

Features

- Low operating voltage: 5.0V
- Low clamping voltage
- Low capacitance: 0.6pF 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) 3 A (8/20 μs)

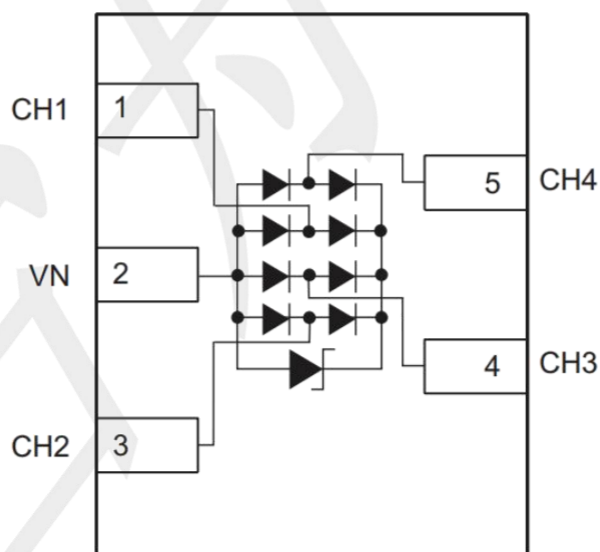
Mechanical Characteristics

- Package: DFN1308-5
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- HDMI, USB 3.0, MDDI, SATA ports
- Portable Electronics
- Computers and Peripheral
- Digital visual interface
- Microcontroller Input Protection

Dimensions and Pin Configuration



DFN1308-5

(Top View)

HSP051-4M5-TP

Ultra-Low Capacitance TVS Diode

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Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

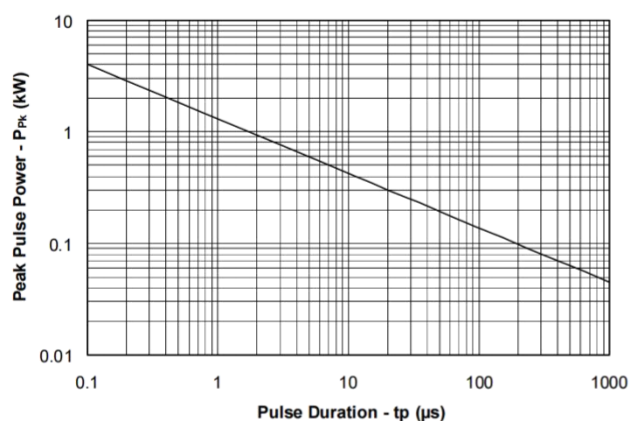
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	50	W
Peak Pulse Current (8/20μs)	Ipp	3	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±20 ±15	KV
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

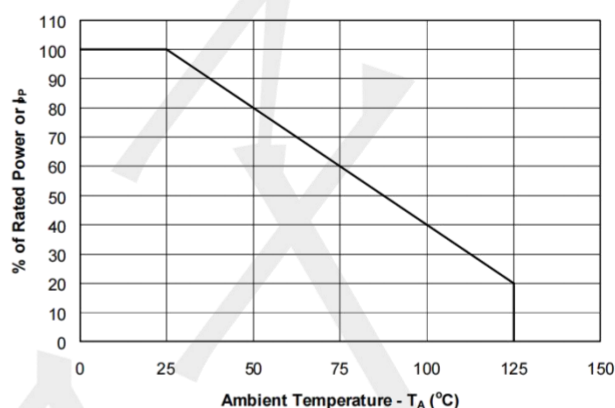
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6.5	--	9.0	V	IT= 1mA, Any I/O pin to ground
Reverse Leakage Current	IR	--	--	0.08	uA	VRWM=5V, Any I/O pin to ground
Forward Voltage	VF	--	0.8	1.2	V	IF = 10mA
Clamping Voltage	VC	--	--	9	V	Ipp=1A(8x 20us pulse), Any I/O pin to ground
Clamping Voltage	VC	--	--	12	V	Ipp=3A(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

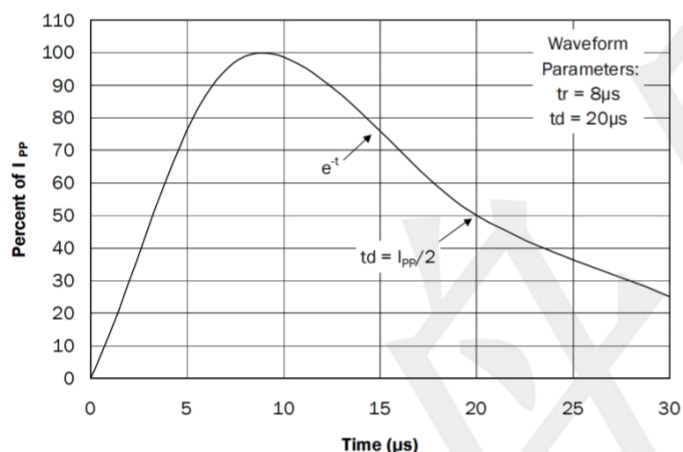
Non-Repetitive Peak Pulse Power vs. Pulse Time



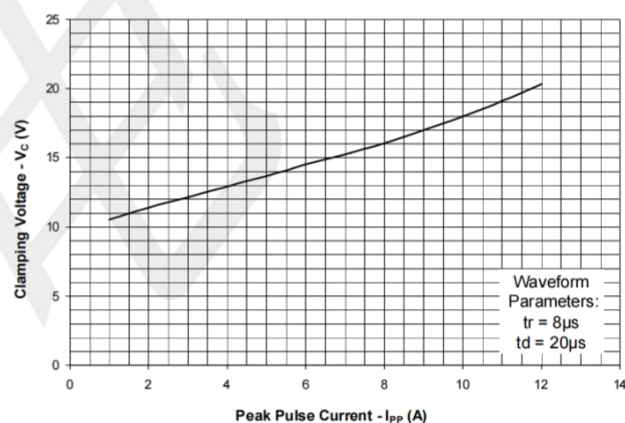
Power Derating Curve



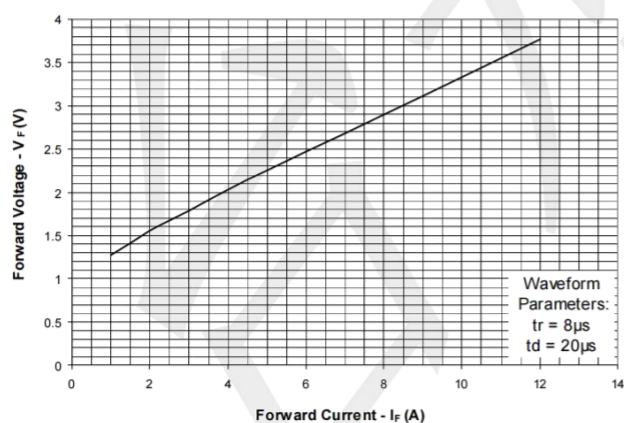
Pulse Waveform



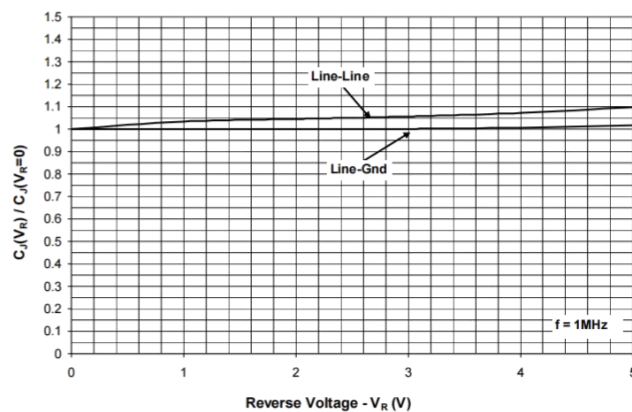
Clamping Voltage vs. Peak Pulse Current



Forward Voltage vs. Forward Current

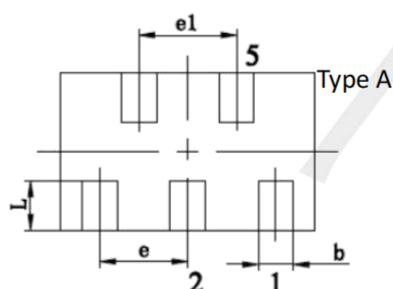
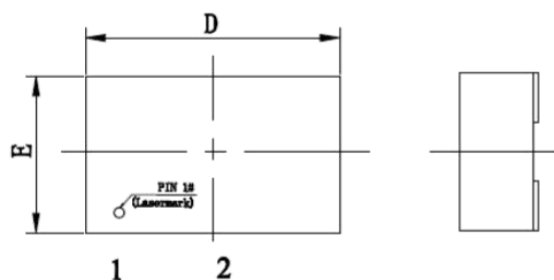


Normalized Capacitance vs. Reverse Voltage

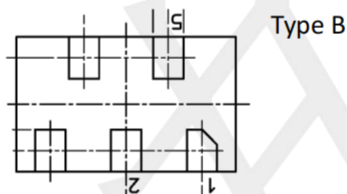
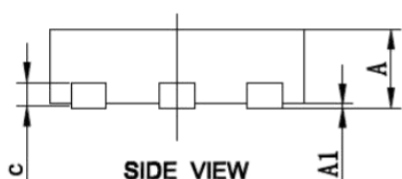


Package Outline & Dimensions

DFN1308-5

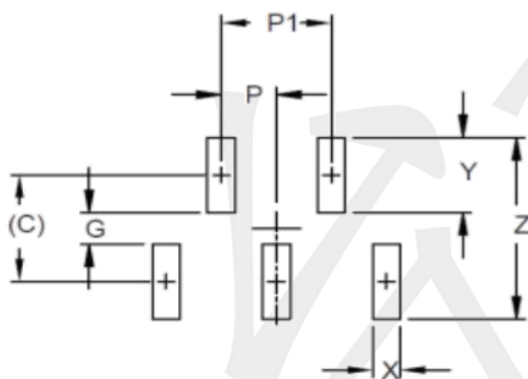


Dim	Millimeters		
	Min	Nom	Max
A	0.37	0.40	0.43
A1	0.00	0.02	0.05
b	0.13	0.18	0.23
c	0.08	0.13	0.18
D	1.20	1.30	1.40
e	0.45 BSC		
e1	0.50 BSC		
E	0.70	0.80	0.90
L	0.20	0.25	0.30



Type B is equivalent to Type A

Suggested Pad Layout



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(0.026)	(0.65)
G	0.010	0.25
P	0.010	0.25
P1	0.018	0.45
X	0.007	0.18
Y	0.016	0.40
Z	0.041	1.05