



# PE1605C2A

## Ultra Low Capacitance ESD Protection

**Voltage**

**5 V**

### Features

- IEC61000-4-2(ESD) : ±20kV Air, ±15kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 4A(8/20μS)
- Low leakage current, maximum of 50nA at rated voltage
- Ultra low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

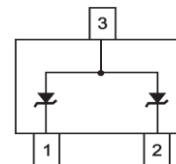
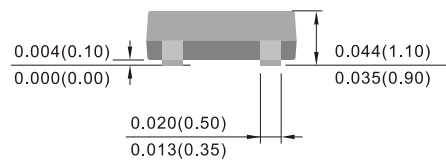
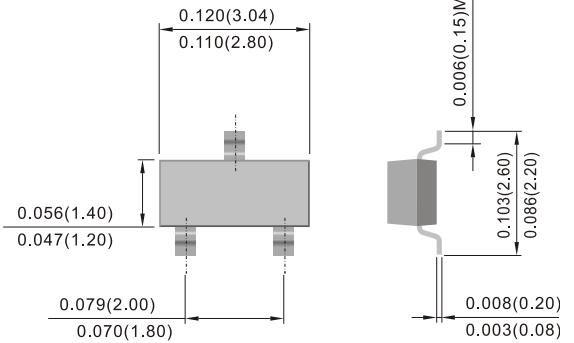
- Case: Molded plastic, SOT-23

### Applications

- USB 3.0 Data Line Protection
- Mobile Phones and accessories
- Hand held portable
- Digital Cameras
- Computer Interfaces Protection
- Serial and Parallel Ports Protection
- Control Signal Lines Protection

**SOT-23**

**Unit: inch(mm)**



### Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNITS
ESD IEC61000-4-2(Air)	$V_{ESD}$	±20	kV
ESD IEC61000-4-2(Contact)		±15	
Operating Junction Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C



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### Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 1)</sup>	$V_{RWM}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1\text{mA}$	5.5	-	-	V
Reverse Leakage Current	$I_R$	$V_R=5.0\text{V}$	-	-	50	nA
Clamping Voltage	$V_{CL}$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$ , any I/O pins to GND	-	-	10	V
		$I_{PP}=4\text{A}$ , $t_p=8/20\mu\text{s}$ , any I/O pins to GND	-	-	15	V
Clamping Voltage TLP <sup>(Note 2)</sup>	$V_{CL}$	$I_{PP}=8\text{A}$ , $t_p=100\text{ns}$ , any I/O pins to GND	-	16	-	V
		$I_{PP}=16\text{A}$ , $t_p=100\text{ns}$ , any I/O pins to GND	-	23.5	-	V
Dynamic Resistance	$R_{DYN}$	$t_p=100\text{ns}$	-	0.94	-	$\Omega$
Off State Junction Capacitance	$C_J$	2.5Vdc Bias $f=1\text{MHz}$ , any I/O pins to GND	-	0.3	0.35	pF
		2.5Vdc Bias $f=1\text{MHz}$ , Between any I/O pins	-	0.2	-	pF

Note :

1. A transient suppressor is selected according to the working peak reverse voltage ( $V_{RWM}$ ), which should be equal to or greater than the DC or continuous peak operation voltage level.
2. Testing using Transmission Line Pulse (TLP) conditions:  $Z_0 = 50\Omega$ ,  $t_p = 100\text{ ns}$ .



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## TYPICAL CHARACTERISTIC CURVES

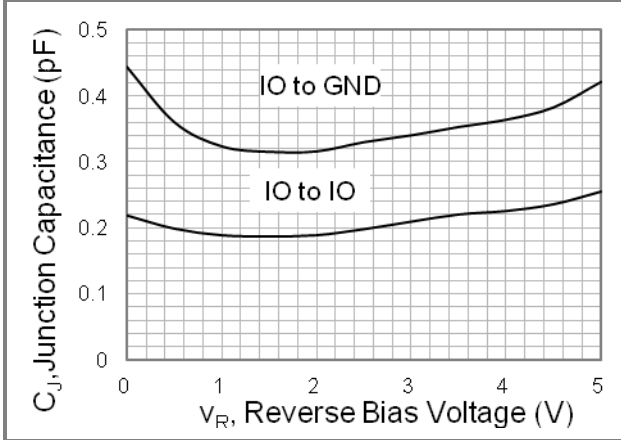


Fig.1 Typical Junction Capacitance

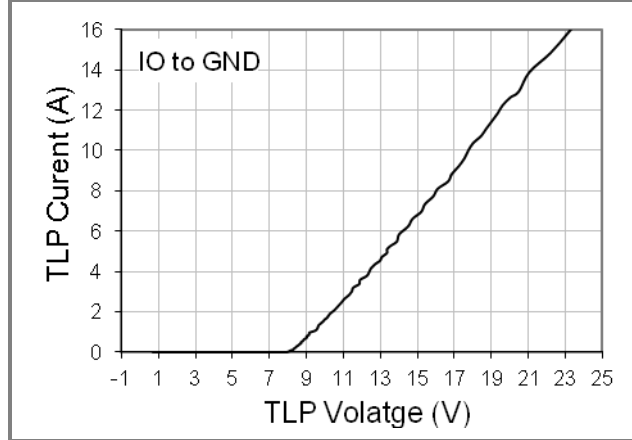


Fig.2 Transmission Line Pulsing (TLP) Measurement

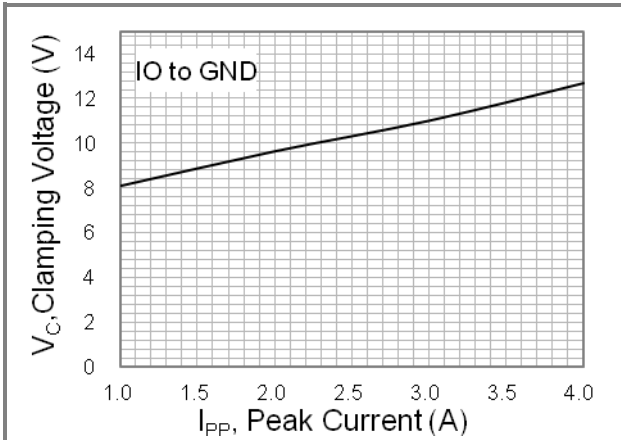


Fig.3 Typical Peak Clamping Voltage(8/20 $\mu$ s)

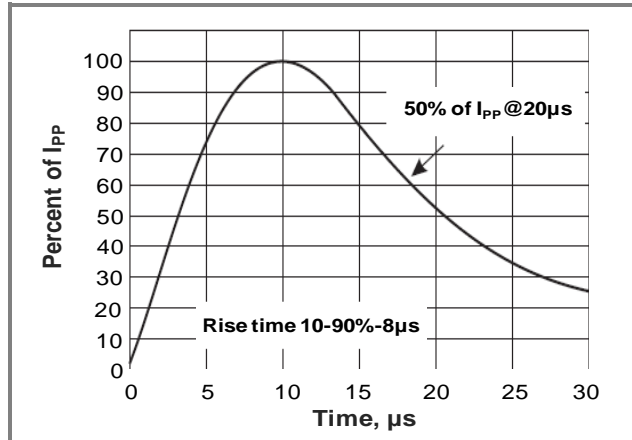


Fig.4 8/20 $\mu$ s Pulse Waveform

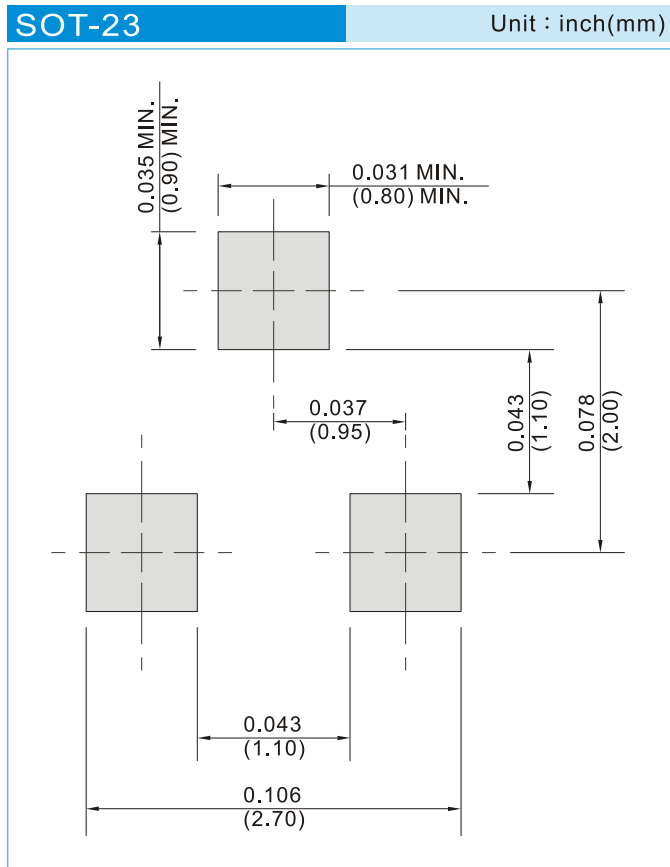


# PE1605C2A

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1605C2A_R1_00001	SOT-23	3K pcs / 7" reel	KCC	Halogen free
PE1605C2A_R2_00001	SOT-23	12K pcs / 13" reel	KCC	Halogen free

## Mounting Pad Layout





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