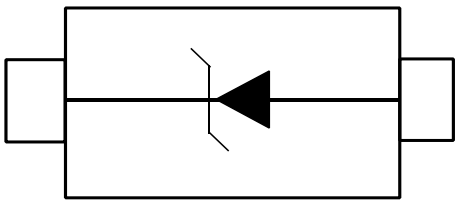
Small Surface Mount TVS Diodes

Features

- Stand−off Voltage: 3.3 − 64 Volts
- Peak Power − 400 Watts @ 1 ms (PESDU03331D1F – PESDU6431D1F)
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of above 16 kV per Human Body Model
- ESD Rating of above 30 kV (Contact Discharge) per IEC61000−4−2
- EFT (Electrical Fast Transients) Rating of 40 A per IEC61000−4−4
- Low Profile − Maximum Height of 1.0 mm
- Small Footprint − Footprint Area of 8.45 mm^2
- Supplied in 8 mm Tape and Reel − 3,000 Units per Reel
- Cathode Indicated by Polarity Band
- Lead Orientation in Tape: Cathode Lead to Sprocket Holes
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant
- WeiPan technology



Circuit and Pin Schematic

Ordering Information

Device	Qty per Reel	Reel Size
PESDUxx31D1F	3000	7 Inch

"xx" =Working Peak Reverse Voltage

Maximum ratings (Tamb=25℃ Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Maximum Ppk Dissipation (PW−10/1000us) (Note 1) PESDU03331 – PESDU6431D1F	Ppk	400	W
Maximum Ppk Dissipation @ TA = 25°C, (PW−8/20us) (Note 2)	Ppk	2000	W
DC Power Dissipation @TA=25°C(Note3) Derate above25°C Thermal Resistance, Junction−to−Ambient (Note 3)	PD R_{JA}	1000 4.0 325	mW mW/°C °C/W
Lead Soldering Temperature	TL	260 (10 sec.)	℃
Operating Temperature Range	TJ	-55 ~ 150	℃
Storage Temperature Range	TSTG	-55 ~ 150	℃
Lead Solder Temperature − Maximum (10 Second Duration)	TL	260	℃

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Non−repetitive current pulse at TA = 25°C, per waveform of Figure2.
2. Non−repetitive current pulse at TA = 25°C, per waveform of Figure 3.
3. Mounted with recommended minimum pad size, DC board FR−4.

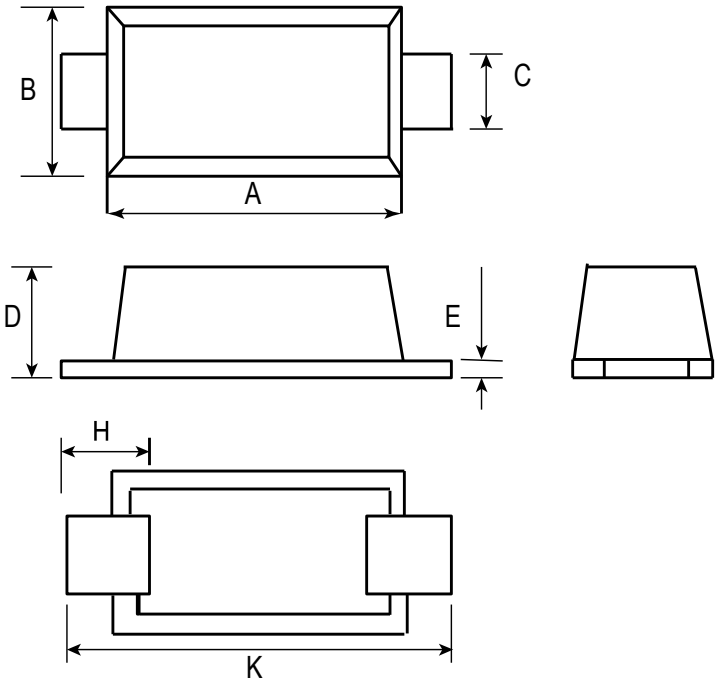
Electrical characteristics (Tamb=25℃ Unless Otherwise Specified)

Device	Marking	V_{RWM} (V) (Note 5)	V_{BR} @ I_T (V) (Note 6)			I_T	I_R @ V_{RWM}	V_C(Max)	I_{PP}(Max) (Note7)	ESD Immunity acc. IEC 61000-4-2
		(V)	Min	Nom	Max	(mA)	(A)	(V)	(A)	(kV)
PESDU03331D1F	A1	3.3	5.20	5.60	6.00	10	600	8.0	43.8	± 30
PESDU0531D1F	A2	5.0	6.40	6.80	7.25	10	400	9.2	43.5	± 30
PESDU0631D1F	A3	6.0	6.67	7.02	7.37	10	400	10.3	38.8	± 30
PESDU06531D1F	A4	6.5	7.22	7.60	7.98	10	250	11.2	35.7	± 30
PESDU0731D1F	A5	7.0	7.78	8.20	8.60	10	100	12.0	33.3	± 30
PESDU07531D1F	A6	7.5	8.33	8.77	9.21	1	50	12.9	31.0	± 30
PESDU0831D1F	A7	8.0	8.89	9.36	9.83	1	25	13.6	29.4	± 30
PESDU08531D1F	A8	8.5	9.44	9.92	10.4	1	10	14.4	27.8	± 30
PESDU0931D1F	A9	9.0	10.0	10.55	11.1	1	5.0	15.4	26.0	± 30
PESDU1031D1F	AA	10	11.1	11.70	12.3	1	2.5	17.0	23.5	± 30
PESDU1131D1F	AB	11	12.2	12.85	13.5	1	2.5	18.2	22.0	± 30
PESDU1231D1F	AC	12	13.3	14.00	14.7	1	2.5	19.9	20.1	± 30
PESDU1331D1F	AD	13	14.4	15.15	15.9	1	1	21.5	18.6	± 30
PESDU1431D1F	AE	14	15.6	16.40	17.2	1	1	23.2	17.2	± 30
PESDU1531D1F	AF	15	16.7	17.60	18.5	1	1	24.4	16.4	± 30
PESDU1631D1F	AG	16	17.8	18.75	19.7	1	1	26.0	15.4	± 30
PESDU1731D1F	AH	17	18.9	19.90	20.9	1	1	27.6	14.5	± 30
PESDU1831D1F	AK	18	20.0	21.00	22.1	1	1	29.2	13.7	± 30
PESDU2031D1F	AL	20	22.2	23.35	24.5	1	1	32.4	12.3	± 30
PESDU2231D1F	AM	22	24.4	25.60	26.9	1	1	35.5	11.3	± 30
PESDU2431D1F	AM	24	26.7	28.10	29.5	1	1	38.9	10.3	± 30
PESDU2631D1F	AP	26	28.9	30.40	31.9	1	1	42.1	9.5	± 30
PESDU2831D1F	AR	28	31.1	32.80	34.4	1	1	45.4	8.8	± 30
PESDU3031D1F	AS	30	33.3	35.10	36.8	1	1	48.4	8.3	± 30
PESDU3331D1F	AT	33	36.7	38.70	40.6	1	1	53.3	7.5	± 30
PESDU3631D1F	AU	36	40.0	42.10	44.2	1	1	58.1	6.9	± 30
PESDU4031D1F	AV	40	44.4	46.80	49.1	1	0.1	64.5	6.2	± 30
PESDU4331D1F	AW	43	47.8	50.30	52.8	1	0.1	69.4	5.8	± 30
PESDU4531D1F	AX	45	50.0	52.65	55.3	1	0.1	72.7	5.5	± 30
PESDU4831D1F	AY	48	53.3	56.10	58.9	1	1	77.4	5.2	± 30
PESDU5131D1F	AZ	51	56.7	59.70	62.7	1	1	82.4	4.9	± 30
PESDU5431D1F	B1	54	60.0	63.15	66.3	1	0.1	87.1	4.6	± 30
PESDU5831D1F	B2	58	64.4	67.80	71.2	1	1	93.6	4.2	± 30
PESDU6031D1F	B3	60	66.7	70.20	73.7	1	0.1	96.8	4.1	± 30
PESDU6431D1F	B4	64	71.1	74.85	78.6	1	0.1	103	3.9	± 30

5. A transient suppressor is normally selected according to the Working Peak Reverse Voltage (VRWM) which should be equal to or greater than the DC or continuous peak operating voltage level.
6. VBR measured at pulse test current IT at ambient temperature of 25°C.
7. Surge current waveform per Figure 2 and derate per Figure 3.

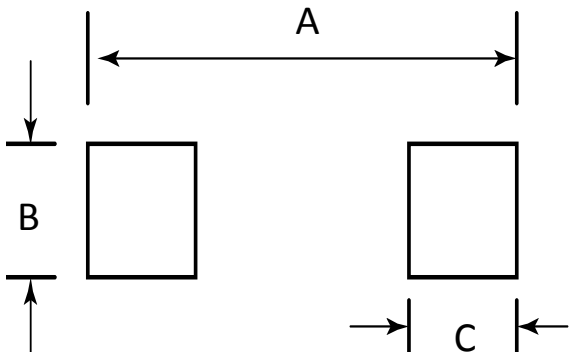
* Include SZ-prefix devices where applicable.

SOD-123FL Package Outline Drawing



DIM	Millimeters		
	Min	Nom	Max
A	2.70	2.80	2.90
B	1.80	1.90	2.00
C	0.80	1.00	1.20
D			1.45
E	0.10	0.20	0.30
H	0.35		0.85
K	3.50		3.90

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	4.19	0.165
B	1.20	0.048
C	0.90	0.036