

Features

- Uni-directional ESD protection of four lines
- 60W Peak pulse Power (8/20us)
- Working voltage: 5V
- Junction Capacitance: 0.3pF(Typ) I/O to I/O
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 12\text{kV}$ contact $\pm 17\text{kV}$ air
- IEC 61000-4-5 (Lightning) 4.5A (8/20 μs)

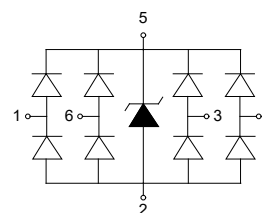
Applications

- USB 2.0
- Monitors and flat panel displays
- 10/100/1000 ethernet
- Notebook computers
- SIM ports
- ATM interface

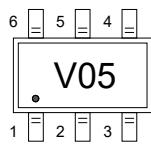
Mechanical Data

- Package: SOT-23-6L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
IP4220CZ6	SOT-23-6L		3000 Tape & Reel	7 inches

Absolute Maximum Rating($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

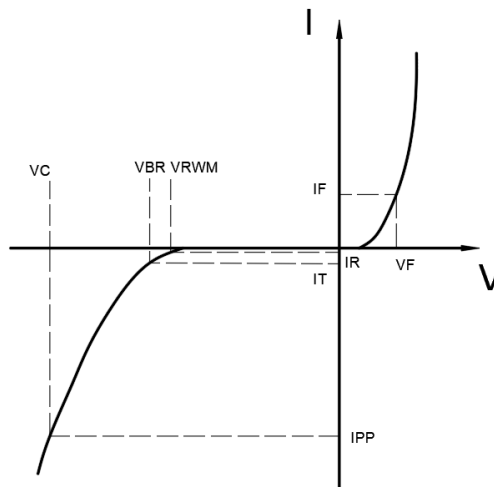
Parameters	Symbol	Min.	Max.	Unit
Peak pulse power ($t_p=8/20\mu\text{s}$)@ 25°C	Ppk	-	60	W
Peak pulse current ($t_p=8/20\mu\text{s}$)@ 25°C	IPP		4.5	A
ESD (IEC61000-4-2 air discharge) @ 25°C	VESD	-	±17	kV
ESD (IEC61000-4-2 contact discharge) @ 25°C	VESD	-	±12	kV
Junction temperature	TJ	-	150	$^{\circ}\text{C}$
Operating temperature	TOP	-40	125	$^{\circ}\text{C}$
Storage temperature	TSTG	-55	150	$^{\circ}\text{C}$
Lead temperature	TL	-	260	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	VRWM				5	V
Breakdown Voltage	VBR	IT = 1mA	6			V
Reverse Leakage Current	IR	VRWM = 5V			1	μA
Holding Voltage	VC	IPP=1A; $t_p=8/20\mu\text{s}$		9	11	V
Clamping Voltage	VC	IPP=4.5A; $t_p=8/20\mu\text{s}$		12	15	V
Junction Capacitance	CJ	I/O to GND; VR=0V; f=1MHz		0.6	1.0	pF
Junction Capacitance	CJ	I/O to I/O; VR=0V; f=1MHz		0.3	0.5	pF



Symbol	Parameters
VRWM	Peak Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ IPP
IF	Forward Current
VF	Forward Voltage @ IF



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

Figure1: Clamping Voltage vs. Peak Pulse Current

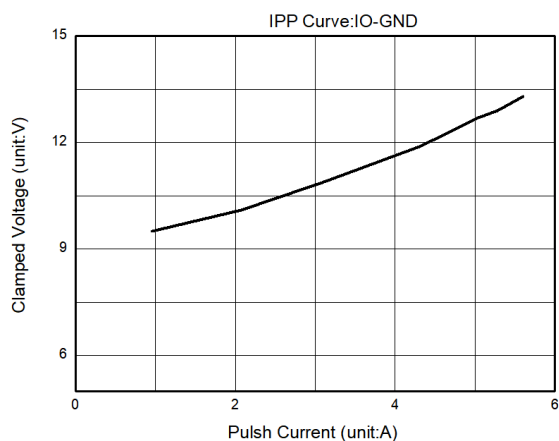


Figure2: 8 X 20us Pulse Waveform

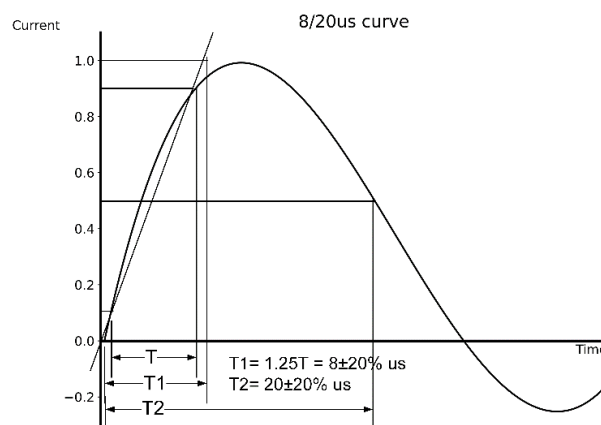


Figure3: Junction Capacitance vs. Reverse Voltage

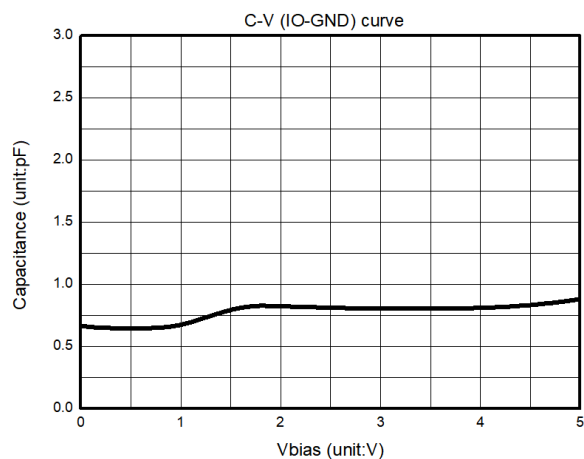


Figure4: Junction Capacitance vs. Reverse Voltage

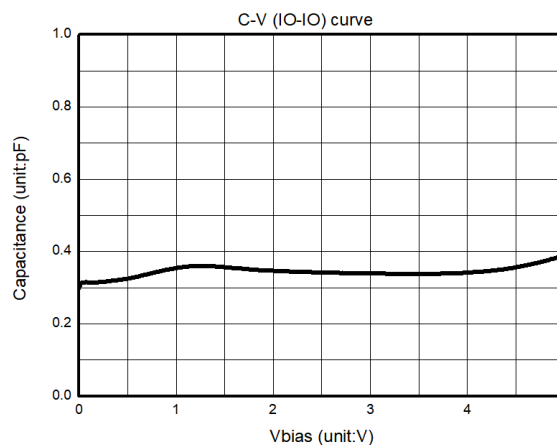




Figure5: Power derating vs. Ambient temperature

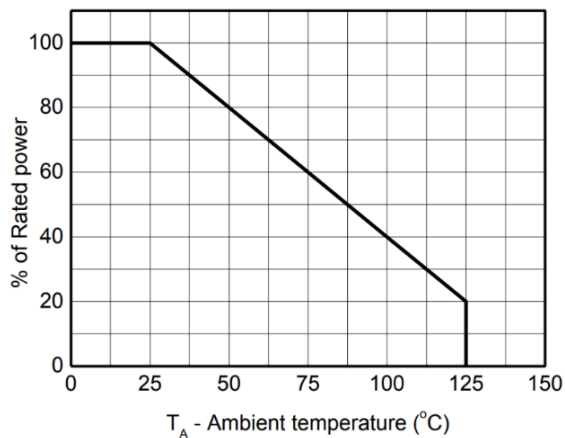
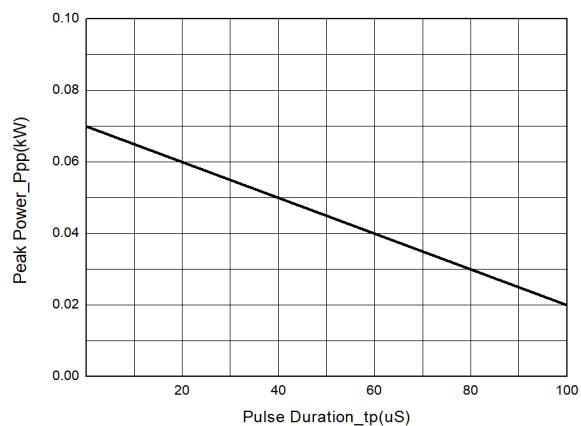
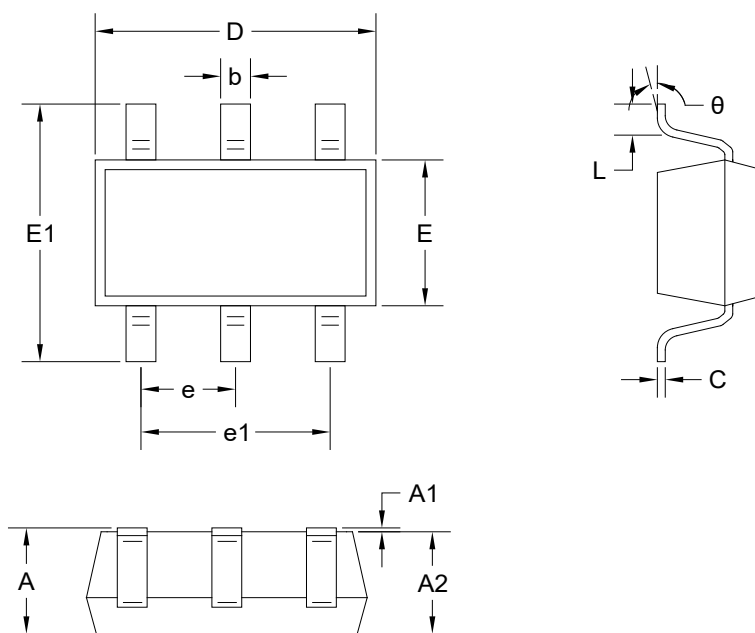


Figure6: Peak Pulse Power vs. Pulse Time



Outline Drawing – SOT-23-6L



Unit: mm

Symbol		A	A1	A2	b	c	D
Spec	Min	1.050	0.000	1.050	0.300	0.100	2.820
	Max	1.250	0.100	1.150	0.500	0.200	3.020
Symbol		E	E1	e	e1	L	θ
Spec	Min	1.500	2.650	0.950BSC	1.800	0.300	0°
	Max	1.700	2.950		2.000	0.600	8°