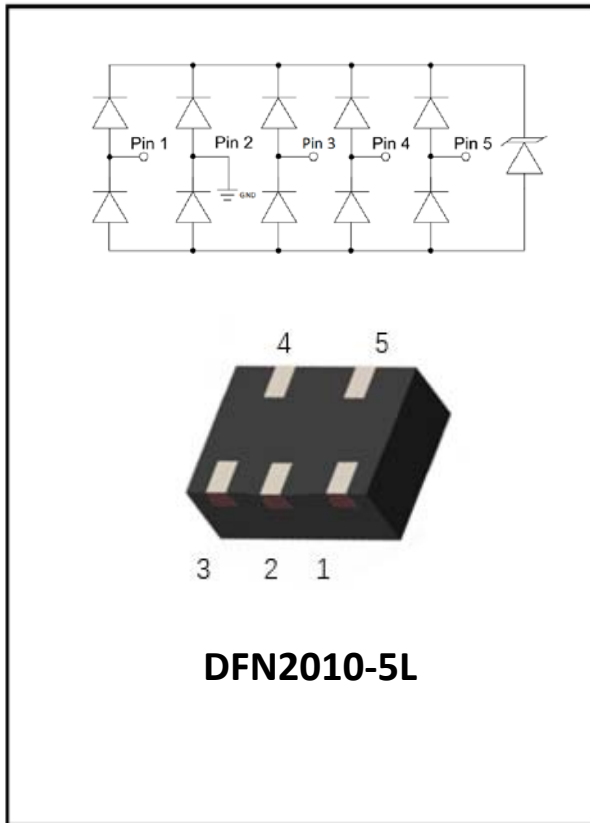


## 1-Line , Bi-directional , Transient Voltage Suppressor



### Features

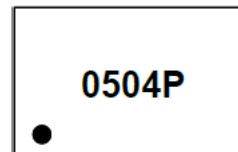
- Ultra small package
- Stand-off voltage: 5V
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 20\text{kV}$  (contact)  
IEC61000-4-4 (EFT): 3A (8/20  $\mu\text{s}$ )
- Low clamping voltage
- RoHS Compliant

### Applications

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

### Mechanical Characteristics

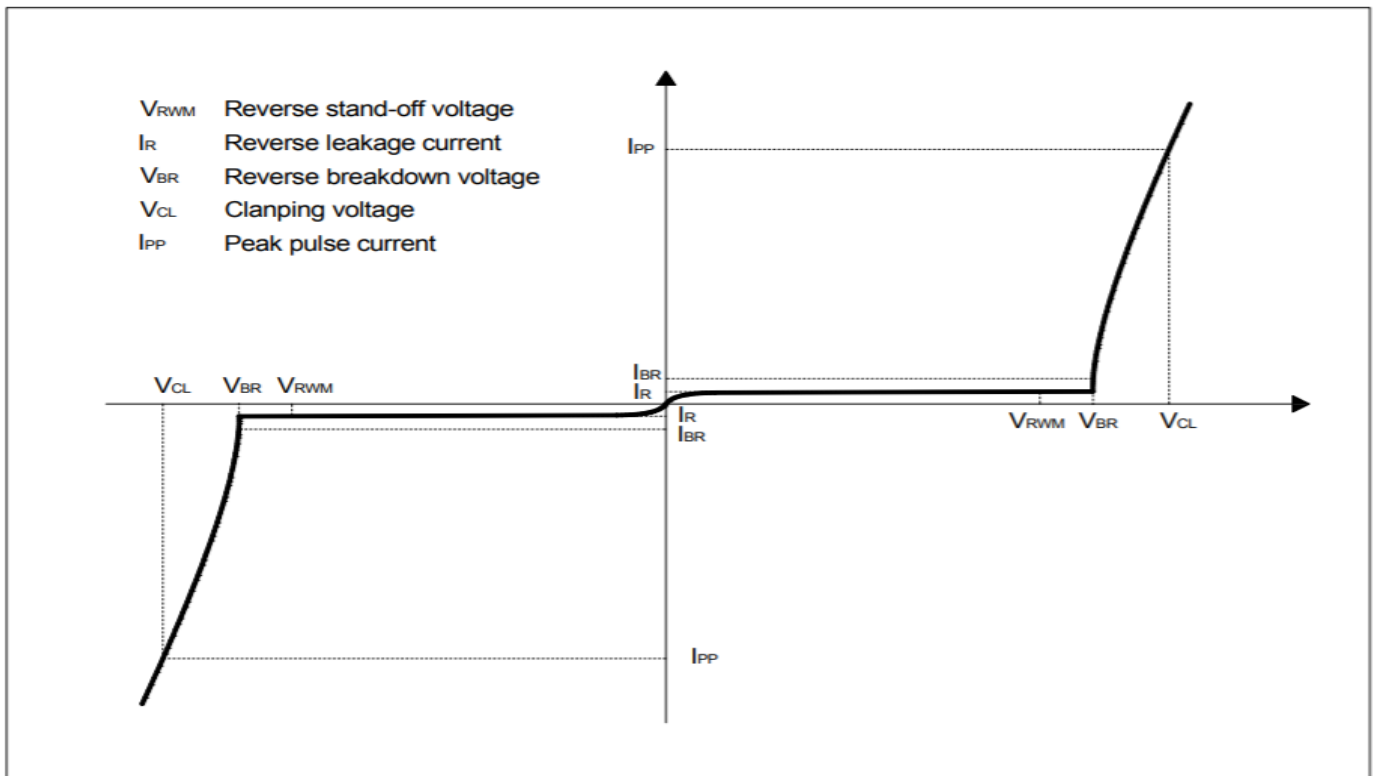
- Package: DFN2010-5L
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



0504P = Device Marking Code

Dot denotes Pin1

### ■Definitions of electrical characteristics





# ESDULC0504PCB

## ■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	$V_{ESD}$	$\pm 25$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 20$	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	$I_R$	$\mu A$	$V_{RWM} = 5V$			0.2
Reverse breakdown voltage	$V_{BR}$	V	$I_T = 1mA$	6		
Clamping voltage <sup>1)</sup>	$V_{CL}$	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. (8/20 $\mu s$  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



# ESDULC0504PCB

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

Fig.1 8/20 $\mu\text{s}$  waveform per IEC61000-4-5

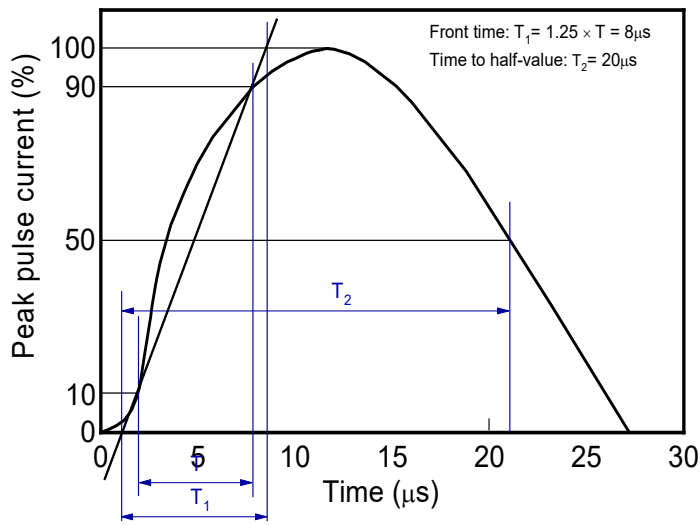


Fig.2 Contact discharge current waveform per IEC61000-4-2

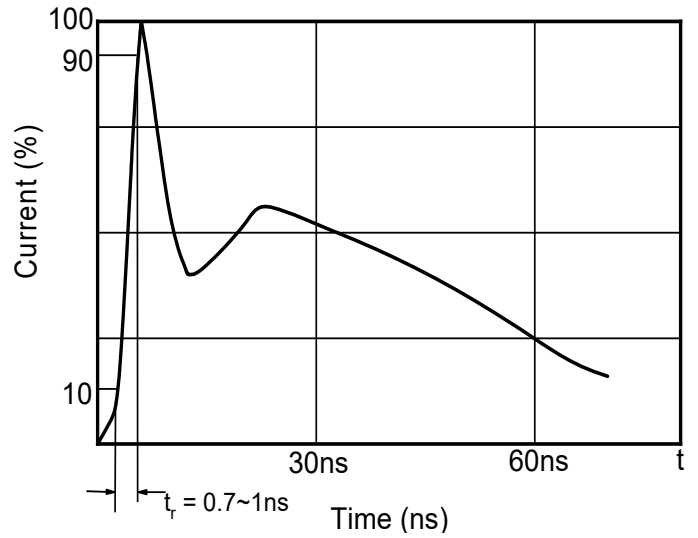


Fig.3 Clamping voltage vs. Peak pulse current

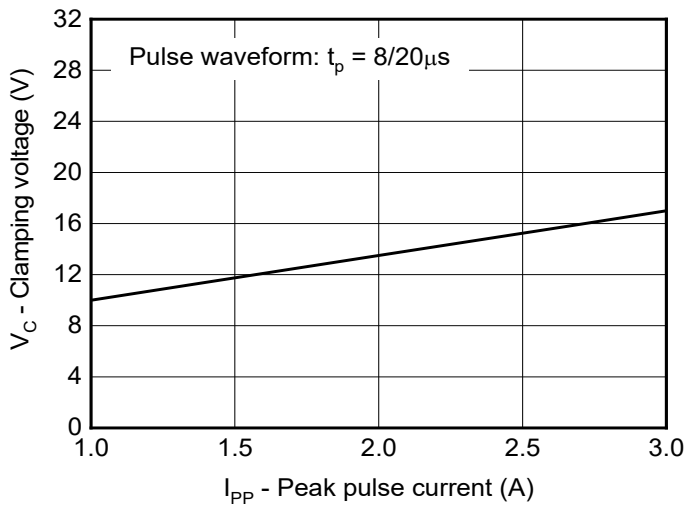


Fig.4 Capacitance vs. Reverse voltage

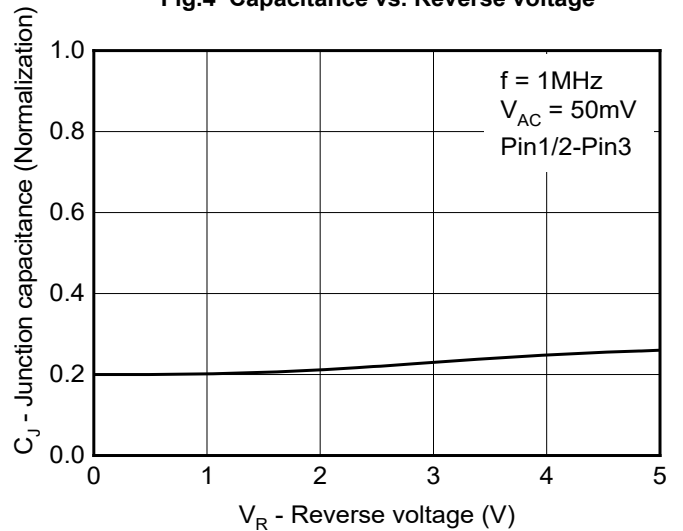


Fig.5 Non-repetitive peak pulse power vs. Pulse time

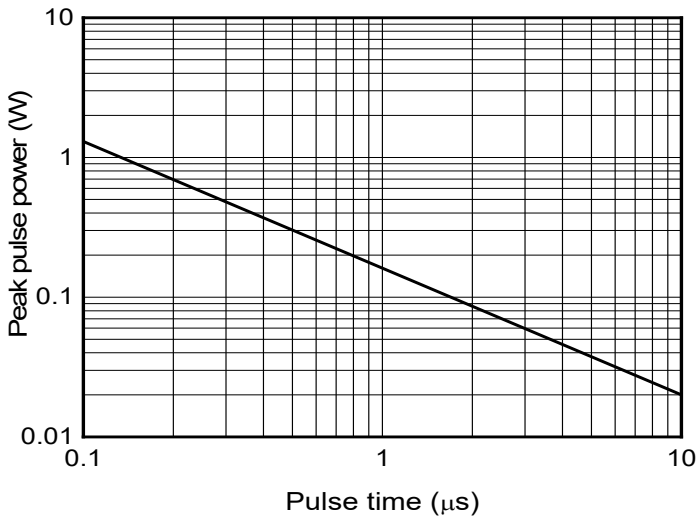


Fig.6 Power derating vs. Ambient temperature

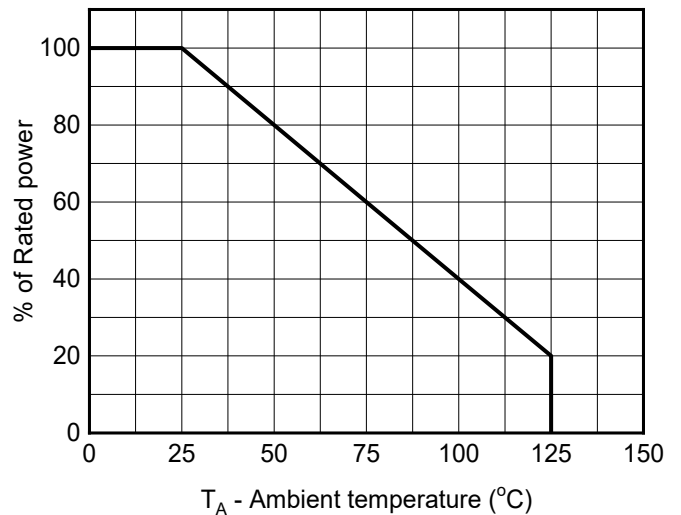


Fig.7 TLP Measurement

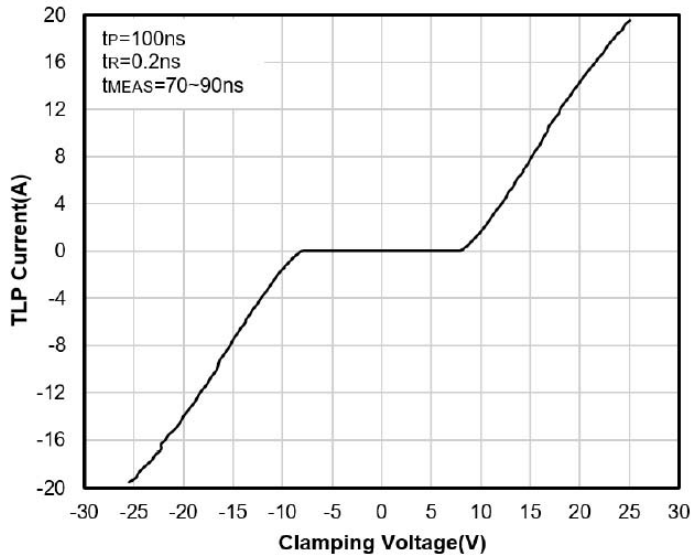
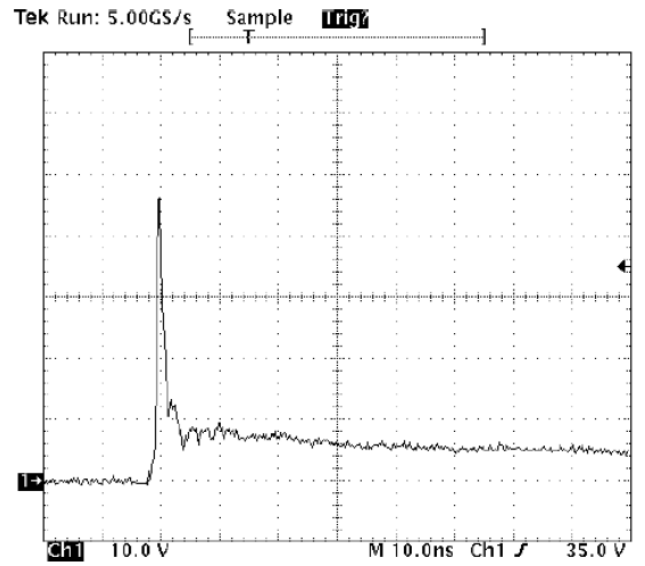
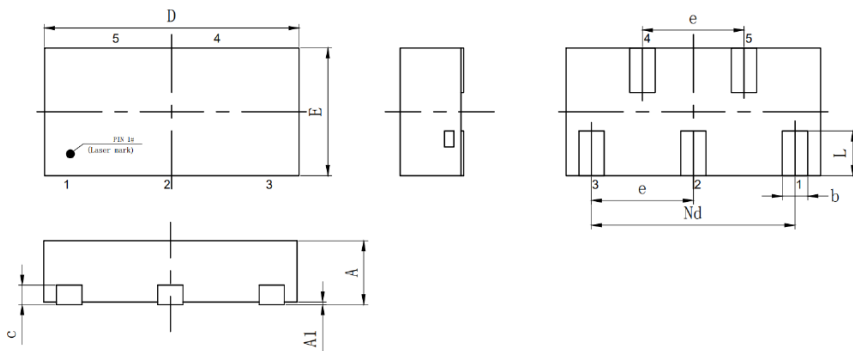


Fig.8 ESD clamping  
8 kV Contact per IEC61000-4-2



## 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



## Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.