

CPDV6-5V0UPA-HF

RoHS Device

Halogen Free

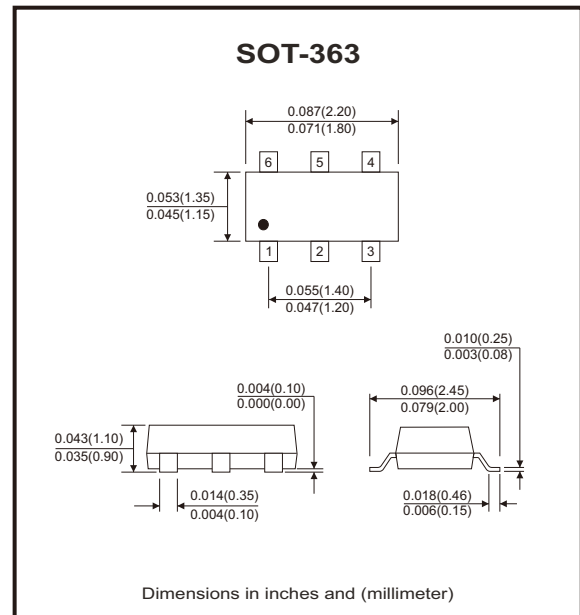


Features

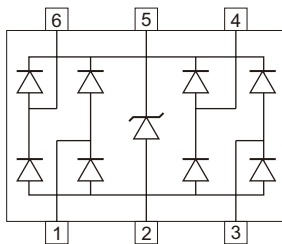
- Protects four I/O lines and one Vcc line.
- Low capacitance.
- Low leakage current.
- No insertion loss to 10GHz.
- Response time is < 1ns.
- Solid-state silicon avalanche technology.
- IEC 61000-4-2 (ESD) $\pm 20\text{kV}$ (air), $\pm 18\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A (8/20 μs)

Mechanical data

- Case: SOT-363, molded plastic.
- Terminal: Solderable per MIL-STD-750, method 2026.
- 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}	76	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	4	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	± 20 ± 18	kV
Lead soldering temperature		T_L	260 (10 sec)	$^\circ\text{C}$
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 Ta=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse working voltage	Any I/O to GND	V_{RWM}			5	V
Reverse breakdown voltage	$I_T = 1\text{mA}$ (Note 1)	V_{BR}	6		9	V
Reverse leakage current	$V_{RWM} = 5\text{V}$ (Note 1)	I_R			1	μA
Diode forward voltage	$I_F = 15\text{mA}$	V_F		0.94	1.2	V
Clamping voltage	$I_{PP} = 1\text{A}$, $T_P = 8/20\mu\text{s}$ (Note 1)	V_C		10	13	V
	$I_{PP} = 4\text{A}$, $T_P = 8/20\mu\text{s}$ (Note 1)	V_C		16	19	
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O pins	C_J		0.1	0.3	pF
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Any I/O pin to GND	C_J		0.45	0.8	

Notes: 1. Any I/O pin to GND.

2. Junction capacitance is measured in $V_R=0\text{V}$, $f=1\text{MHz}$.

Typical Rating and Characteristic Curves (CPDV6-5V0UPA-HF)

Fig.1 - Pulse Waveform

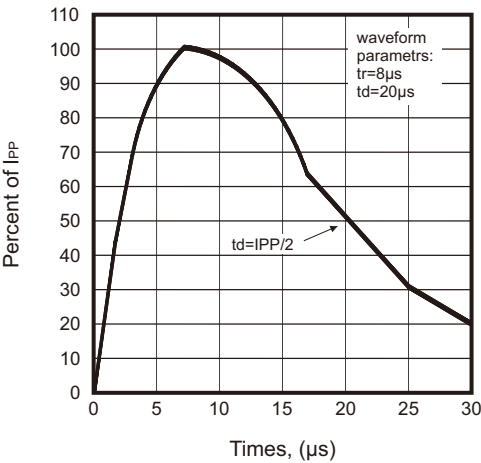


Fig.2 - Non-Repetitive Peak Power vs. Pulse Time

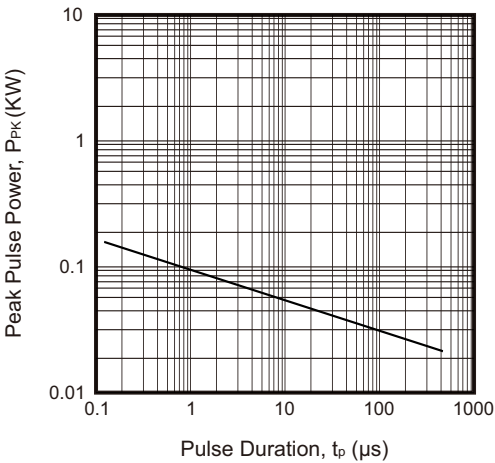


Fig.3 - Clamping Voltage vs. Peak Pulse Current

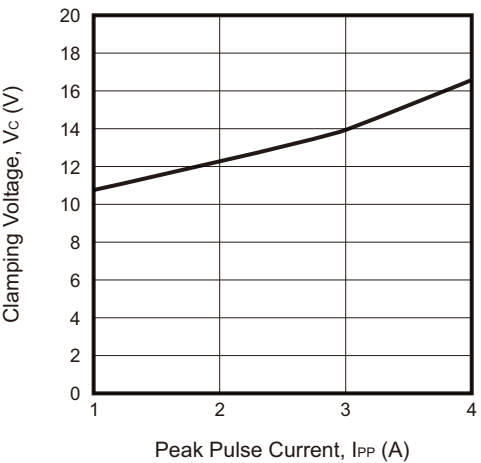


Fig.4 - TLP Measurement

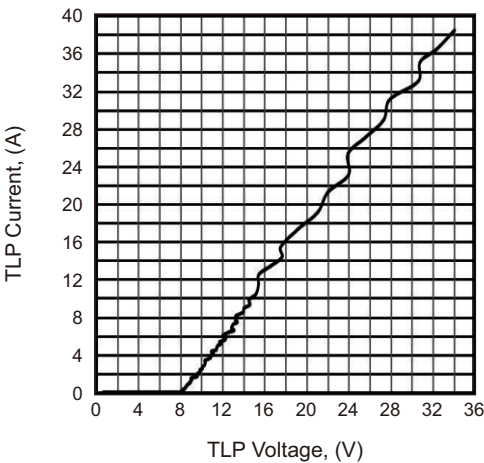


Fig.5 - +8kV Contact Discharge per IEC 61000-4-2

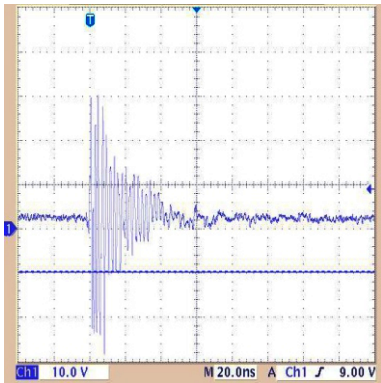
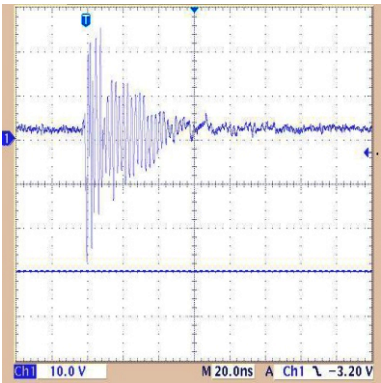
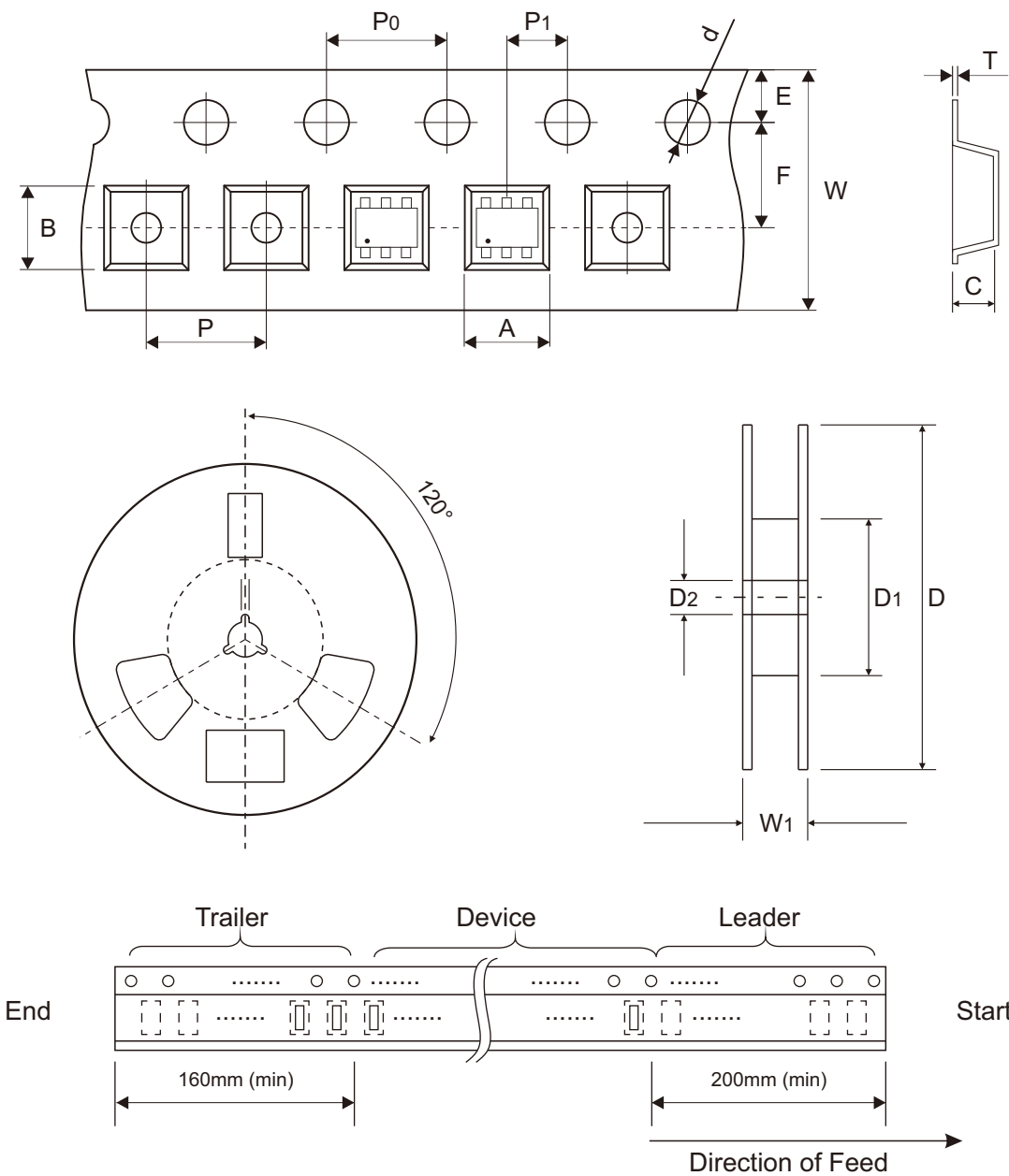


Fig.6 - -8kV Contact Discharge per IEC 61000-4-2



Reel Taping Specification

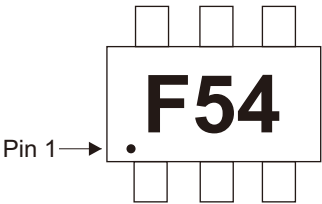


SOT-363	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.30 ± 0.10	2.55 ± 0.10	1.20 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	55.00 ± 1.00	13.00 ± 1.00
	(inch)	0.091 ± 0.004	0.100 ± 0.004	0.047 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.165 ± 0.039	0.512 ± 0.039

SOT-363	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 ± 0.05	8.00 ± 0.10	15.80 ± 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 ± 0.002	0.315 ± 0.004	0.622 ± 0.039

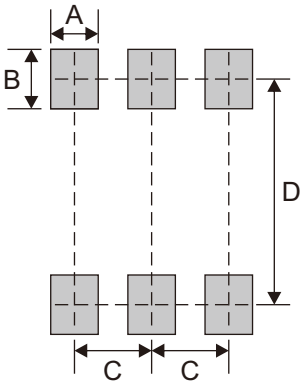
Marking Code

Part Number	Marking Code
CPDV6-5V0UPA-HF	F54



Suggested P.C.B. PAD Layout

SIZE	SOT-363	
	(mm)	(inch)
A	0.40	0.016
B	0.50	0.020
C	0.65	0.026
D	1.80	0.071



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-363	3,000	7