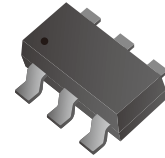


CPDT6-5V0UA-HF

RoHS Device

Halogen Free

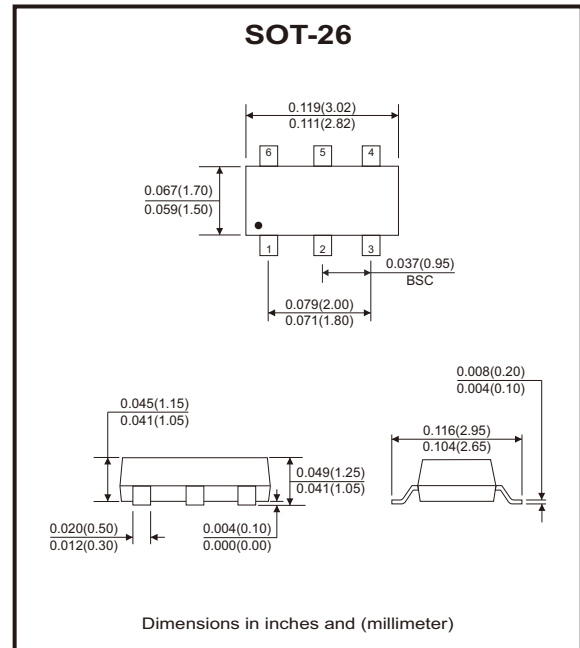


Features

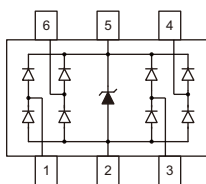
- Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 20\text{KV}$ (Contact); $\pm 25\text{KV}$ (Air).
IEC 61000-4-4(EFT) 40A(5/50ns).
- Package optimized for high-speed lines.
- Small package (2.9mm x 2.8mm x 1.1mm).
- Protects four data lines and one Vcc line.
- Low capacitance: 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: SOT-26 package, molded plastic.
- Flammability rating: UL 94V-0.
- Terminal: Matte tin plated.
- High temperature soldering guaranteed: 260°C/10s.



Circuit Diagram



Maximum Rating

Parameter	Symbol	Value	Unit
Peak pulse power (8/20 μ s)	P _{PP}	60	W
ESD per IEC 61000-4-2 (air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (contact)		± 20	
Operating temperature range	T _{OPT}	-55 to +125	°C
Storage temperature range	T _{STG}	-55 to +150	°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}			5.0	V
Reverse breakdown voltage	$I_T = 1\text{mA}$, Any I/O pin to GND	V_{BR}	6.0		9.0	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
	$I_{PP} = 4\text{A}$, $T_P = 8/20\mu\text{s}$, Any I/O pin to GND	V_C			15	V
	$I_{PP} = 8\text{A}$, $T_P = 8/20\mu\text{s}$, Vcc pin to GND	V_C			15	V
Parasitic capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O and IO	C_{ESD}		0.20	0.30	pF
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O and GND	C_{ESD}		0.45	0.50	
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between Vcc and GND	C_{ESD}		0.80		

Note: I/O pins are pin 1,3,4,6. pin 5 is Vcc. pin 2 is GND.

Rating and Characteristic Curves (CPDT6-5V0UA-HF)

Fig.1 - Power Derating Curve

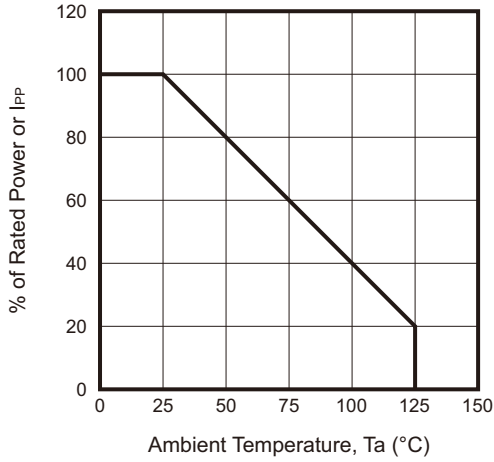


Fig.2 - Clamping Voltage vs Peak Pulse Current

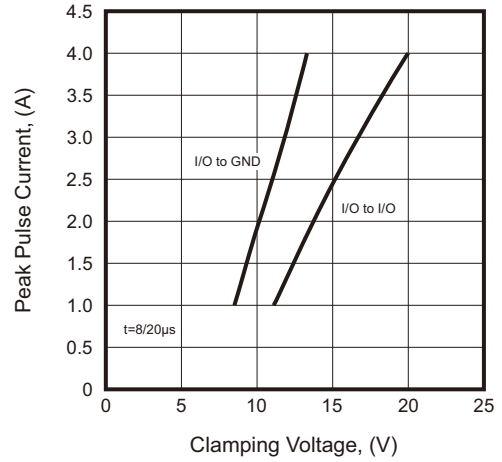


Fig.3 - Voltage Sweeping of I/O to I/O

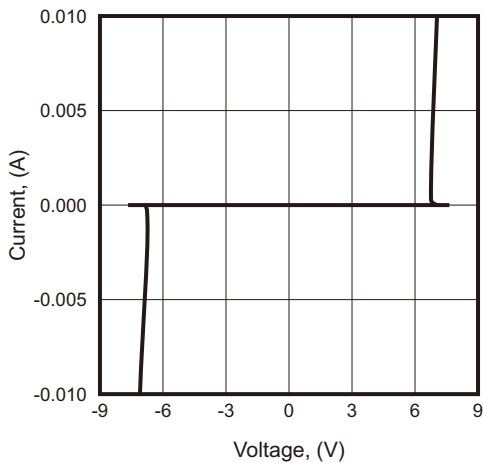


Fig.4 - Voltage vs Capacitance

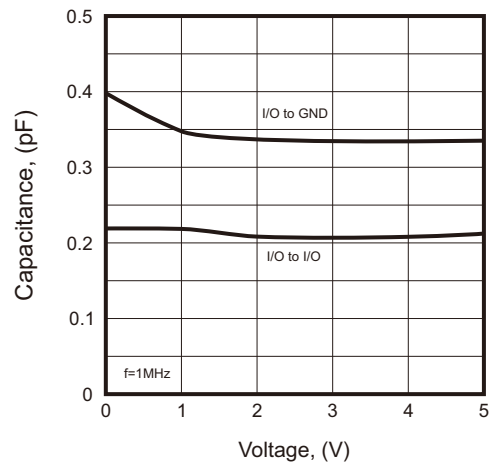


Fig.5 - ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)

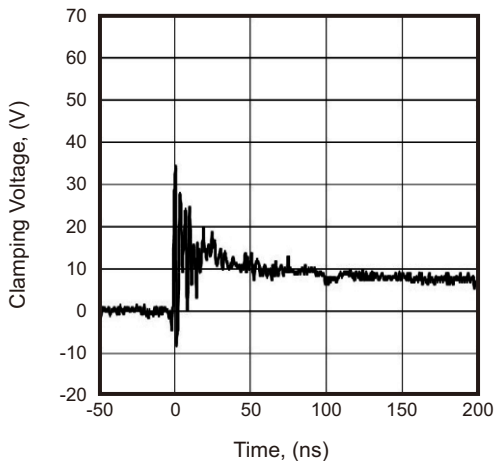
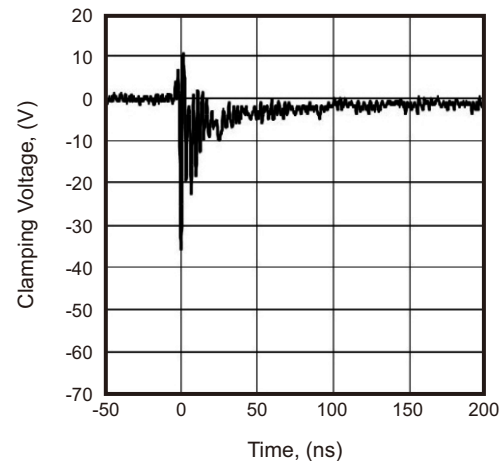
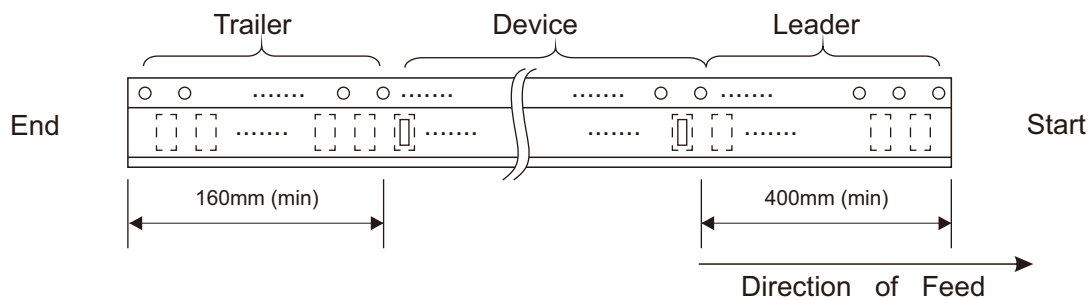
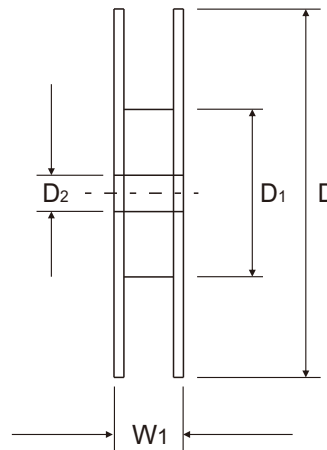
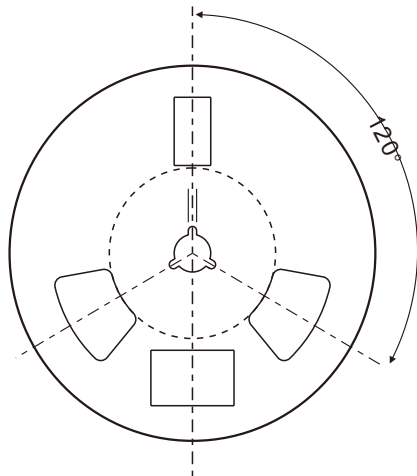
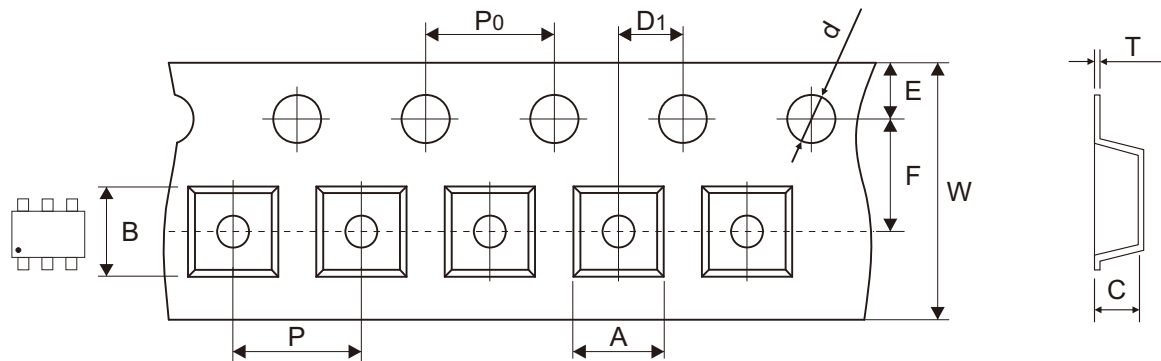


Fig.6 - ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



Reel Taping Specification

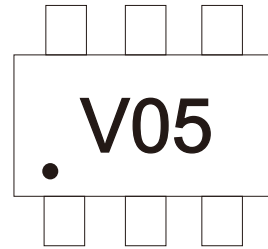


SOT-26	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.17 ± 0.10	3.23 ± 0.10	1.37 ± 0.10	1.55 ± 0.10	178 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.125 ± 0.004	0.127 ± 0.004	0.054 ± 0.004	0.061 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-26	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 ± 0.10	8.00 ± 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 ± 0.004	0.315 ± 0.004	0.484 ± 0.039

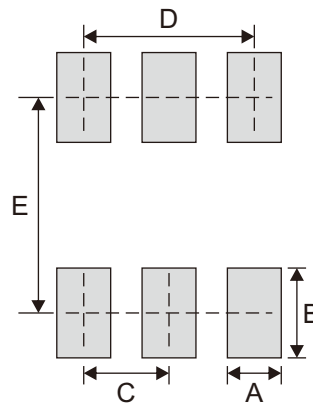
Marking Code

Part Number	Marking Code
CPDT6-5V0UA-HF	V05



Suggested P.C.B. PAD Layout

SIZE	SOT-26	
	(mm)	(inch)
A	0.60	0.024
B	1.00	0.039
C	0.95	0.037
D	1.90	0.075
E	2.40	0.094



Note: 1.The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-26	3000	7