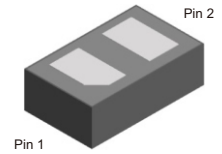


CPDQ5V0MSBP-HF

RoHS Device

Halogen Free



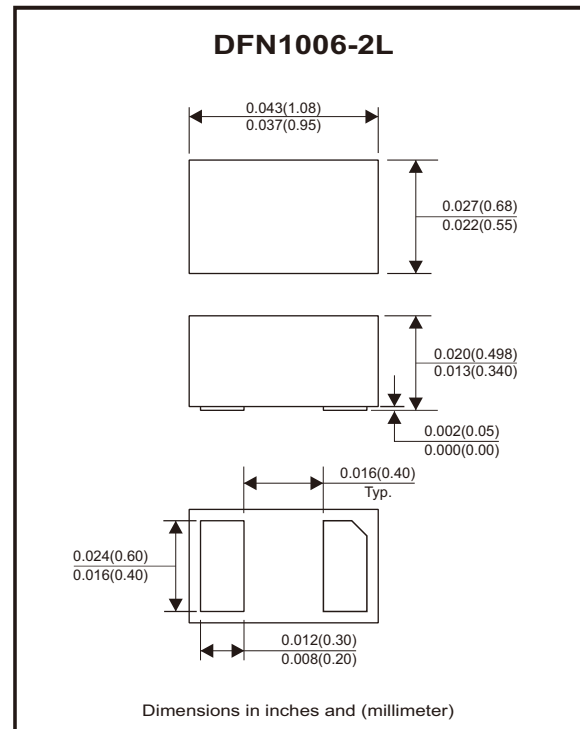
Features

- 80W peak pulse power per line (t_p 8/20 μ s).
- Ultra-low capacitance : C_j = 0.45pF(typ.).
- Low clamping voltage.
- Response time is typically < 1ns.
- Bidirectional configurations.

Mechanical data

- Case: DFN1006-2L package, molded plastic.
- 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}	80	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	10	A
ESD protection	Contact discharge	V_{ESD}	± 20	kV
	Air discharge	V_{ESD}	± 22	
Lead soldering temperature		T_L	260 (10 sec)	$^\circ\text{C}$
Junction and storage temperature range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Peak reverse working voltage		V_{RWM}			5	V
Breakdown voltage	$I_T = 1\text{mA}$	V_{BR}	5.5		8.0	V
Reverse leakage current	$V_{RWM} = 5\text{V}$	I_R			500	nA
Clamping voltage (Note 1)	TLP = 16A, $t_p = 100\text{ns}$	V_C		7.0		V
Dynamic resistance (Note 1)		R_{DYN}		0.28		Ω
Clamping voltage (Note 2)	$I_{PP} = 1\text{A}$, $T_P = 8/20\mu\text{s}$ $I_{PP} = 10\text{A}$, $T_P = 8/20\mu\text{s}$	V_C		4.0 7.0	6.0 9.0	V
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_J		0.45	0.62	pF

Notes : 1. TLP parameter : $Z_0 = 50\Omega$, $t_p = 100\text{ns}$, $t_r = 2\text{ns}$, averaging window from 70ns to 90ns. R_{DYN} is calculated from 4A to 16A.

2. Non-repetitive current pulse, according to IEC 61000-4-5.

Typical Rating and Characteristic Curves (CPDQ5V0MSBP-HF)

Fig.1 - Pulse Waveform(8/20 μs)

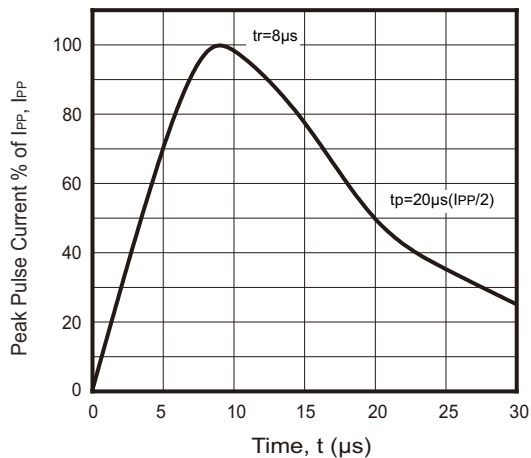


Fig.2 - Power Derating Curve

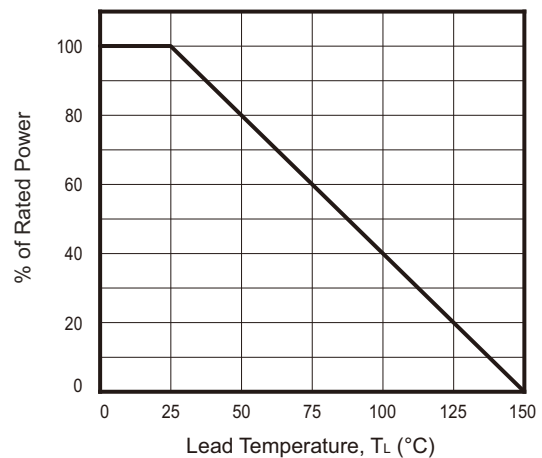


Fig.3 - Clamping Voltage vs. Peak Pulse Current

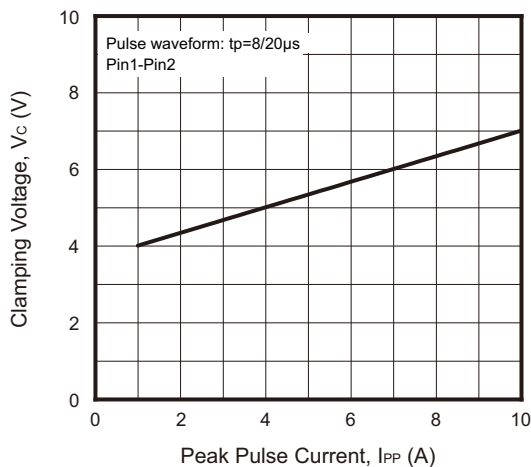
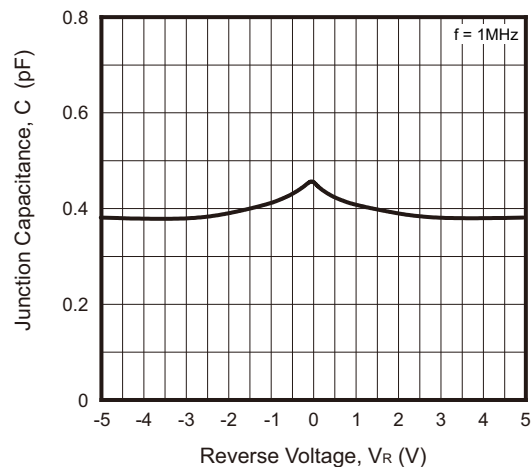


Fig.4 - Capacitance vs. Reverse Voltage



Typical Rating and Characteristic Curves (CPDQ5V0MSBP-HF)

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

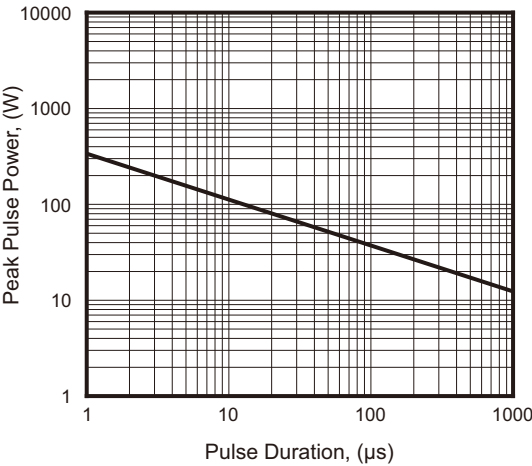


Fig.6 - TLP Measurement

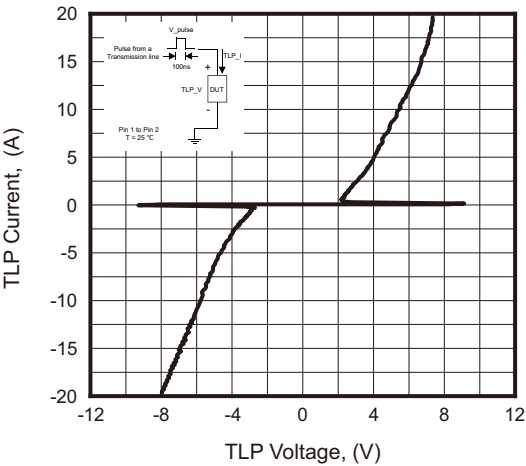


Fig.7 - Clamping Voltage at IEC 61000-4-2
+8KV Pulse Waveform

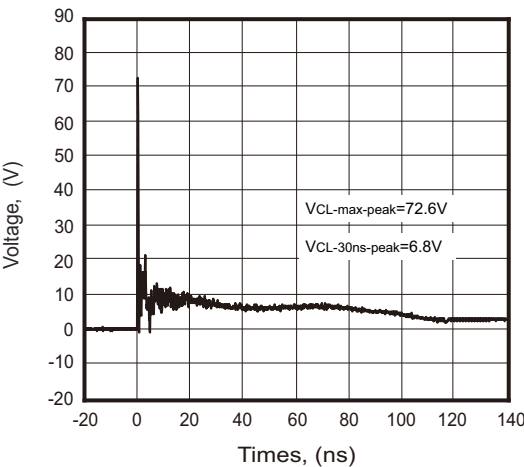
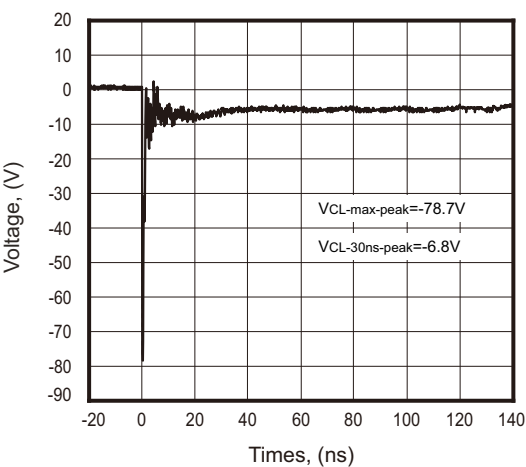
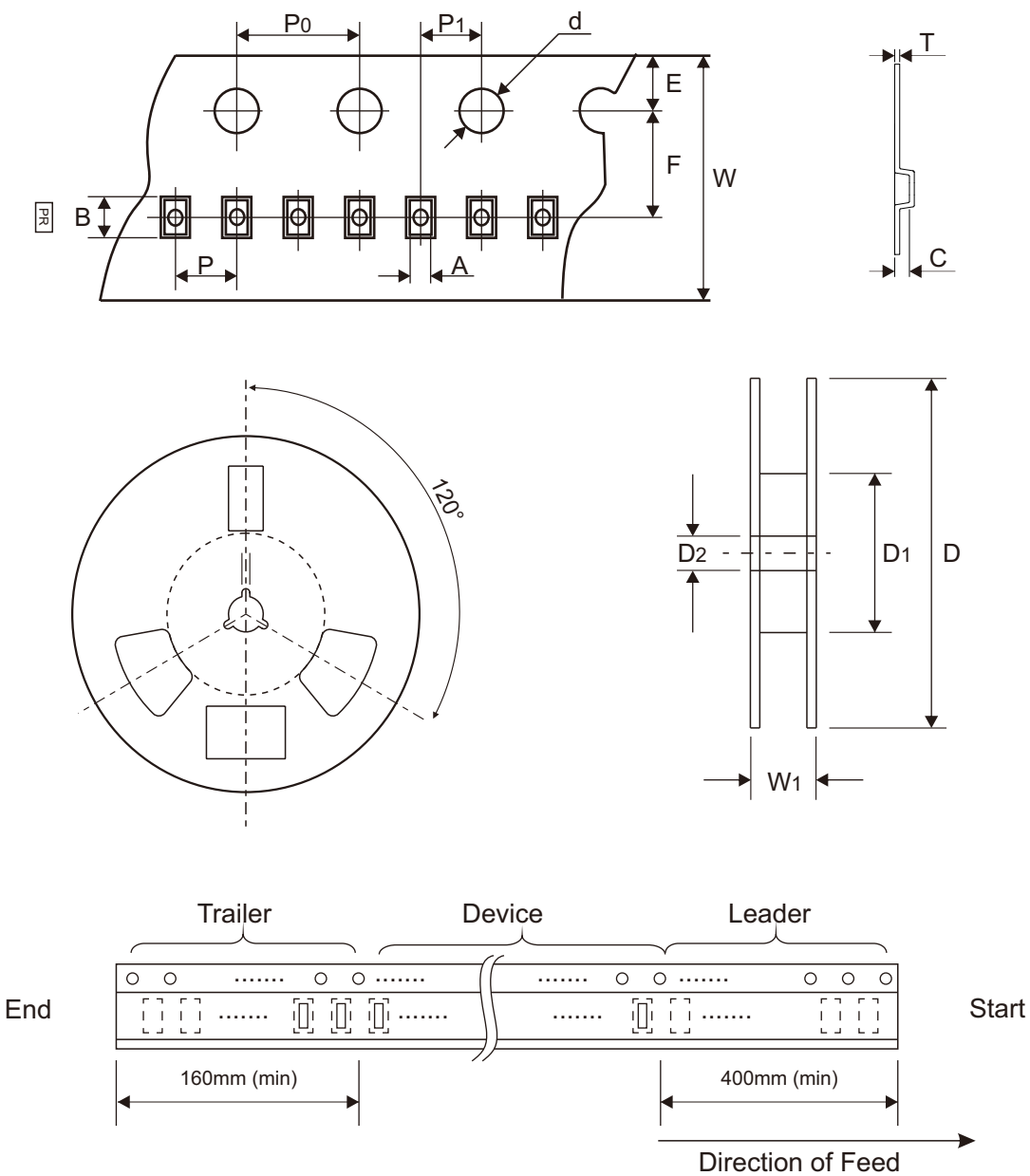


Fig.8 - Clamping Voltage at IEC 61000-4-2
-8KV Pulse Waveform



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

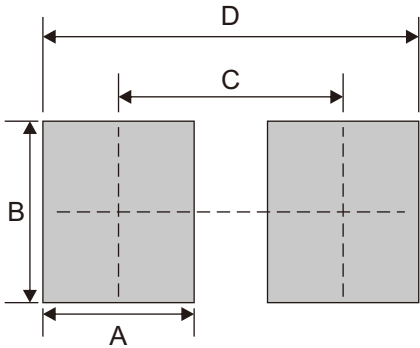
Marking Code

Part Number	Marking Code
CPDQ5V0MSBP-HF	PR



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