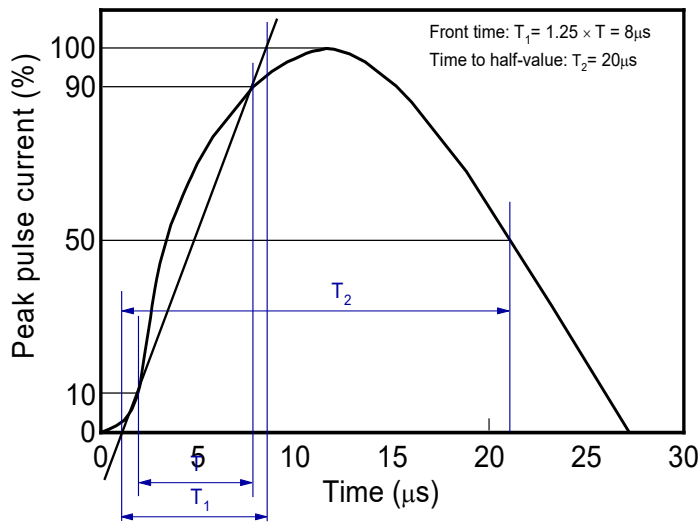


Fig.2 Contact discharge current waveform per IEC61000-4-2

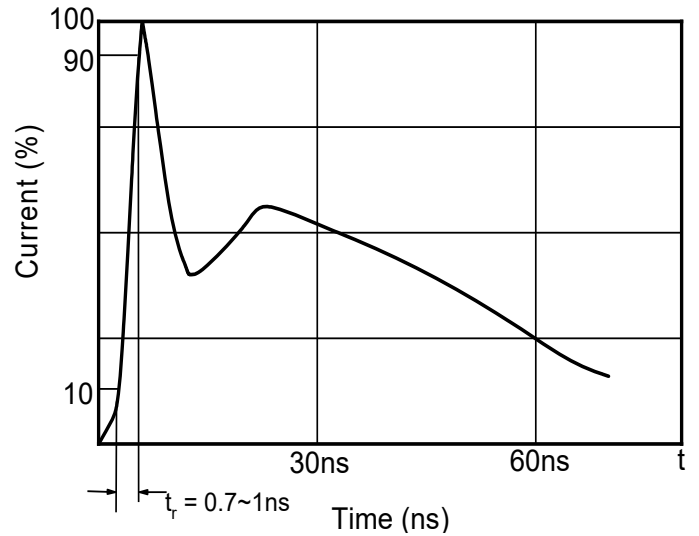


Fig.3 Clamping voltage vs. Peak pulse current

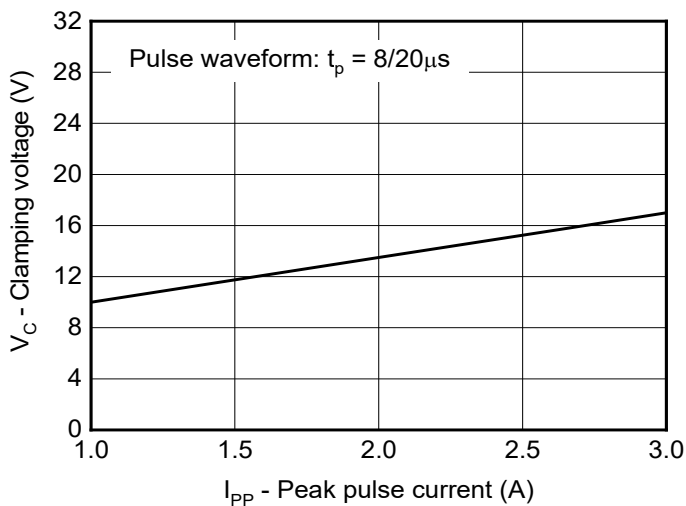


Fig.4 Capacitance vs. Reverse voltage

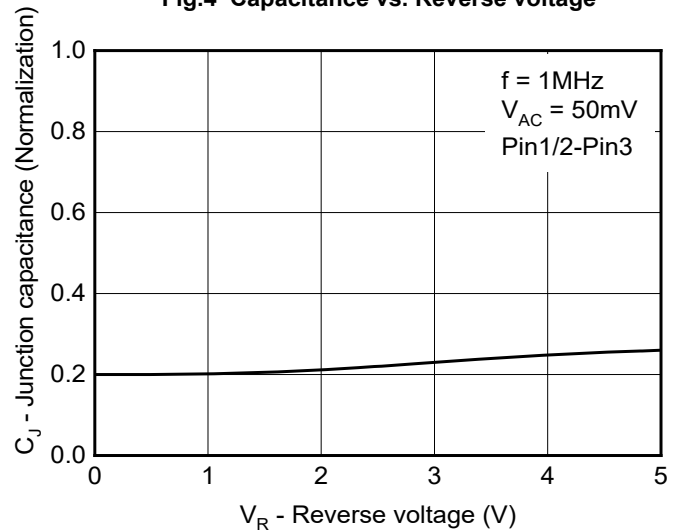


Fig.5 Non-repetitive peak pulse power vs. Pulse time

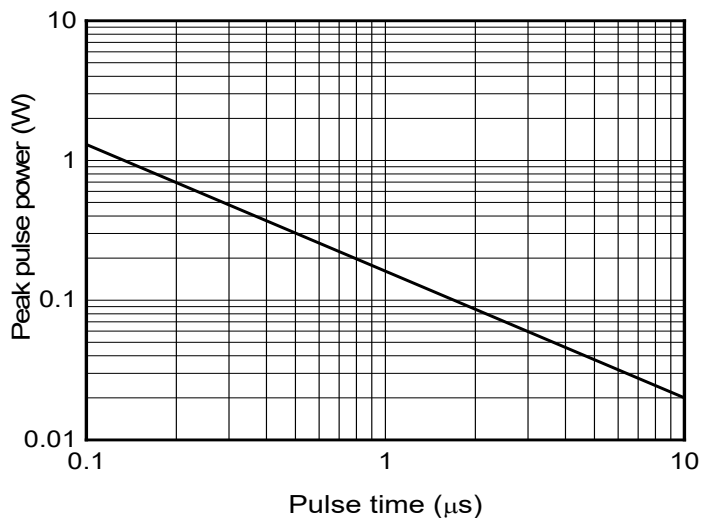


Fig.6 Power derating vs. Ambient temperature

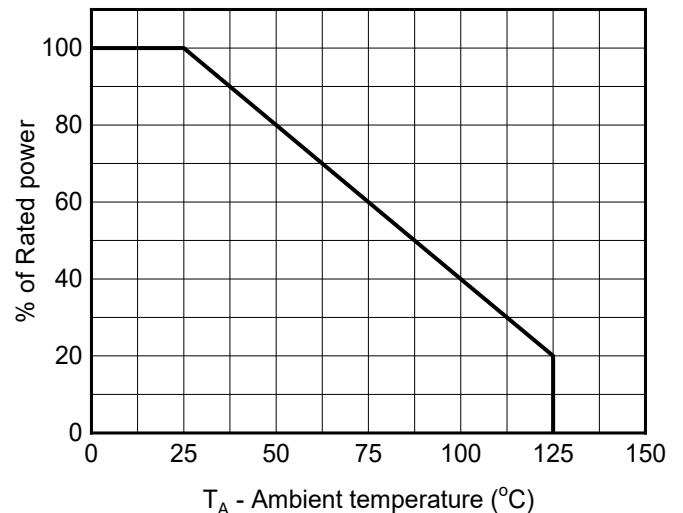


Fig.7 TLP Measurement

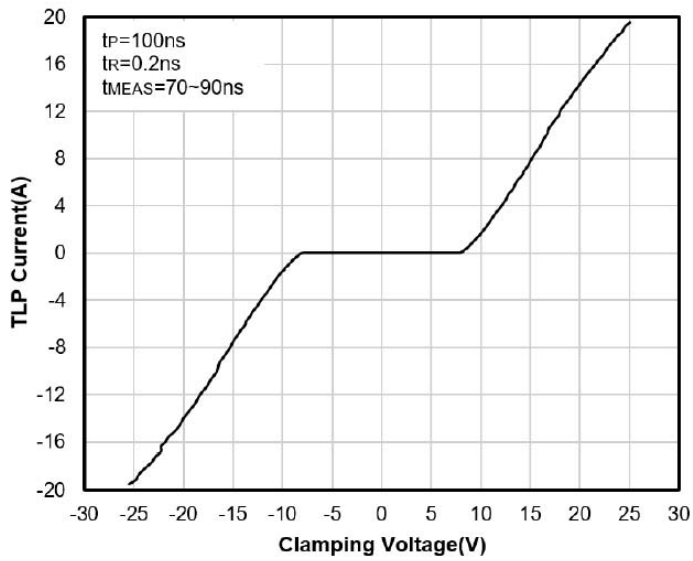
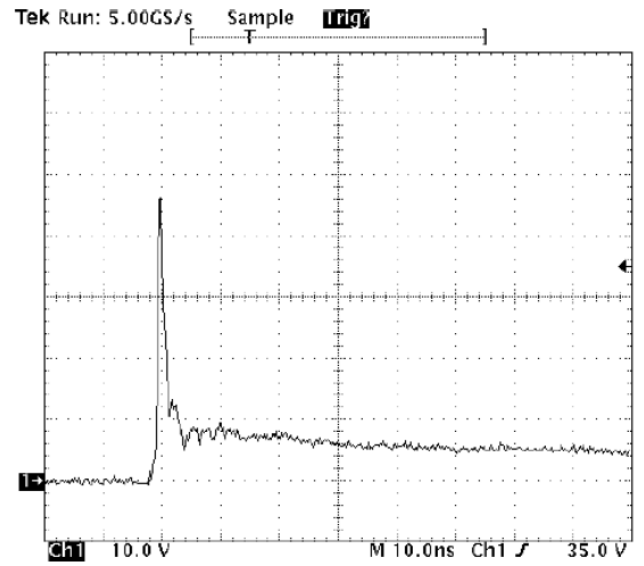
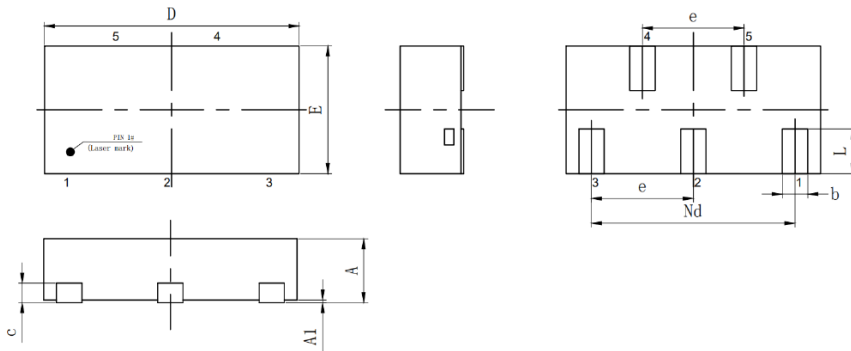


Fig.8 ESD clamping
8 kV Contact per IEC61000-4-2



Outline Dimensions



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
c	0.152 REF		
D	1.95	2.00	2.05
Nd	1.60 BSC		
e	0.80 BSC		
E	0.95	1.00	1.05
L	0.25	0.35	0.40

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