



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

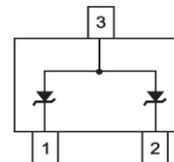
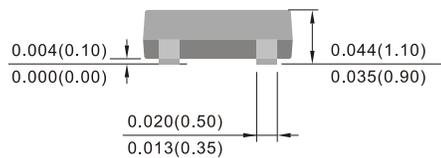
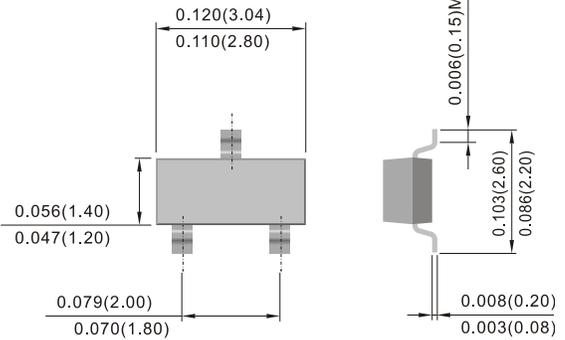
- Case: Molded plastic, SOT-23

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 ^(Note 1)	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 ^(Note 2)	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	-	Ω
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

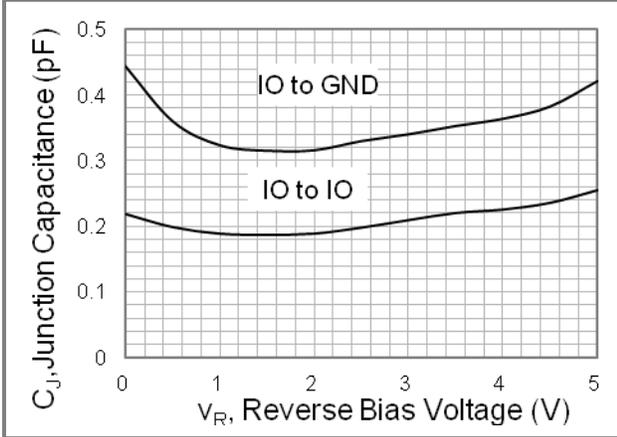


Fig.1 Typical Junction Capacitance

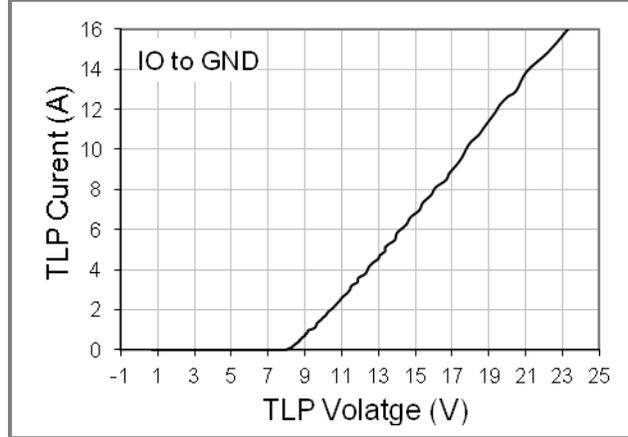


Fig.2 Transmission Line Pulsing (TLP) Measurement

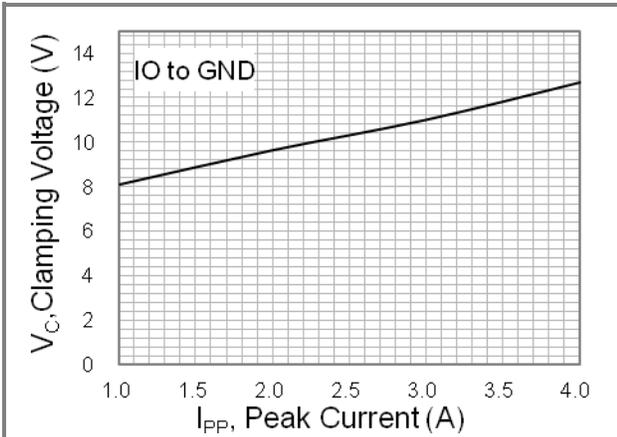


Fig.3 Typical Peak Clamping Voltage(8/20 μ s)

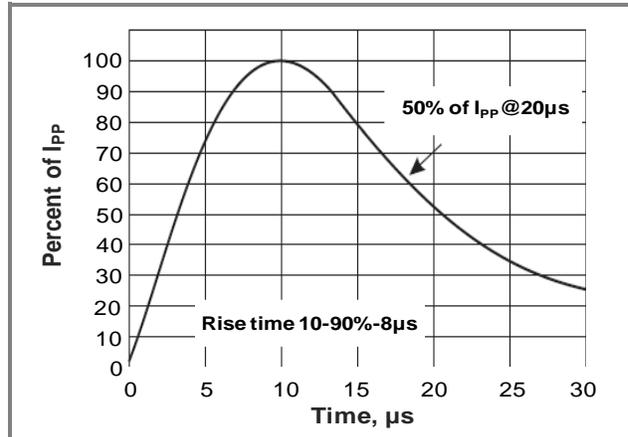


Fig.4 8/20 μ s Pulse Waveform

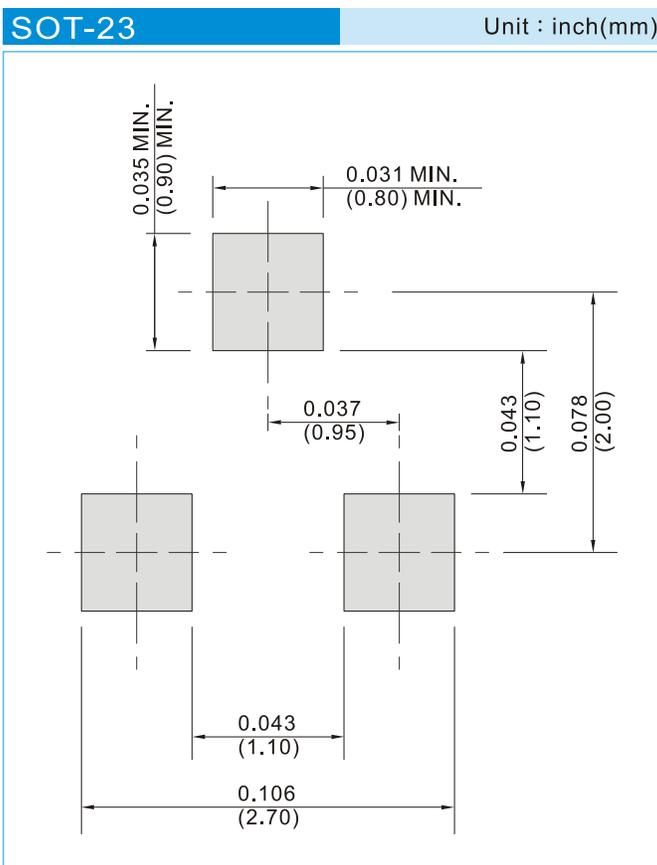


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Part No Packing Code Version

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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