

# SMD ESD Protection Diode



SMD Diodes Specialist

## CPDVR083V3UA-HF RoHS Device



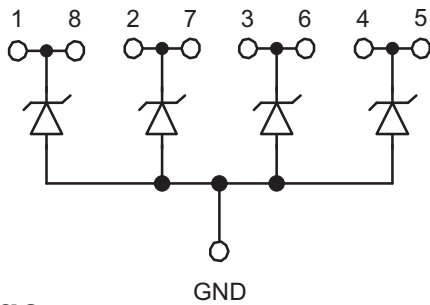
### Features

- Halogen free.
- IEC61000-4-2 (ESD)±15kV(Contact),±20kV(Air).
- Working voltage: 3.3V
- Low leakage current.
- Low operating and clamping voltages.

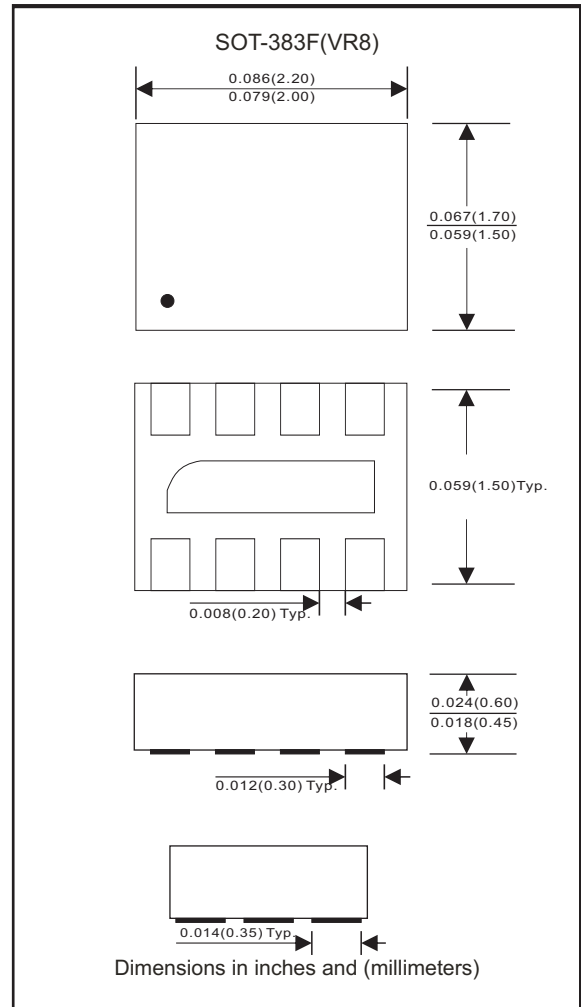
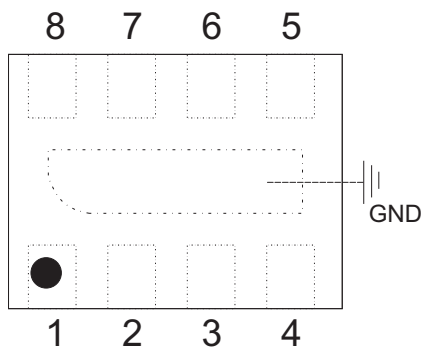
### Mechanical data

- Case: SOT-383F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any

### Circuit Diagram



### Package



## Maximum Rating (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power ( tp = 8/20 us)	PPP	40	W
Peak pulse current ( tp = 8/20 us)	IPP	5	A
ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2(Contact)	ESD	±20 ±15	kV
Operating temperature	TJ	-55 to +125	°C
Storage temperature	TSTG	-55 to +125	°C

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-off voltage		VRWM			3.3	V
Punch-through voltage	IP T = 2uA	VPT	3.5			V
Snap-back voltage	ISB = 50mA	VSB	2.8			V
Leakage current	VR = 3.3V	IL		0.05	0.5	uA
Clamping voltage	IPP = 1 A, Tp=8/20us, Any Channel Pin to Ground	Vc			5.5	V
	IPP = 5 A, Tp=8/20us, Any Channel Pin to Ground	Vc			8.0	V
Reverse clamping voltage	IPPR = 1 A, Tp=8/20us, Ground to Any Channel Pin	VCR			2.4	V
Junction capacitance	VR = 0 V, f = 1MHz Any Channel Pin to Ground	Cj		25	30	pF
	VR = 3.3 V, f = 1MHz Any Channel Pin to Ground	Cj		14		pF

## RATING AND CHARACTERISTIC CURVES (CPDVR083V3UA-HF)

Fig. 1 - Non-repetitive max. peak pulse power vs. pulse time

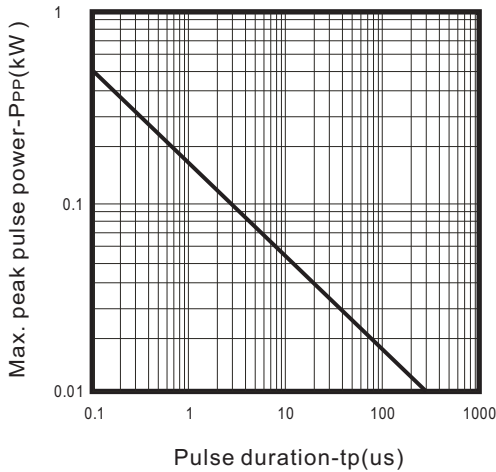


Fig. 2 - Power rating derating curve

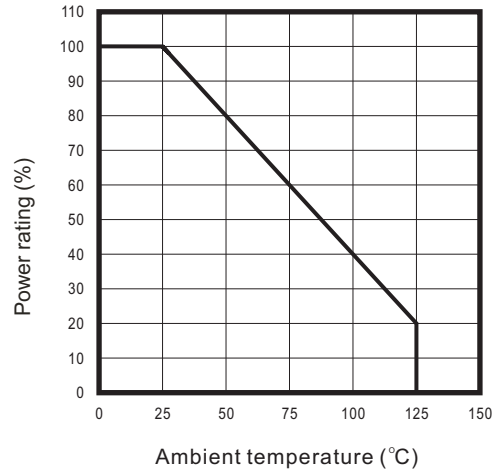


Fig.3 - Clamping voltage vs. peak pulse current

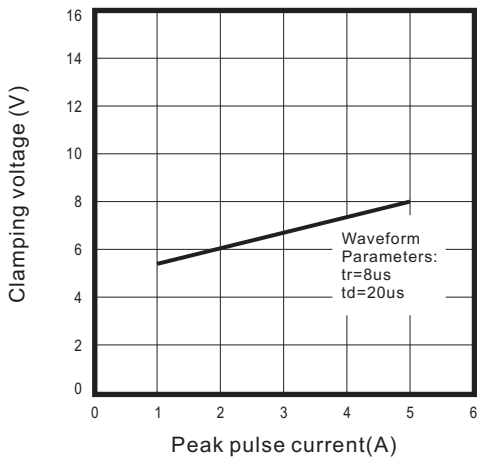


Fig.4 - Forward voltage vs. Forward current

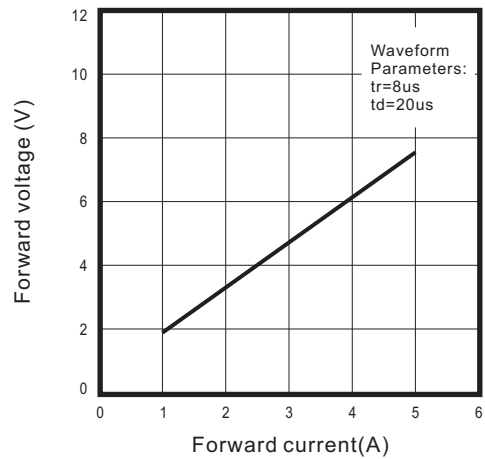
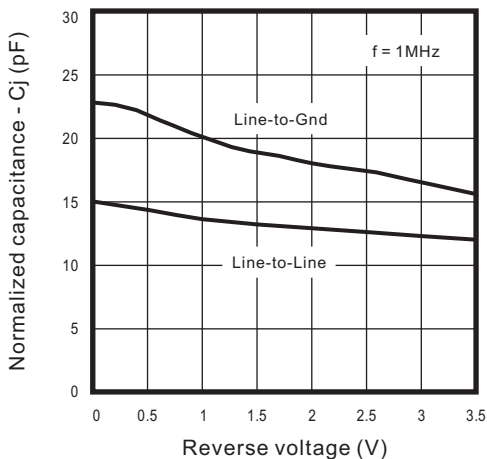
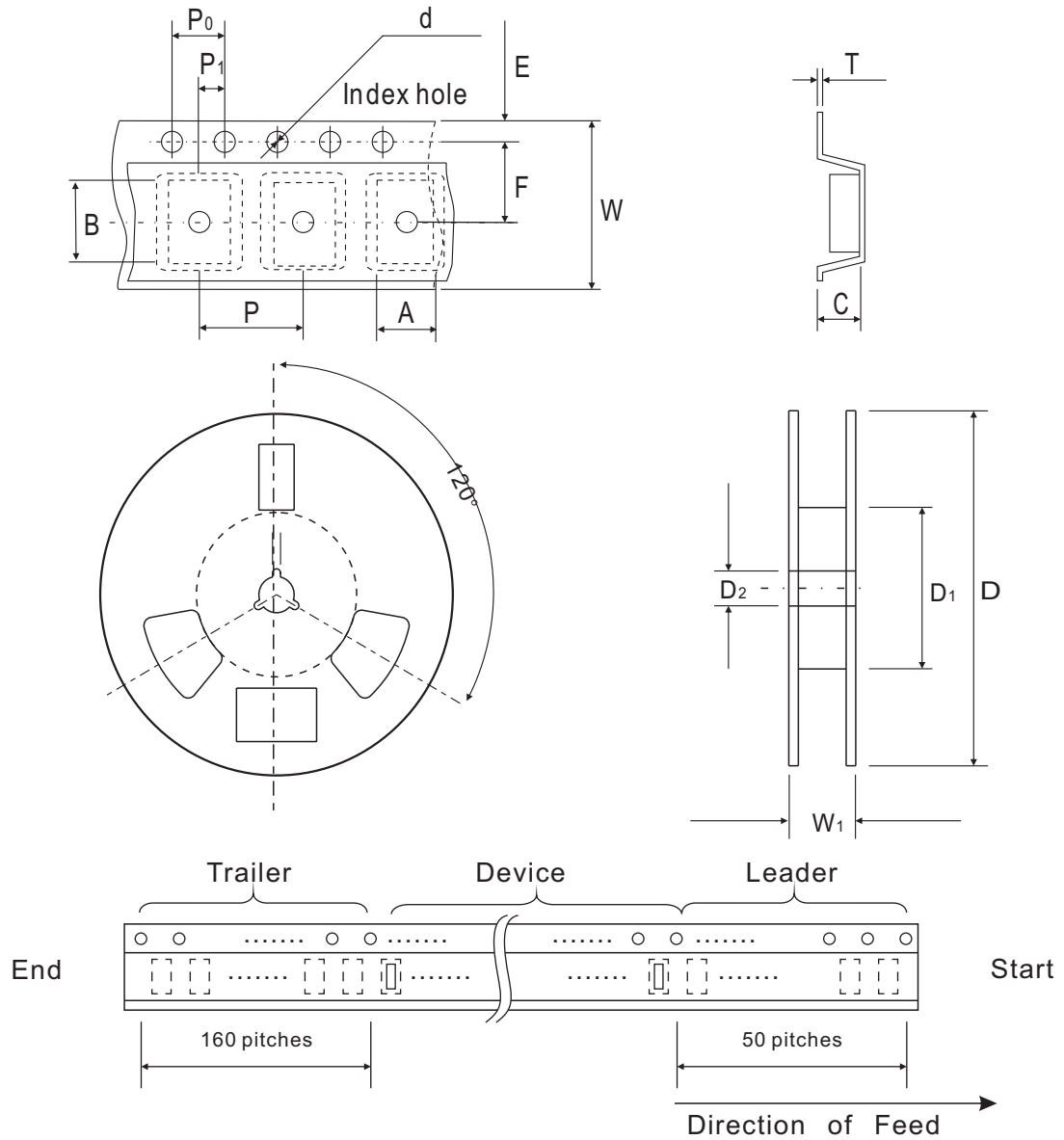


Fig.5 - Junction capacitance vs. reverse voltage



## Reel Taping Specification



SOT-383F	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	1.96 ± 0.10	2.31 ± 0.10	0.74 ± 0.10	1.55 ± 0.10	178 ± 1	60.0 MIN.	13.0 ± 0.20
	(inch)	0.077 ± 0.004	0.091 ± 0.004	0.029 ± 0.004	0.061 ± 0.004	7.008 ± 0.04	2.362 MIN.	0.512 ± 0.008

SOT-383F	SYMBOL	E	F	P	P <sub>0</sub>	P <sub>1</sub>	T	W	W <sub>1</sub>
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.22 ± 0.05	8.00 ± 0.20	13.5 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.009 ± 0.002	0.315 ± 0.008	0.531 MAX.

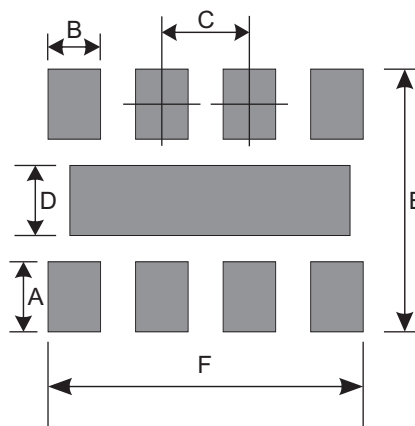
## Marking Code

Part Number	Marking Code
CPDVR083V3UA-HF	E3V3



## Suggested PAD Layout

SIZE	SOT-383F(VR8)	
	(mm)	(inch)
A	0.630	0.025
B	0.300	0.012
C	0.500	0.020
D	0.450	0.018
E	2.150	0.085
F	1.800	0.071



## Standard Package

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
SOT-383F(VR8)	3000	7