

CPDVR105V0UESP-HF

RoHS Device

Halogen Free



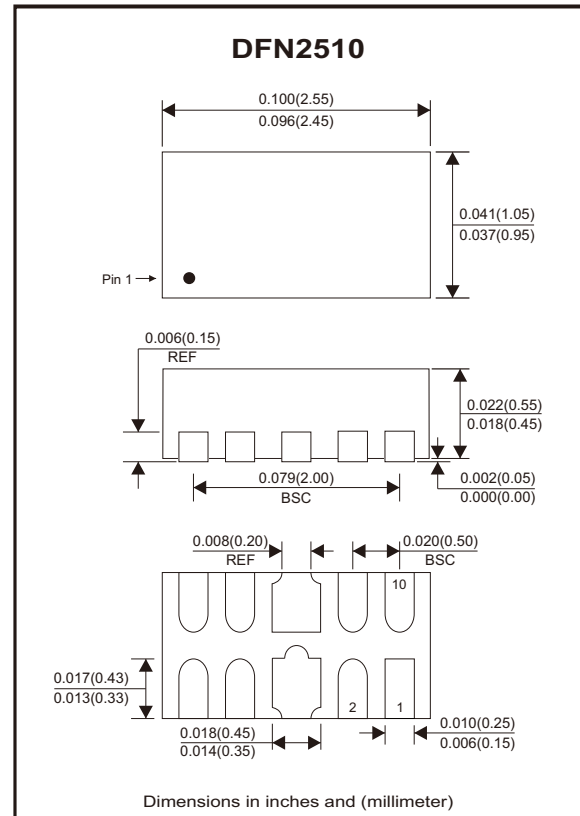
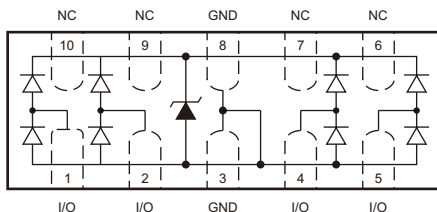
Features

- Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 20\text{KV}$ (Contact); $\pm 25\text{KV}$ (Air).
IEC 61000-4-4(EFT) 40A(5/50ns).
Cable discharge event (CDE).
- Package optimized for high-speed lines.
- Ultra-small package.
- Protects four data lines.
- Low capacitance: 0.2pF (I/O to I/O).
- Low leakage current.
- Low clamping voltage.
- Each I/O pin can withstand over 1000 ESD strikes for $\pm 8\text{KV}$ contact discharge.

Mechanical data

- Case: DFN2510 package, molded plastic.
- Flammability rating: UL 94V-0.
- Terminal: Matte tin plated.
- High temperature soldering guaranteed: $260^\circ\text{C}/10\text{s}$.

Circuit Diagram



Maximum Rating

Parameter	Symbol	Value	Unit
Peak pulse power (8/20 μs)	P _{PP}	60	W
ESD per IEC 61000-4-2 (contact)	V _{ESD}	± 20	kV
ESD per IEC 61000-4-2 (air)		± 25	
Operating temperature range	T _{OPT}	-55 to +125	$^\circ\text{C}$
Storage temperature range	T _{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse working voltage	Any I/O pin to GND	V_{RWM}			5	V
Reverse breakdown voltage	$I_R = 1\text{mA}$, Any I/O pin to GND	V_{BR}	6		9	V
Reverse leakage current	$V_{RWM} = 5\text{V}$, Any I/O pin to GND	I_R			1.0	μA
Clamping voltage	$I_{PP} = 1\text{A}$, $T_P = 8/20\mu\text{s}$, Any I/O pin to GND	V_C			10	V
Clamping voltage	$I_{PP} = 4\text{A}$, $T_P = 8/20\mu\text{s}$, Any I/O pin to GND	V_C			15	V
TLP clamping voltage	$I_{PP} = 8\text{A}$, IEC 61000-4-2 level 2 equivalent ($\pm 4\text{kV}$ contact, $\pm 8\text{kV}$ air), Between I/O and GND	V_{CTLP}		16		V
	$I_{PP} = 16\text{A}$, IEC 61000-4-2 level 4 equivalent ($\pm 8\text{kV}$ contact, $\pm 16\text{kV}$ air), Between I/O and GND			23		
Parasitic capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O and GND	C_{ESD}		0.4	0.5	pF
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O and I/O	C_{ESD}		0.2	0.3	

Note: I/O pins are pin 1,2,4,5, GND pins are pin 3,8.

Rating and Characteristic Curves (CPDVR105V0UESP-HF)

Fig.1 - Power Derating Curve

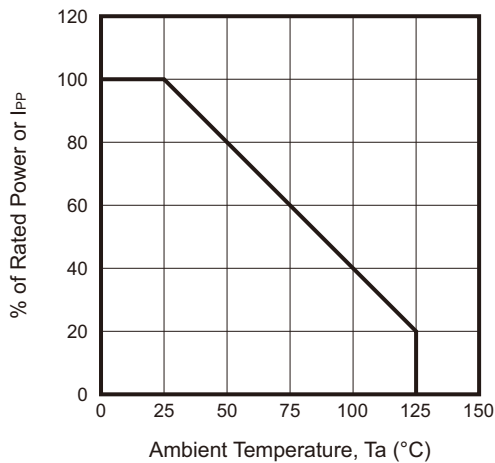


Fig.2 - Clamping Voltage vs Peak Pulse Current

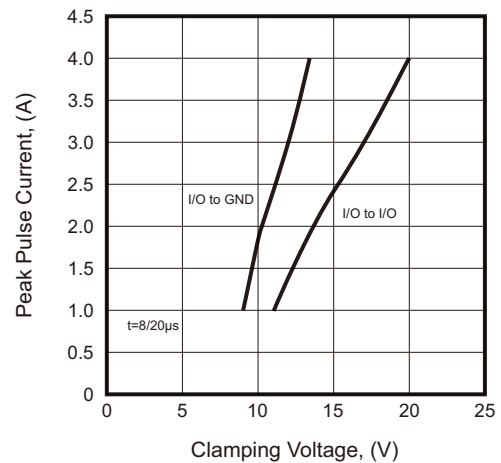


Fig.3 - Voltage Sweeping of I/O to I/O

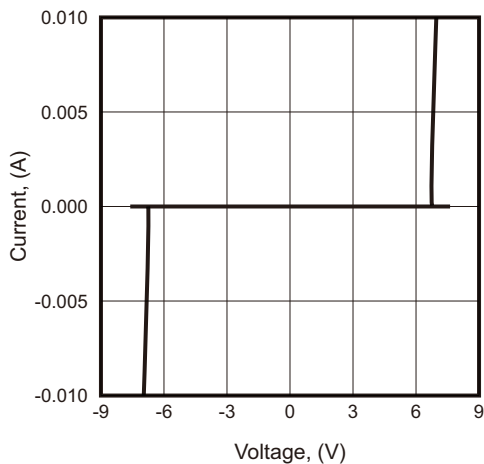
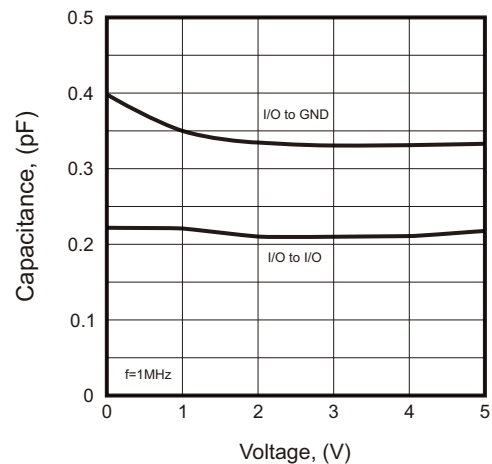


Fig.4 - Voltage vs Capacitance



Rating and Characteristic Curves (CPDVR105V0UESP-HF)

Fig.5 - ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)

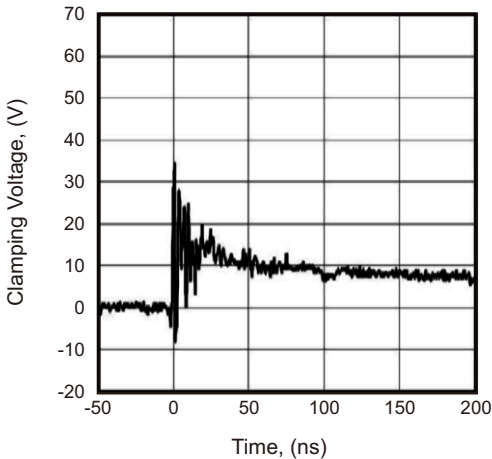


Fig.6 - ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)

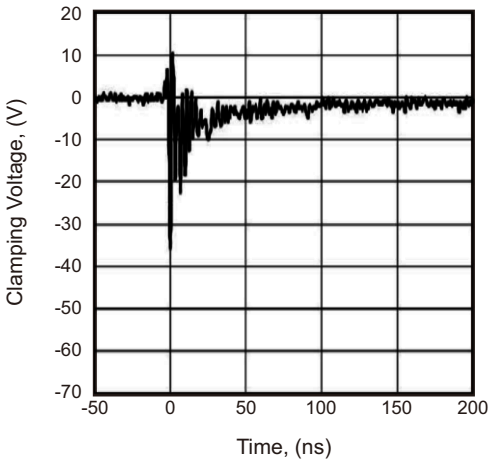
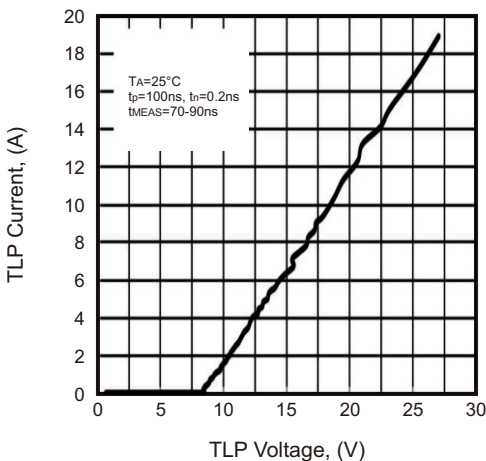
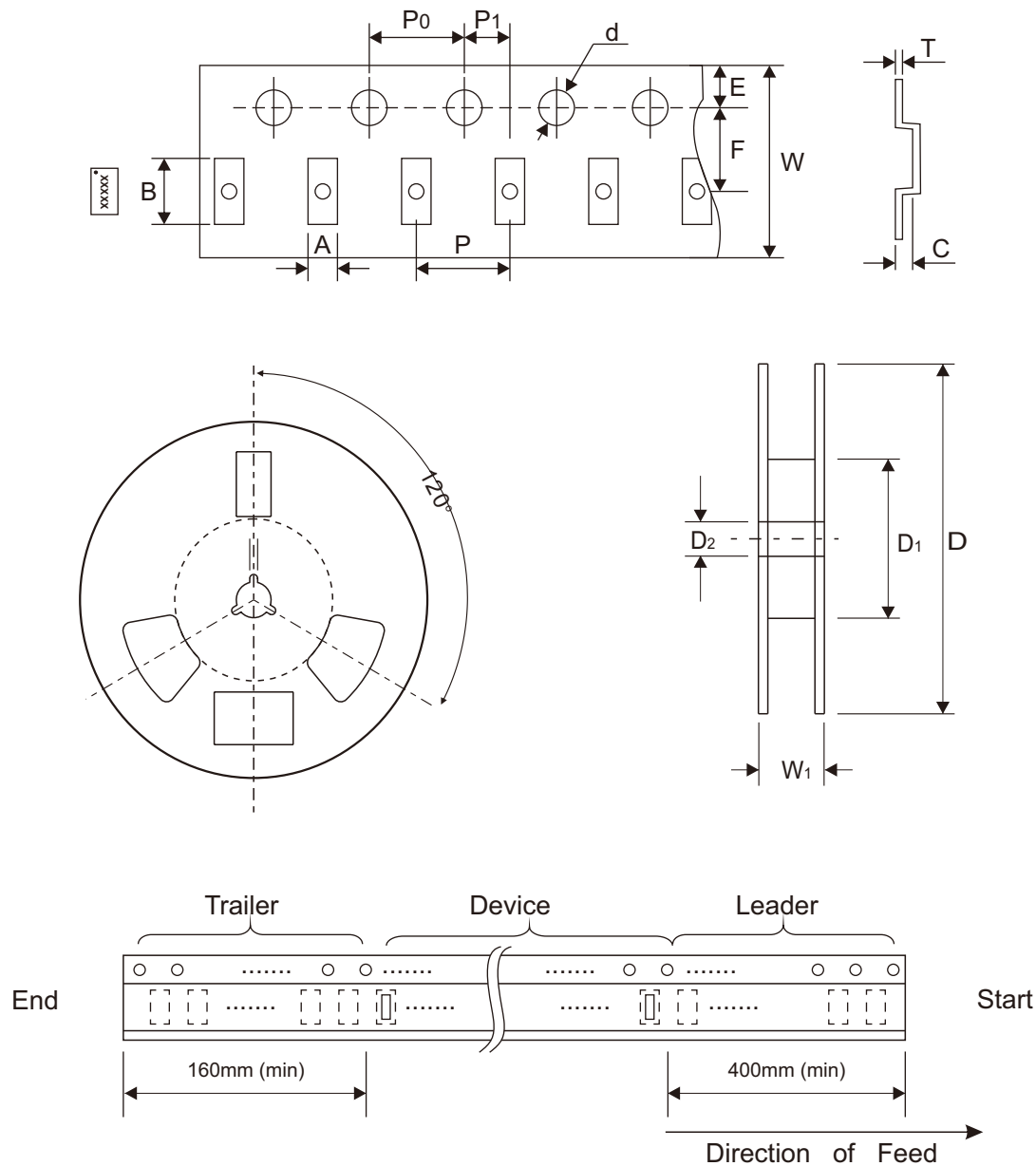


Fig.7 - Transmission Line Pulsing (TLP)
Measurement



Reel Taping Specification

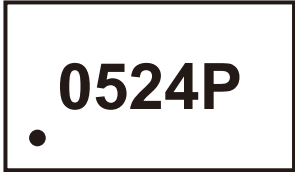


DFN2510	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	1.20 ± 0.05	2.70 ± 0.05	0.70 ± 0.05	1.55 ± 0.05	177.2 ± 0.20	54.30 ± 0.20	14.30 ± 0.20
	(inch)	0.047 ± 0.002	0.106 ± 0.002	0.028 ± 0.002	0.061 ± 0.002	6.976 ± 0.008	2.138 ± 0.008	0.563 ± 0.008

DFN2510	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.05	8.00 ± 0.10	12.30 ± 0.20
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.002	0.315 ± 0.004	0.484 ± 0.008

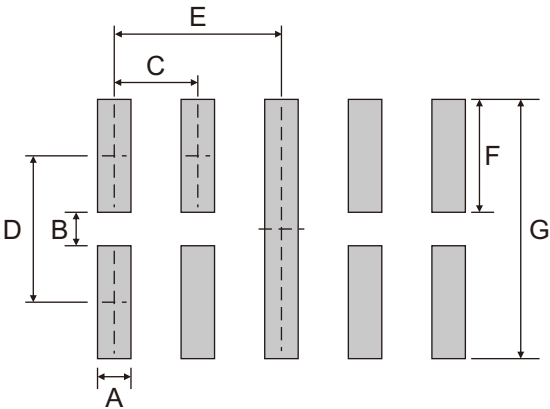
Marking Code

Part Number	Marking Code
CPDVR105V0UESP-HF	0524P



Suggested P.C.B. PAD Layout

SIZE	DFN2510	
	(mm)	(inch)
A	0.20	0.008
B	0.20	0.008
C	0.50	0.020
D	0.875	0.034
E	1.00	0.039
F	0.675	0.027
G	1.55	0.061



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN2510	3,000	7