Description

DLC03P6 a 3V bidirectional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The DLC03P6 has a low capacitance, and complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±30kV contact discharge. It is assembled into a DFN1610-2 lead-free package. The small size, low capacitance and high ESD surge protection make DLC03P6 an ideal choice to protect cell phone, wireless systems, and communication equipment.

Features

- 225W peak pulse power (8/20μs)
- Ultra low capacitance ： 1.2pF typical
- Ultra low leakage：nA level
- Low Operating：3.3V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

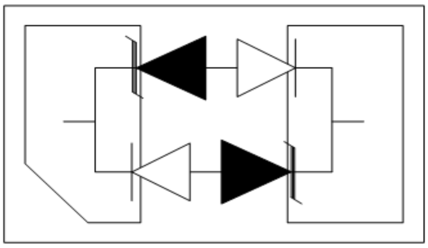
Mechanical Characteristics

- Package: DFN1610-2
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

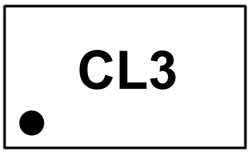
- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



CL3 = Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DLC03P6	CL3	3000/Tape & Reel	7 inch

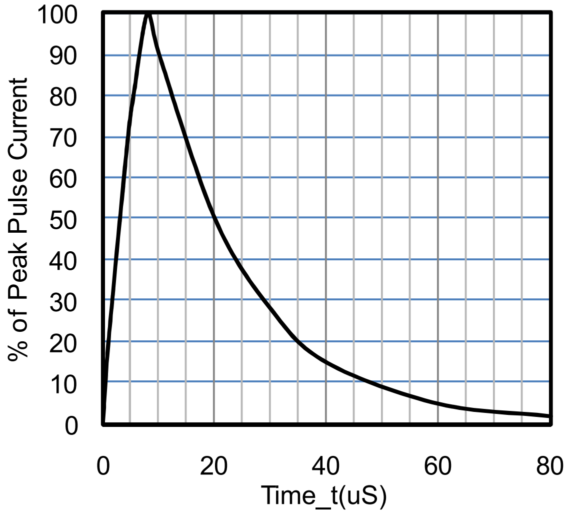
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−40 to +85	°C
Storage Temperature Range	Tstg	−55 to +150	°C

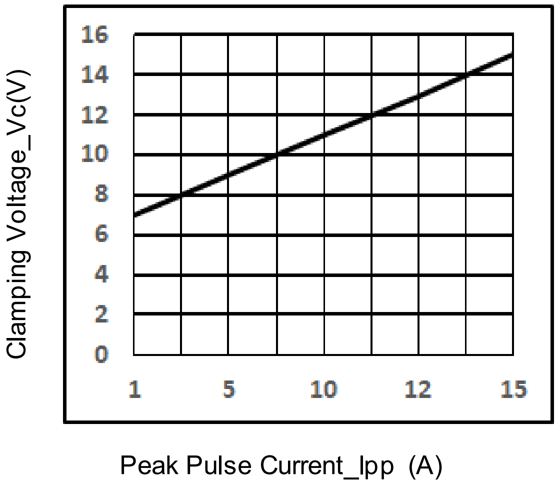
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.0	V	
Pouch-Through Voltage	V_{PT}	4.0			V	I_T = 1mA
Snap-Back Voltage	V_{SB}	3.0			V	I_{SB} = 50mA
Reverse Leakage Current	I_R			0.5	µA	V_{RWM} = 3.3V
Clamping Voltage	V_C		7		V	I_{PP} = 1A (8 x 20µs pulse)
Clamping Voltage	V_C		15		V	I_{PP} = 15A (8 x 20µs pulse)
Junction Capacitance	C_J		1.2		pF	VR = 0V, f = 1MHz

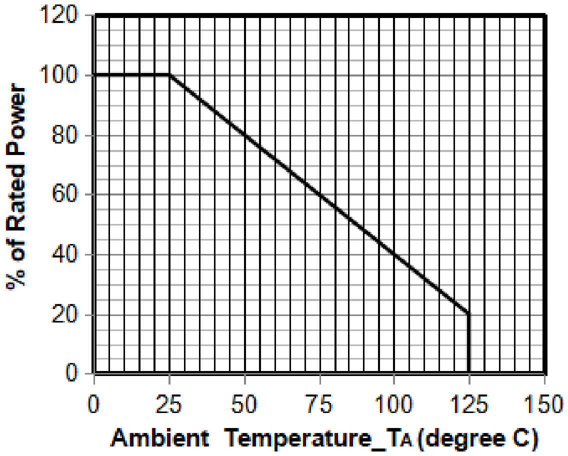
Typical Performance Characteristics (TA=25℃ unless otherwise Specified)



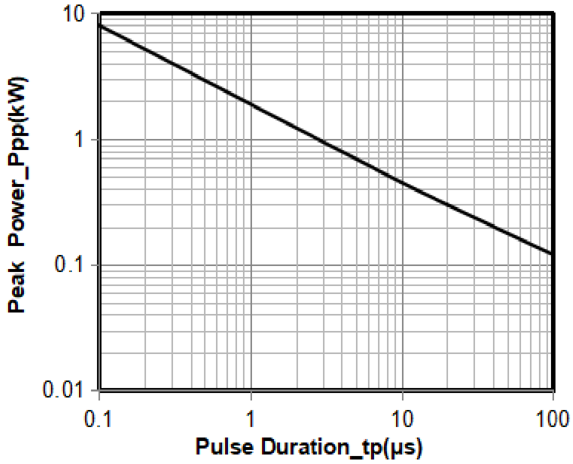
8 X 20μs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current

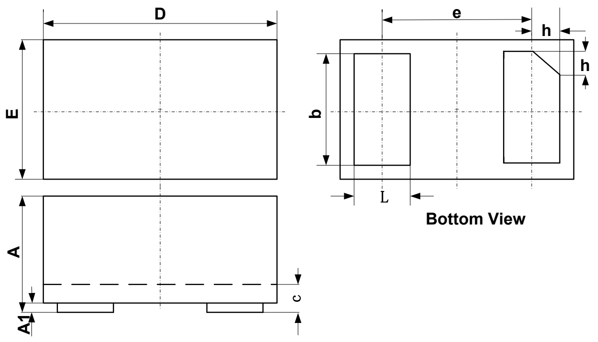


Power Derating Curve



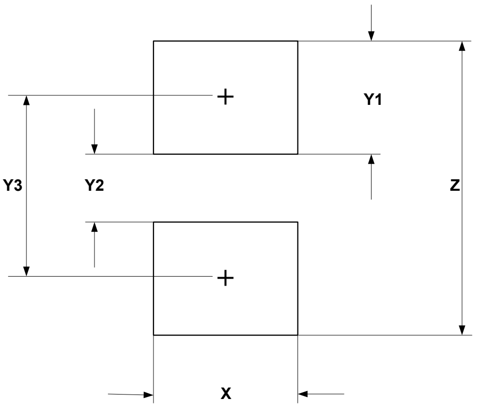
Peak Pulse Power vs. Pulse Time

DFN1610-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

Contact Information

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