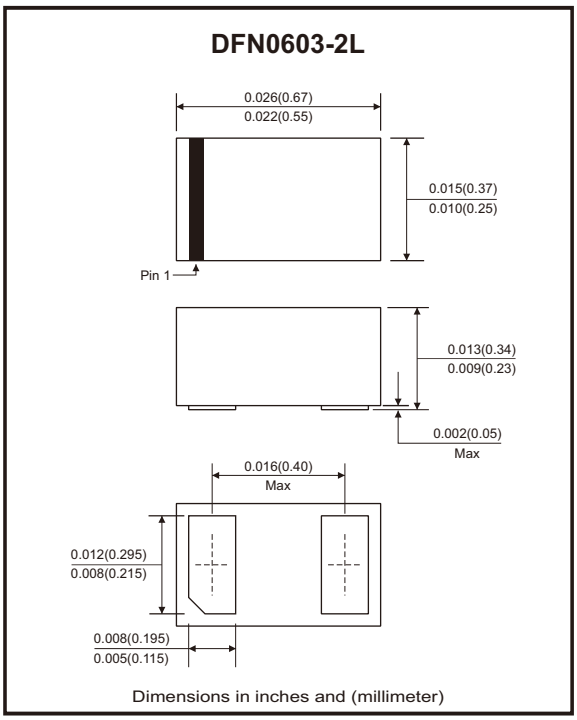
CPDZD18VSB-HF

RoHS Device
Halogen Free

Features

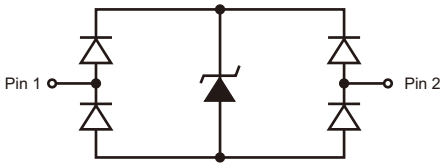
- Stand-off voltage: 18V (max).
- Transient protection for each line according to
  IEC 61000-4-2 (ESD): ±15kV (contact)
  IEC 61000-4-5 (Surge): 4A (8/20μs)
- Low leakage current.
- Low clamping voltage.
- Solid-state silicon technology.



Mechanical data

- Case: DFN0603-2L, molded plastic.
- Terminals: Tin plated leads, solderable per
  J-STD-002 and JESD22-B102.
- Mounting position: Any.

Circuit Diagram



Maximum Rating (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	T_P = 8/20μs	P_{PP}	40	W
Peak pulse current	T_P = 8/20μs	I_{PP}	4	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	±15	kV
Operating junction temperature range		T_J	-40 to +125	°C
Storage temperature range		T_{STG}	-55 to +150	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		V_{RWM}			18	V
Reverse leakage current	V_{RWM} = 18V	I_R		1	50	nA
Breakdown voltage	I_T = 1mA	V_{BR}	18.5			V
Clamping voltage (Note 1)	TLP = 16A, T_P = 100ns	V_C		10		V
Dynamic resistance (Note 1)		R_{DYN}		0.25		Ω
Clamping voltage (Note 2)	V_{ESD} = 8kV	V_C		10		V
Clamping voltage (Note 3)	I_{PP} = 1A, T_P = 8/20μs	V_C		5	6	V
	I_{PP} = 4A, T_P = 8/20μs	V_C		9	10	
Junction capacitance	V_R = 0V, f = 1MHz	C_J		0.9	3	pF

Notes: 1. TLP parameter: Z_0=50Ω, tp=100ns, tr=2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
2. Contact discharge mode, according to IEC 61000-4-2.
3. Non-repetitive current pulse, according to IEC 61000-4-5.

Typical Rating and Characteristic Curves (CPDZD18VSB-HF)

Fig.1 - 8/20μs waveform Per IEC 61000-4-5

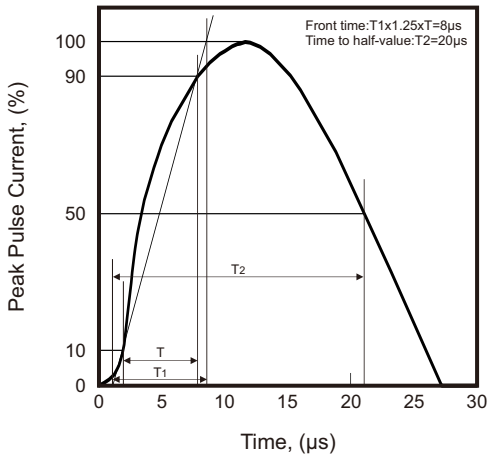


Fig.2 - Contact Discharge Current Waveform Per IEC 61000-4-2

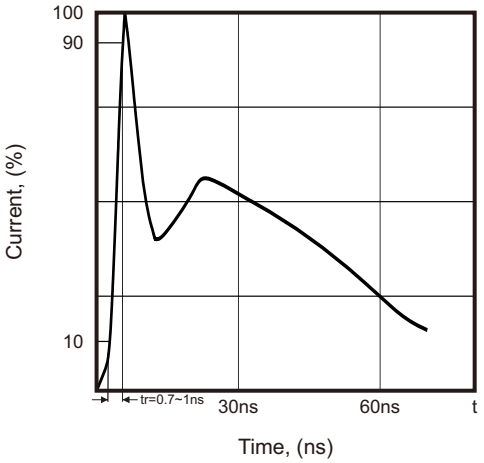


Fig.3 - Clamping Voltage vs. Peak Pulse Current

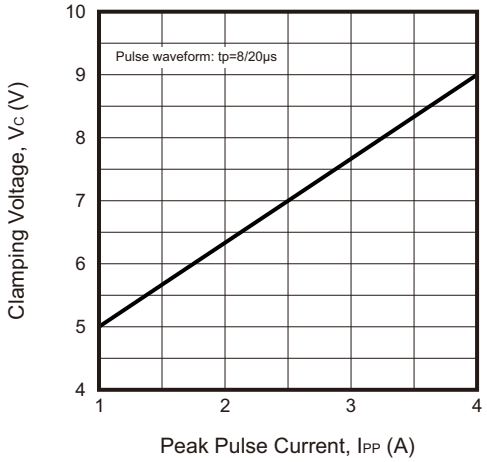


Fig.4 - Typical Capacitance Between Terminals Characteristics

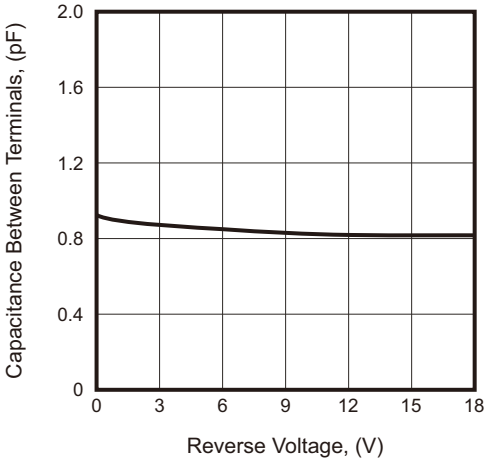


Fig.5 - Non-Repetitive Peak Pulse Power vs. Pulse Time

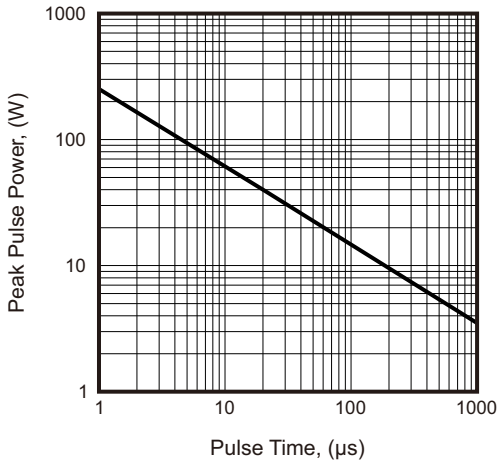
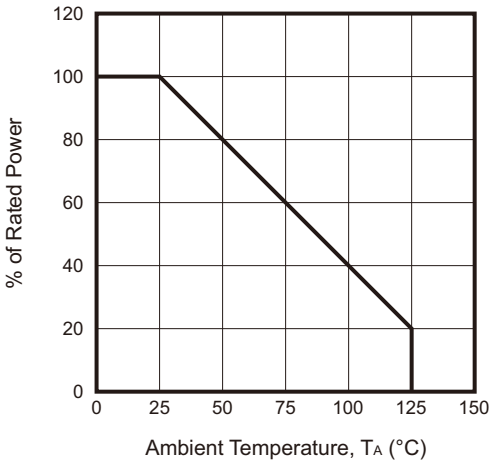


Fig.6 - Power Derating vs. Ambient Temperature



Typical Rating and Characteristic Curves (CPDZD18VSB-HF)

Fig.7 - ESD Clamping
(+8kV Contact Discharge Per IEC 61000-4-2)

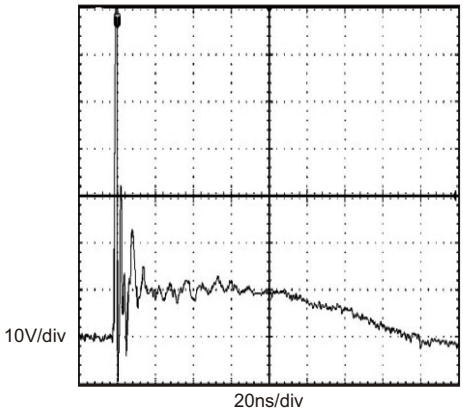


Fig.8 - ESD Clamping
(-8kV Contact Discharge Per IEC 61000-4-2)

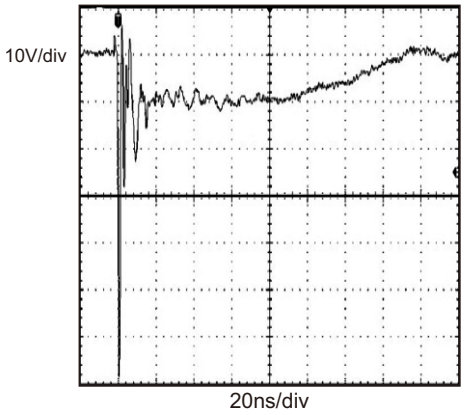
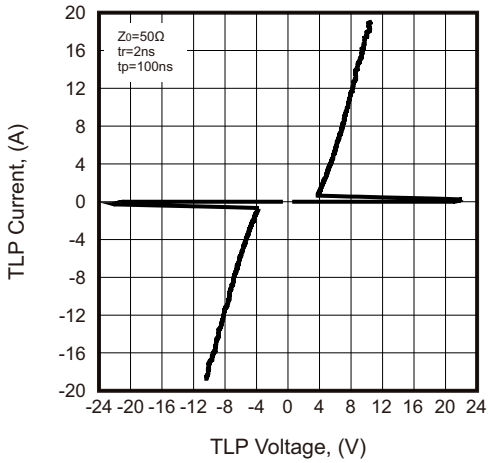
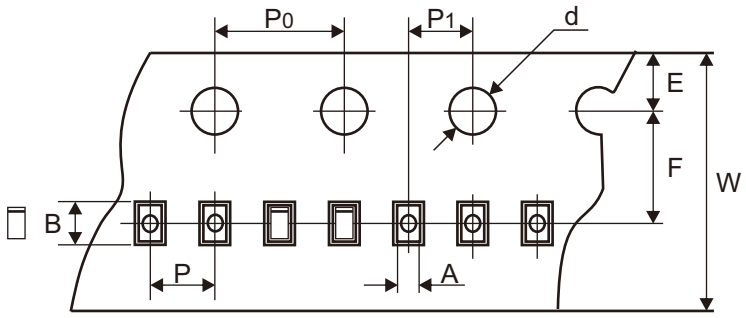
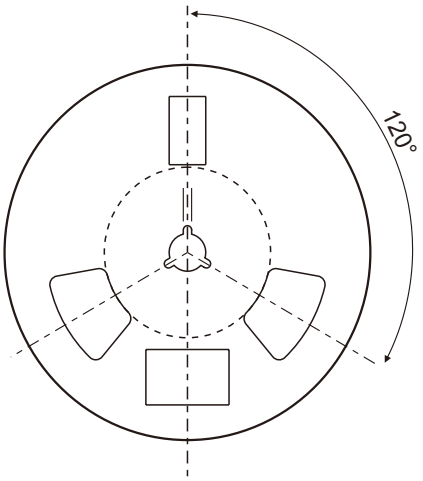


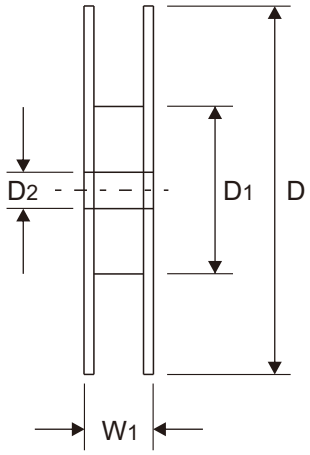
Fig.9 - TLP Measurement

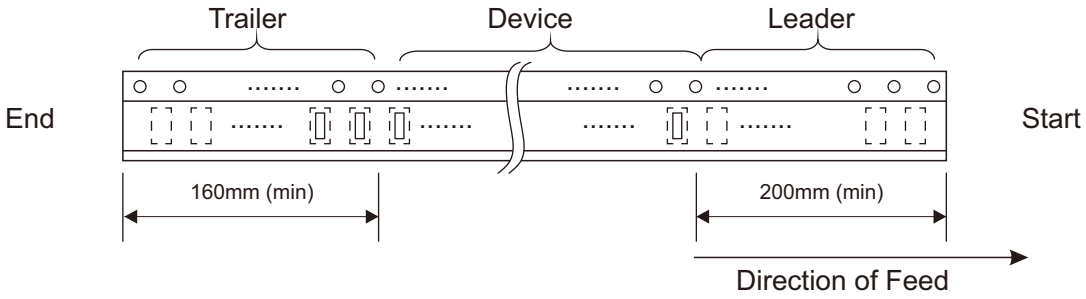


Reel Taping Specification









	SYMBOL	A	B	C	d	D	D1	D2
DFN0603-2L	(mm)	0.45 + 0.05 − 0.03	0.68 ± 0.05	0.55 ± 0.05	1.50 + 0.10 − 0.00	178.00 ± 1.00	54.60 ± 1.00	13.30 ± 1.00
	(inch)	0.018 + 0.002 − 0.001	0.027 ± 0.002	0.022 ± 0.002	0.059 + 0.004 − 0.000	7.008 ± 0.039	2.150 ± 0.039	0.524 ± 0.039

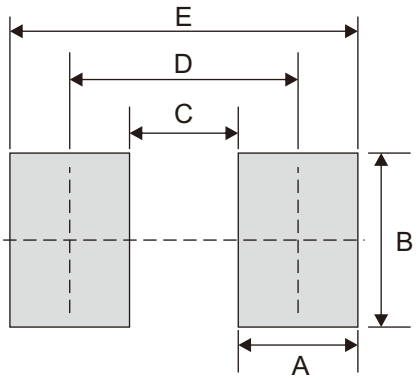
	SYMBOL	E	F	P	P0	P1	T	W	W1
DFN0603-2L	(mm)	1.75 ± 0.05	3.50 ± 0.05	2.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 − 0.10	14.40 ± 1.00
	(inch)	0.069 ± 0.002	0.138 ± 0.002	0.079 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 − 0.004	0.567 ± 0.039

Marking Code

Part Number	Marking Code
CPDZD18VSB-HF	U8

Suggested P.C.B. PAD Layout

SIZE	DFN0603-2L	
	(mm)	(inch)
A	0.22	0.009
B	0.32	0.013
C	0.20	0.008
D	0.42	0.017
E	0.64	0.025



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN0603-2L	10,000	7