

CPDQ20VMUSBP-HF

RoHS Device

Halogen Free



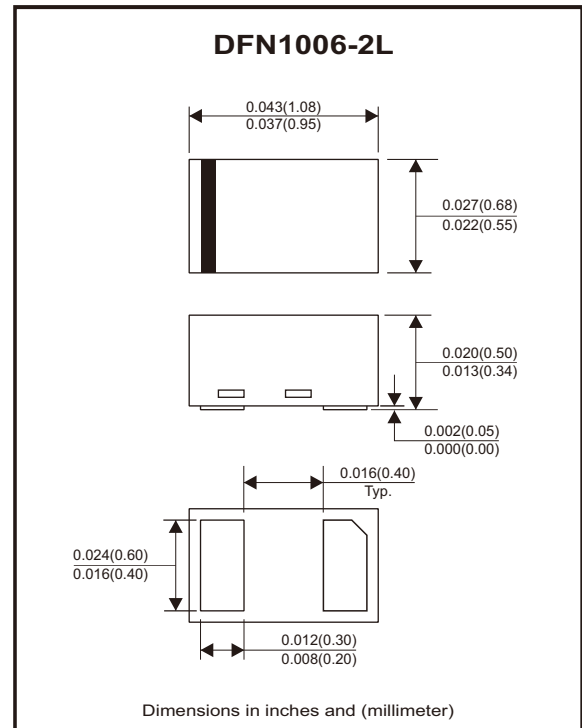
Features

- ESD protection for 1 line with Unidirectional.
- Protect one I/O line or one power line.
- Fast turn-on and low clamping voltage.
- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air/contact)
- IEC 61000-4-4 (EFT) 80A (5/50ns)
- IEC 61000-4-5 (Lightning) 30A (8/20 μs)

Mechanical data

- Case: DFN1006-2L package, molded plastic.
- Polarity: Indicated by cathode band.
- Mounting position: Any.

Circuit Diagram



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

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	$T_P = 8/20\mu\text{s}$	P_{PP}	900	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	30	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	± 30	kV
Operating junction temperature range		T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		V_{RWM}			20	V
Forward voltage	$I_F = 15\text{mA}$	V_F	0.6		1.2	V
Reverse leakage current	$V_{RWM} = 20\text{V}$	I_R			0.5	μA
Breakdown voltage	$I_T = 1\text{mA}$	V_{BR}	21			V
Clamping voltage	$I_{PP} = 4.5\text{A}, T_P = 8/20\mu\text{s}$	V_C		26		V
	$I_{PP} = 30\text{A}, T_P = 8/20\mu\text{s}$	V_C		28	30	
Clamping voltage	$TLP = 16\text{A}, T_P = 100\text{ns}$	V_C		33		V
Junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	C_J		64		pF

Typical Rating and Characteristic Curves (CPDQ20VMUSBP-HF)

Fig.1 - 8/20μs Peak Pulse Current Waveform Acc. IEC 61000-4-5

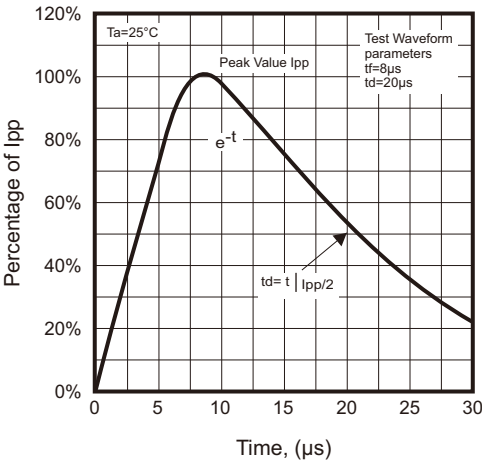


Fig.2 - Power Rating Derating Curve

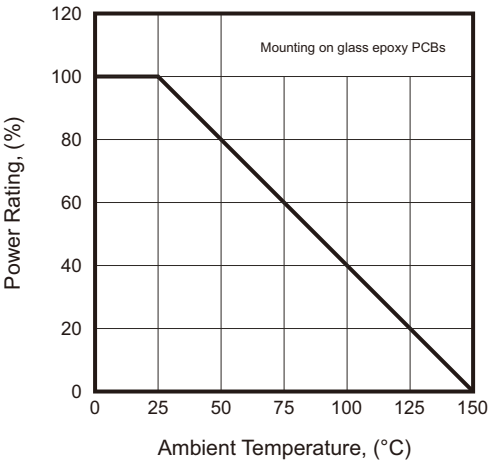


Fig.3 - Typical Clamping Voltage vs. Peak Pulse Current

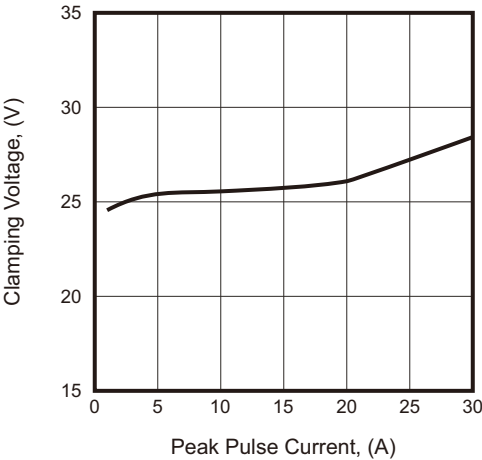


Fig.4 - Typical Capacitance Between Terminals Characteristics

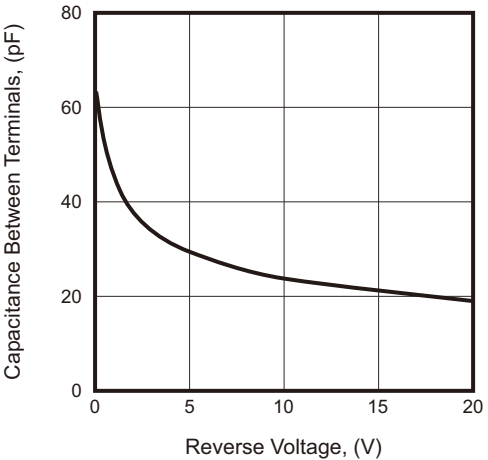
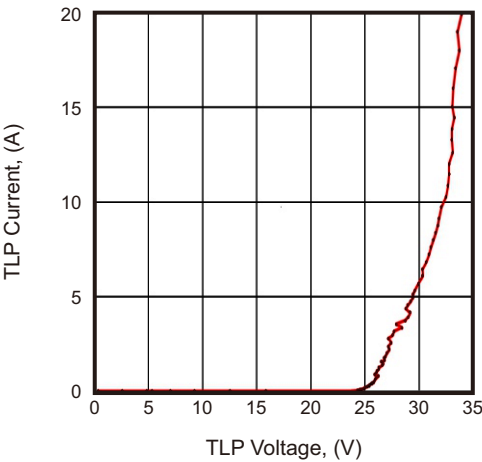
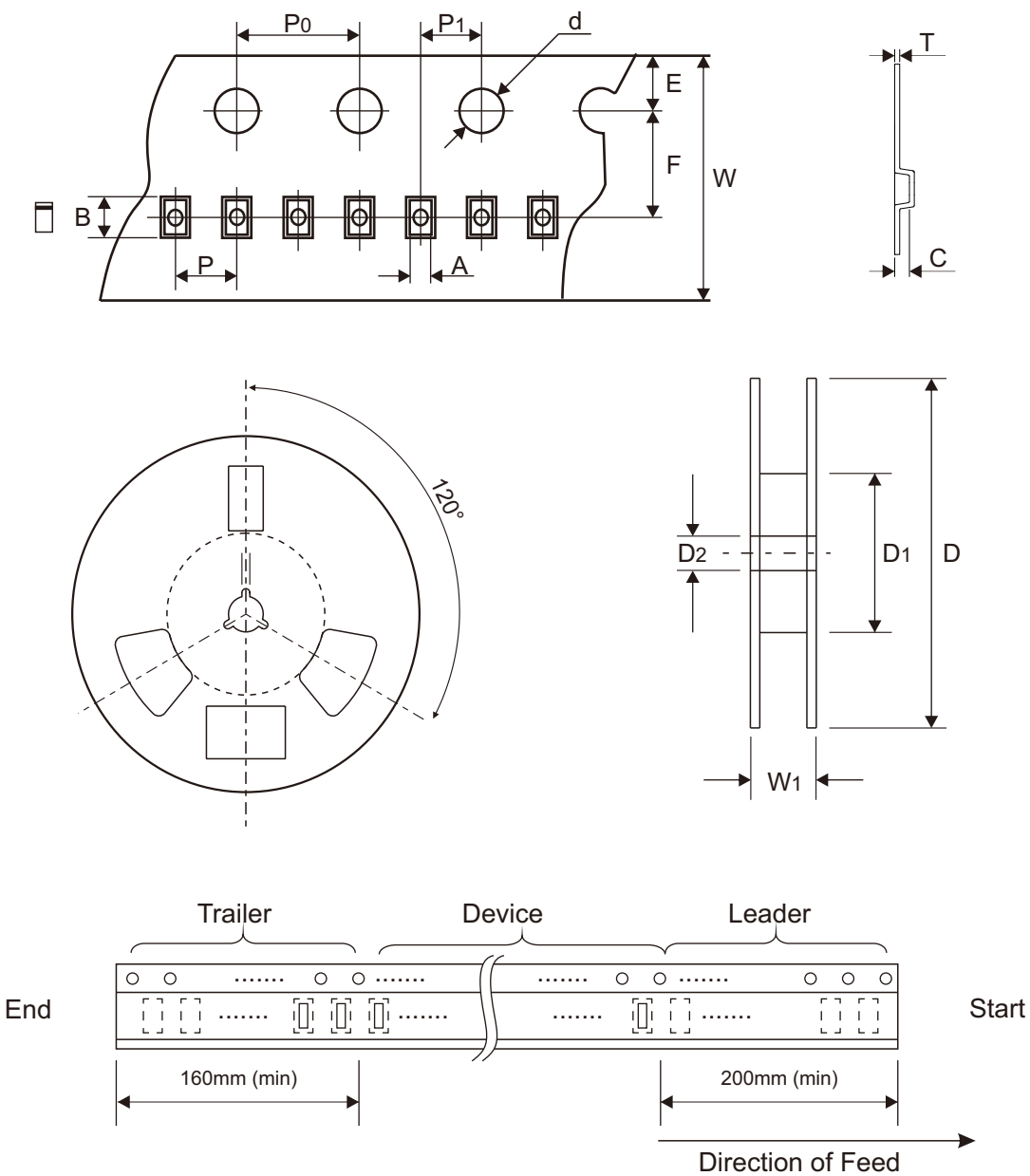


Fig.5 - TLP- Positive Pulse



Reel Taping Specification



DFN1006 -2L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.70 ± 0.05	1.15 ± 0.05	0.57 ± 0.03	1.55 ± 0.05	180.00 ± 1.00	54.40 ± 1.00	13.00 + 0.50 - 0.20
	(inch)	0.028 ± 0.002	0.045 ± 0.002	0.022 ± 0.001	0.061 ± 0.002	7.087 ± 0.039	2.142 ± 0.039	0.512 + 0.020 - 0.008

DFN1006 -2L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.05	8.00 ± 0.10	12.00 ± 1.30
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.002	0.315 ± 0.004	0.472 ± 0.051

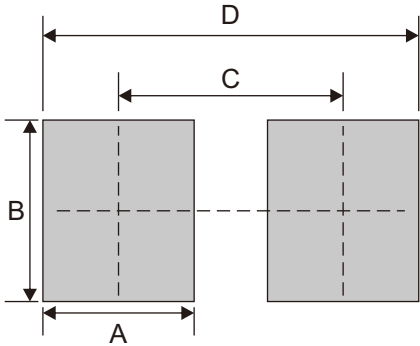
Marking Code

Part Number	Marking Code
CPDQ20VMUSBP-HF	H20



Suggested P.C.B. PAD Layout

SIZE	DFN1006-2L	
	(mm)	(inch)
A	0.50	0.020
B	0.60	0.024
C	0.70	0.028
D	1.20	0.047



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN1006-2L	10,000	7