

CERA DIODE CDS3C16GTH

RELIABLE ESD PROTECTION OF HIGH SPEED DATA LINES

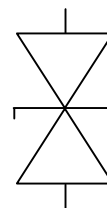
Description

Today's electronic devices are more and more sensitive to electrostatic discharges (ESD) and overvoltages. Therefore reliable protection components become absolutely necessary.

Cera Diodes are ceramic semiconductors with a nonlinear voltage-current characteristic comparable to Zener- and TVS-Diodes, for hardening your valuable electronic against the impact of ESD. They offer a fast response time and a stable behaviour at ambient temperatures up to 85°C. Thanks to their low capacitance High Speed Cera Diodes offer very low signal distortion for high speed data transmission applications.

Features

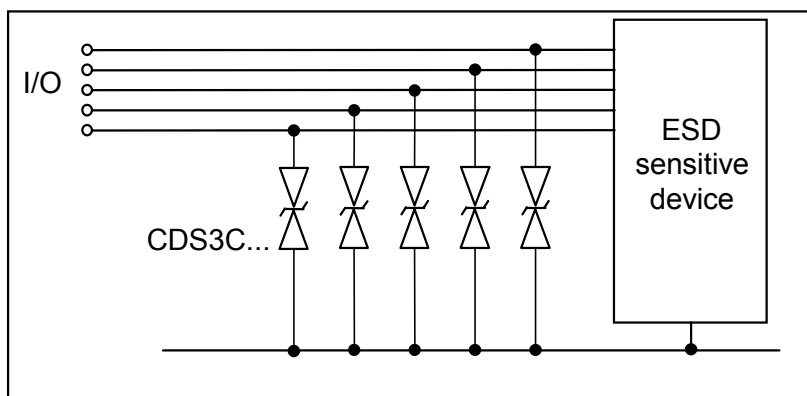
- ESD protection according to IEC 61000-4-2 (level 4)
- Suitable for uni- and bidirectional lines
- Bidirectional characteristic
- Working voltage: 16 V
- Low Capacitance (3pF)
- No derating up to max. operating temperature
- Leadless chip with small dimensions



Applications

- Desktop and Notebook computers
- Portable handheld products (PDA)
- Mobile communication
- Consumer products (Set Top Box, MP3 Player...)
- Liquid Crystal Displays (LCD) / Monitors

Example: Protection of I/O Lines



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Maximum ratings ($T_A = 85^\circ$)

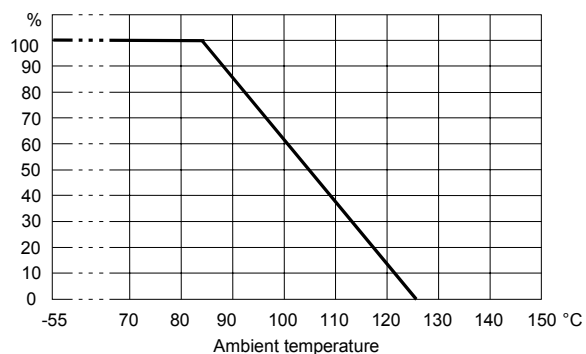
Rating	Symb.	Value	Unit
DC Working Voltage	V_{DC}	16.0	V
RMS Working Voltage	V_{eff}	14.0	V
Operating Temperature (without Derating)	T_j	-40 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +125	$^\circ\text{C}$

Characteristics ($T_A = 25^\circ$)

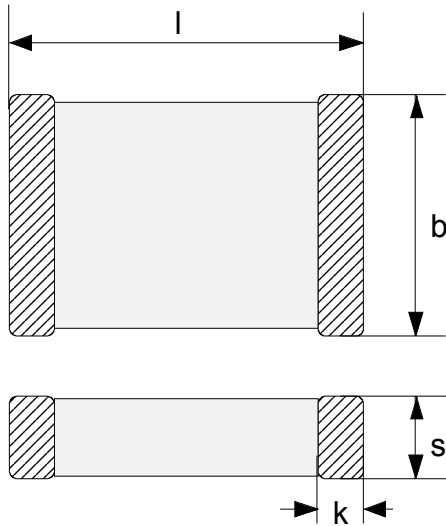
Parameter	Symb.	Conditions	Minimum	Typical	Maximum	Unit
Breakdown Voltage	V_{BR}		-	150	-	V
Leakage Current	I_L	$V_L = 16\text{V}$	-	-	10	μA
Clamping Voltage	V_{CL}	$I_{peak} = 1\text{A},$ $8/20\mu\text{s}$	-	-	290	V
Capacitance	C	@1MHz, 1V	-	3	-	pF

Typical Characteristics

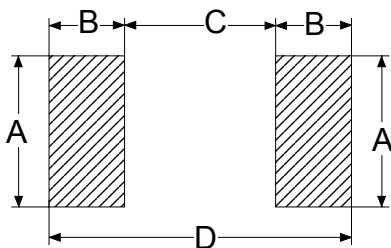
Max. current, energy, operating voltage and average depending on ambient temperature



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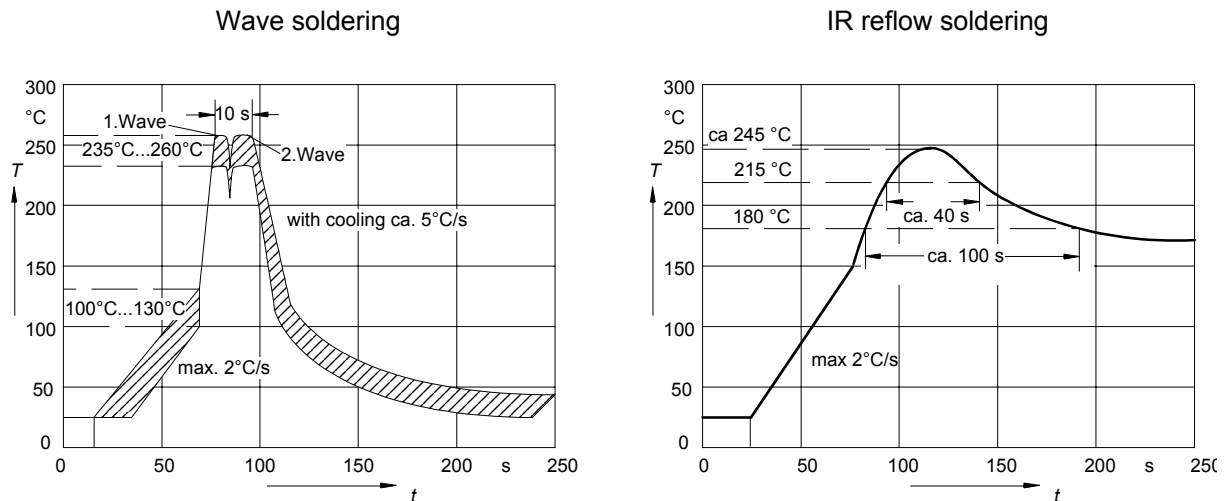
Figure


Symb.	MIN	MAX	Unit
l	1.45	1.75	mm
b	0.7	0.9	mm
s	0.7	0.9	mm
k	0.1	0.4	mm

Recommended Geometry of Solder Pads


A = 1,0 mm
 B = 1,0 mm
 C = 1,0 mm
 D = 3,0 mm

Recommended Soldering Temperature Profiles



The components should be soldered within 12 months after delivery from EPCOS. The parts are to be left in the original packing in order to avoid any soldering problems caused by oxidized terminals.

Storage temperature: -25 to 45°C

Relative humidity: <75% annual average, <95% on max. 30 days in a year.

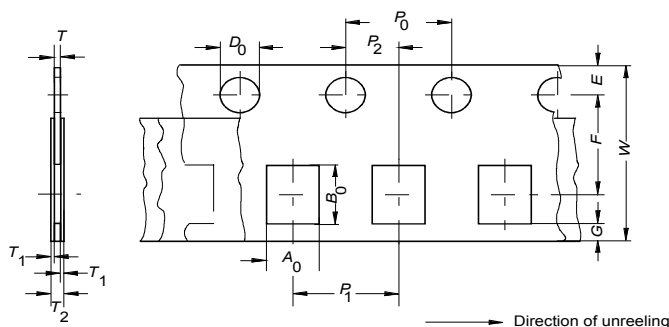
The use of mild, non activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

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Taping according to IEC 60286-3

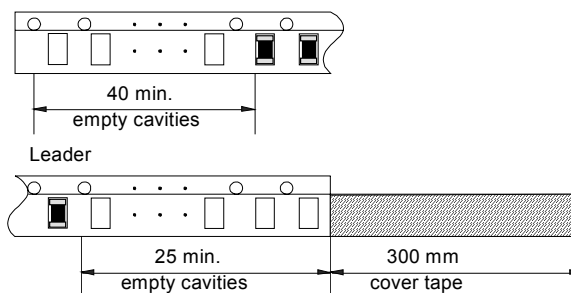
Dimensions and tolerances

Tape material: cardboard



Definition	Symbol	Dim.	Tolerance
Compartment width	A ₀	0.95	± 0.2
Compartment length	B ₀	1.8	± 0.2
Sprocket hole diameter	D ₀	1.5	± 0.1
Sprocket hole pitch	P ₀	4.0	± 0.1 ¹⁾
Distance center hole to center compartment	P ₂	2.0	± 0.05
Pitch of the component compartments	P ₁	4.0	± 0.1
Tape width	W	8.0	± 0.3
Distance edge to center of hole	E	1.75	± 0.1
Distance center hole to center compartment	F	3.5	± 0.05
Distance compartment to edge	G	0.75	min.
Thickness of cardboard tape	T	0.9	max.
Overall thickness	T ₂	1.1	max.

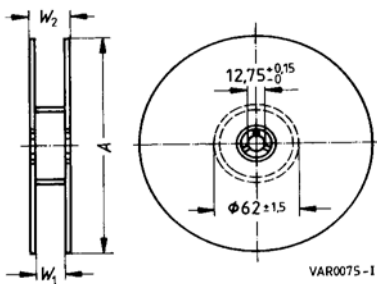
¹⁾ ≤ ± 0.2 mm over any 10 pitches
Tape end (trailer)



Package

Package: 8 mm tape

Reel material: plastic



Definition	Symbol	Dim.	Tolerance
Reel diameter	A	180	-2
Reel width (inside)	W_1	8.4	+1.5 /-0
Reel width (outside)	W_2	14.4	max.

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Type Designation

CD	S	3	C	16	G	T	H
▼	▼	▼	▼	▼	▼	▼	▼
Cera Diode	Single Type	Chip Size 3 = 0603	Chip	DC Working Voltage	Reel Size G = 180mm	Termination T = Nickel Barrier	Designed for protection of High Speed data lines

Ordering Information

Part Number	Ordering Code	Max. DC Working Voltage	Qty per Reel	Reel Size
CDS3C16GTH	B72500D0160H060	16.0	4000	180mm

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