

Features

- Low operating voltage: 5.0V
- Low clamping voltage
- Low capacitance: 0.3pF typical
- Protects four I/O lines
- Small package saves board space
- Totally Lead-Free & Fully RoHS Compliant
- Halogen and Antimony Free. "Green" Device
- Array of surge rated diodes with internal TVS Diode
- ESD protection for high-speed data lines to IEC 61000-4-2 (ESD) $\pm 20\text{kV}$ (air), $\pm 15\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A (8/20 μs)

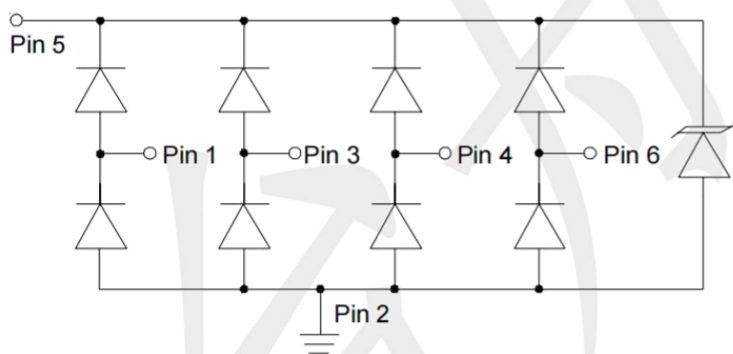
Mechanical Characteristics

- Package: SLP2020P6
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

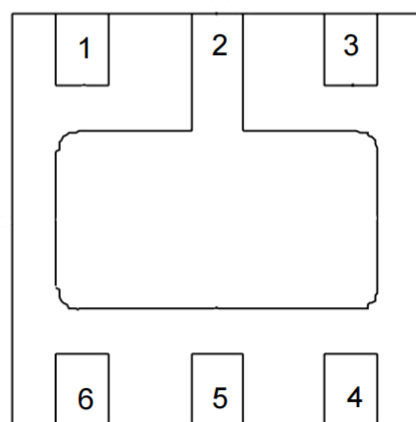
Applications

- USB 2.0 Power and Data Line Protection
- Portable Electronics
- Computers and Peripheral
- Digital visual interface
- Microcontroller Input Protection

Dimensions and Pin Configuration



Device Schematic



SLP2020P6

TPRCLAMP0504N

Low Capacitance TVS Diode Array

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

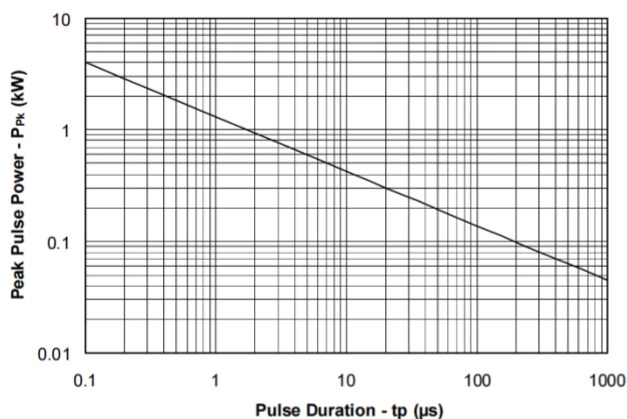
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	70	W
Peak Pulse Current (8/20μs)	Ipp	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±20 ±15	KV
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

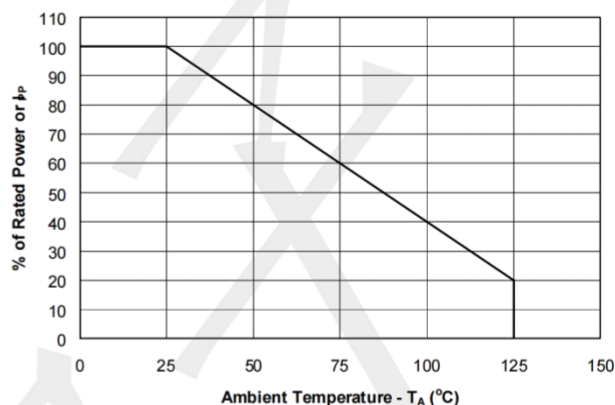
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6.5	7.0	9.0	V	IT= 1mA, Any I/O pin to ground
Reverse Leakage Current	IR	--	--	0.08	uA	VRWM=5V, Any I/O pin to ground
Forward Voltage	VF	--	0.8	1.2	V	IF = 10mA
Clamping Voltage	VC	--	--	9	V	Ipp=1A(8x 20us pulse), Any I/O pin to ground
Clamping Voltage	VC	--	--	15	V	Ipp=4A(8x 20us pulse), VCC pin to ground
Junction Capacitance	Cvo-GND	--	0.6	--	pF	VR=0V, f=1MHz, Any I/O to GND
	Ci/o- I/O	--	0.3	--	pF	VR=0V, f=1MHz, between I/O pins

Characteristic Curves

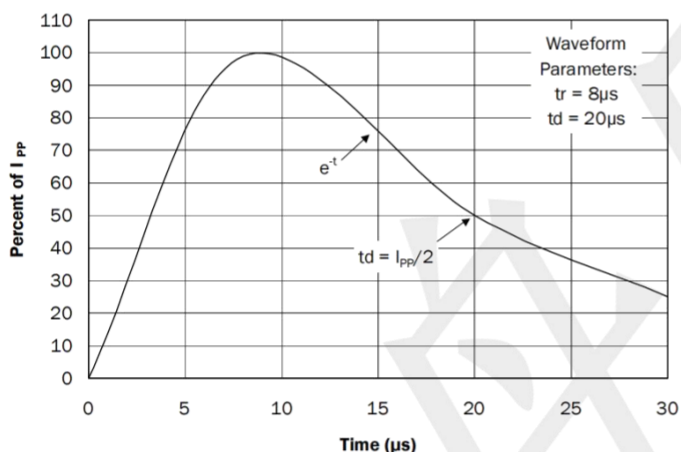
Non-Repetitive Peak Pulse Power vs. Pulse Time



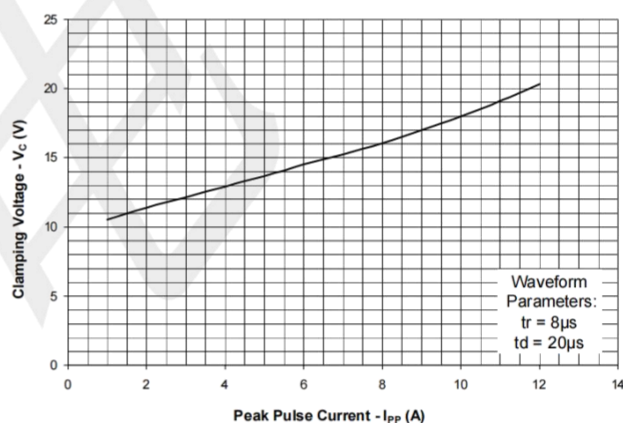
Power Derating Curve



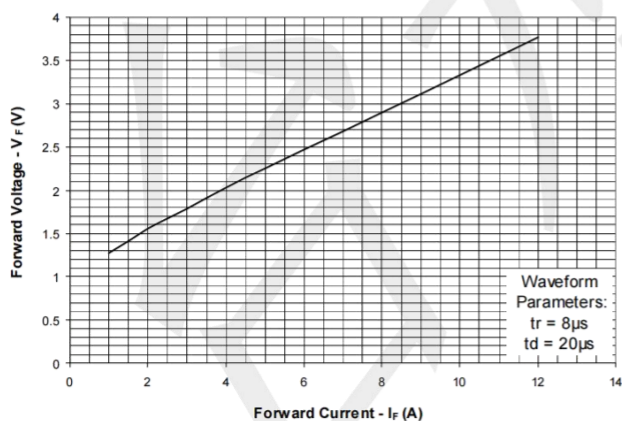
Pulse Waveform



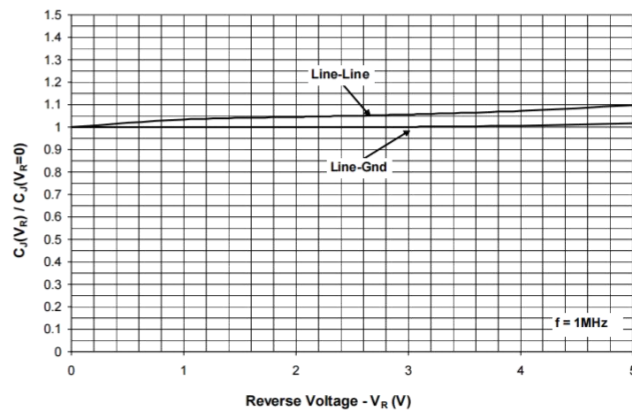
Clamping Voltage vs. Peak Pulse Current



Forward Voltage vs. Forward Current

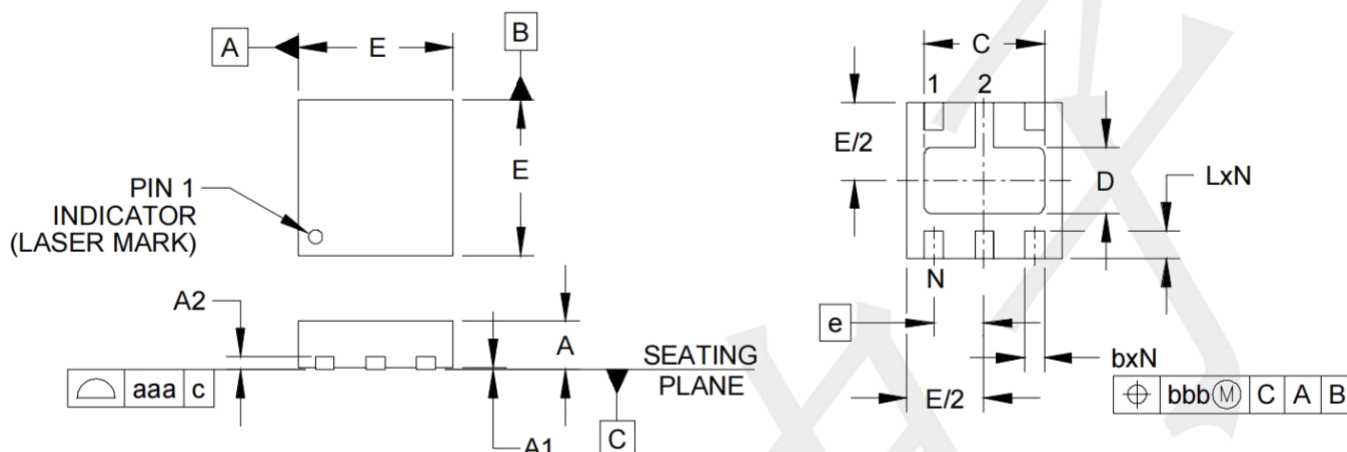


Normalized Capacitance vs. Reverse Voltage



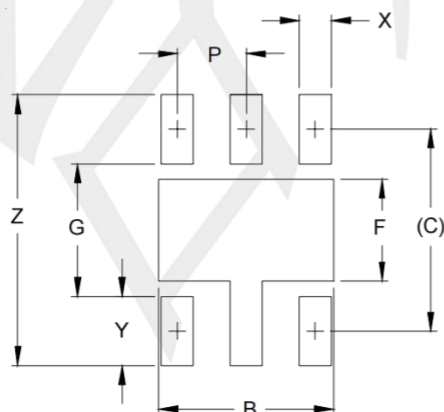
Package Outline & Dimensions

SLP2020P6



DIMENSIONS						
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.024	.026	0.50	0.60	0.65
A1	.000	.001	.002	0.00	0.03	0.05
A2	(.007)			(0.17)		
b	.007	.010	.012	0.20	0.25	0.30
C	.055	.061	.065	1.40	1.55	1.65
D	.028	.034	.038	0.71	0.86	0.96
E	.074	.079	.083	1.90	2.00	2.10
e	.025 BSC			0.65 BSC		
L	.011	.014	.016	0.30	0.35	0.40
N	6			6		
aaa	.003			0.08		
bbb	.003			0.08		

Suggested Pad Layout



DIMENSIONS		
DIM	INCHES	MILLIMETERS
B	.065	1.65
C	(.075)	(1.90)
F	.034	0.86
G	.049	1.25
P	.026	0.65
X	.014	0.35
Y	.026	0.65
Z	.100	2.55