

ESD3Z3.3CA Thru ESD3Z36CA

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ESD3Z3.3CA Thru ESD3Z36CA

350W Bi-Directional TVS For ESD
Protection : 3.3V ~ 36V

Features

- 350 Watts peak pulse power ($t_p=8/20\mu s$).
- Ultra low capacitance: nA level.
- Ultra low clamping voltage.
- Protects one data or power line.
- Complies with following standards:
 IEC 61000-4-2(ESD) $\pm 30kV$ (Air), $\pm 30kV$ (Contact).
 IEC 61000-4-4(EFT) 40A (5/50ns).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. ESD3Z3.3CA-H.

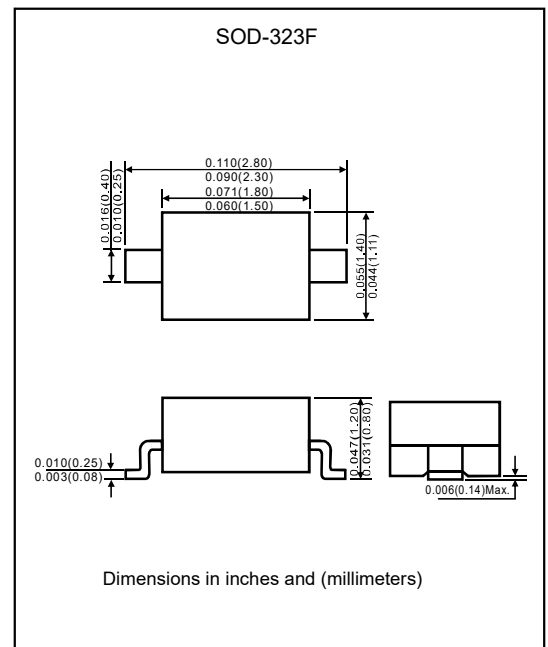
Applications

- Cellular handsets and accessories.
- Personal digital assistants.
- Notebooks, handhelds, and portable instrumentation.
- Peripherals, pagers peripherals, desktop and servers.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, SOD-323F.
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026.
- Mounting Position : Any.

Package outline



Maximum ratings (At $T_A=25^\circ C$ unless otherwise noted)

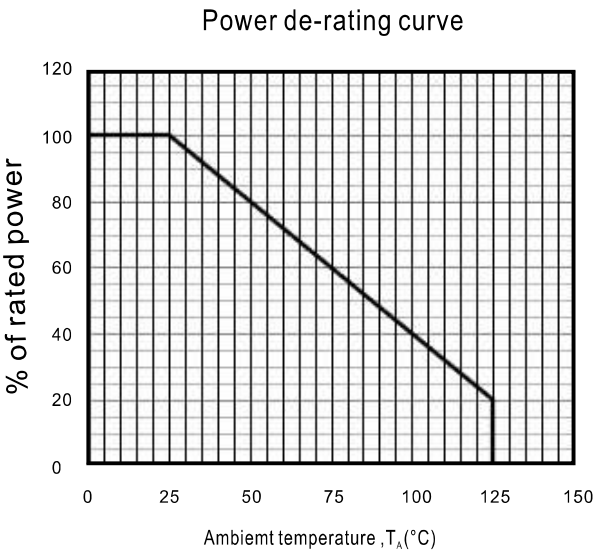
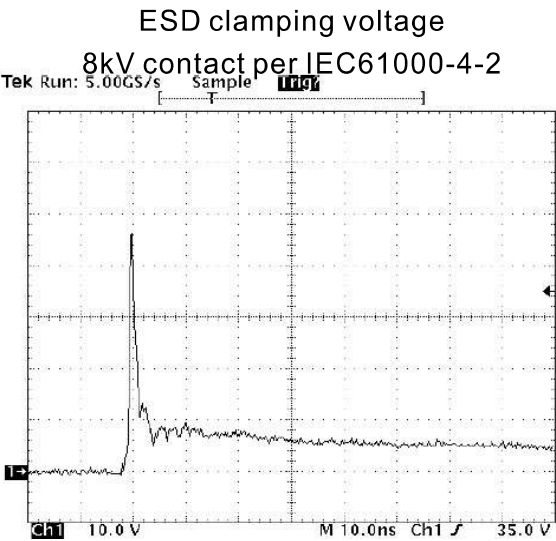
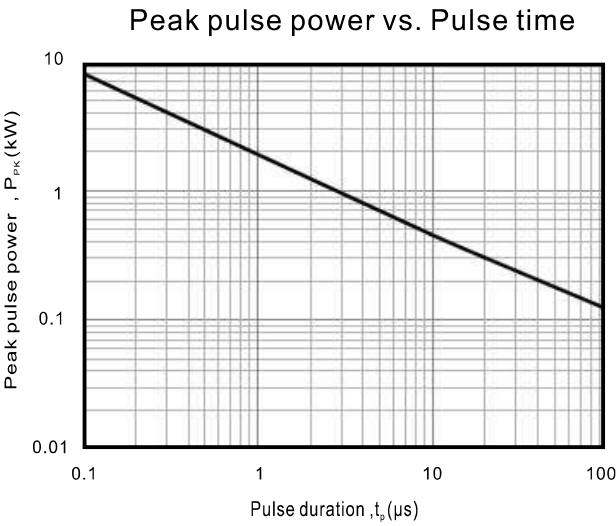
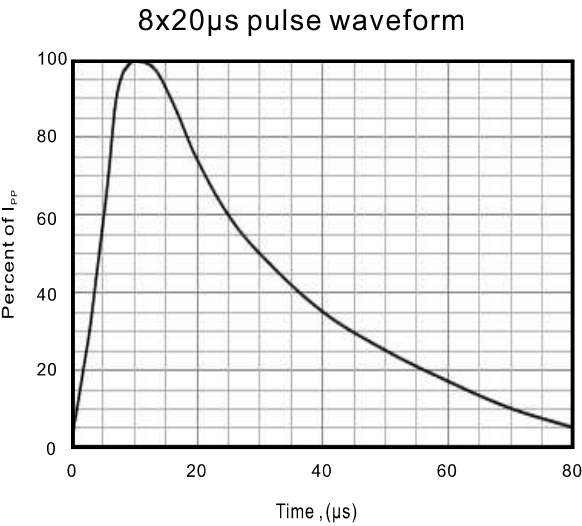
Parameter	Symbols	Ratings	Units
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)			
Operating temperature	T_J	+125	$^\circ C$
Storage temperature range	T_{STG}	-55 to +150	$^\circ C$

Electrical characteristics (At $T_A=25^\circ C$ unless otherwise noted)

Part No.	Reverse wroking voltage $V_{RWM}@I_R$		Breakdown voltage $V_{BR}@I_T=1mA$	Clamping voltage $V_C@I_{PP}=1A$ (8x20 μs pulse)	Clamping voltage $V_C@I_{PP}$ (8x20 μs pulse)		Junction capacitance C_J ($V_R=0V, f=1MHz$)
	V(Max.)	μA (Max.)	V(Min.)	V(Typ.)	V(Typ.)	A(Max.)	pF(Max.)
ESD3Z3.3CA	3.3	0.5	4	5	10	32	70
ESD3Z5.0CA	5	0.5	6	7	11	26	60
ESD3Z8.0CA	8	0.5	8.5	10	15	20	65
ESD3Z12CA	12	0.5	13.3	15	24	15	35
ESD3Z15CA	15	0.5	16.7	20	30	12	30
ESD3Z24CA	24	0.5	26.7	33	45	6	17
ESD3Z36CA	36	0.5	40	41	60	4	10

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Rating and characteristic curves



Note: Data is taken with a 10x attenuator

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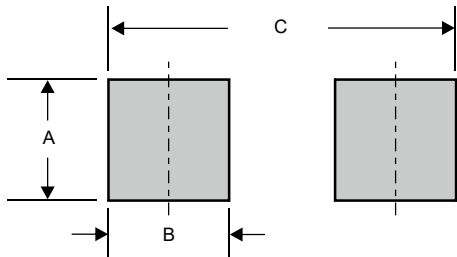
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD3Z3.3CA	03
ESD3Z5.0CA	05
ESD3Z8.0CA	08
ESD3Z12CA	12
ESD3Z15CA	15
ESD3Z24CA	24
ESD3Z36CA	36

Suggested solder pad layout

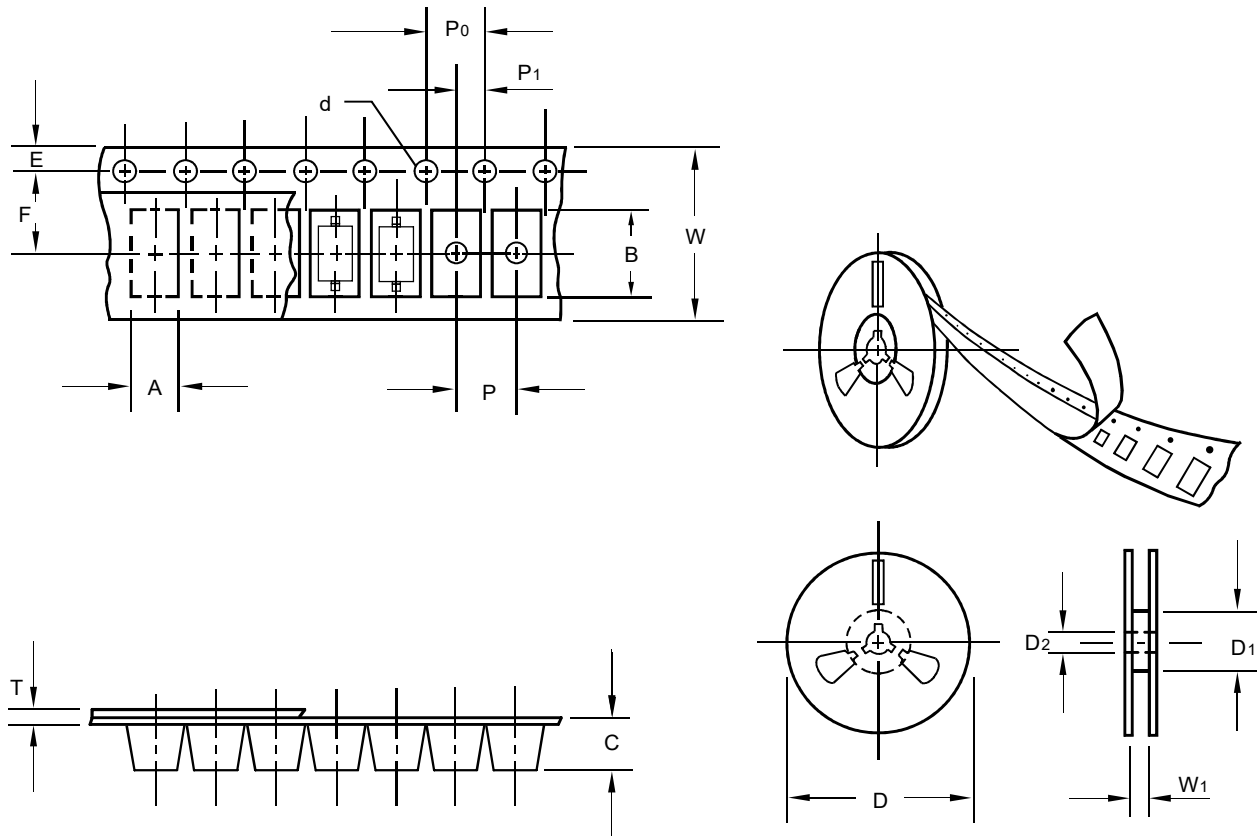


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323F	0.031 (0.80)	0.031 (0.80)	0.120 (3.15)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOD-323F
Carrier width	A	0.5	1.48
Carrier length	B	0.5	3.30
Carrier depth	C	0.1	1.25
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	55.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	9.50

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

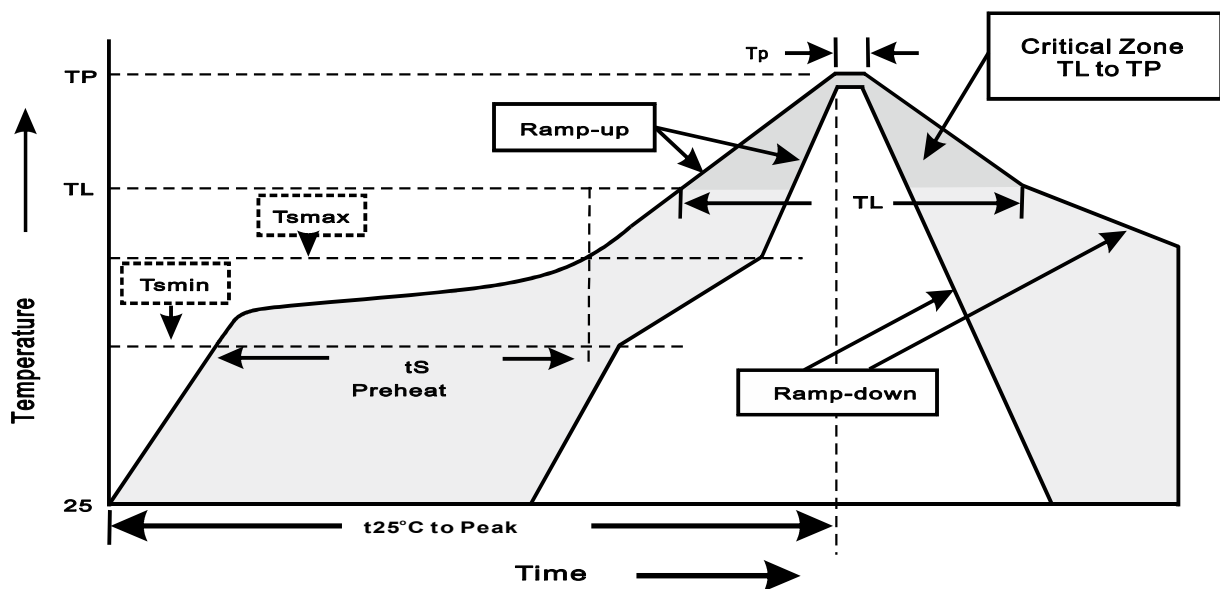
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)
SOD-323F	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$
Preheat - Temperature Min(T_{min}) - Temperature Max(T_{max}) - Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{max} to T_L - Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: - Temperature(T_L) - Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_p)	10~30sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$