CMXESD70-4

SURFACE MOUNT SILICON
LOW CAPACITANCE
ESD PROTECTION
4-LINE DIODE ARRAY

SOT-26 CASE

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMXESD70-4 is a 4-line silicon diode array packaged in the SOT-26 surface mount case. This device, with its low capacitance, is designed to protect four high speed data or transmission lines from over-voltage transients and ESD damage.

MARKING CODE: CTV70

APPLICATIONS:

- USB 2.0 power and data line protection
- HDMI
- DVI
- Ethernet ports

FEATURES:

- ESD protection: 8kV Contact; 15kV Air (IEC61000-4-2: Level 4)
- Low capacitance
- Protects four I/O lines
- Protects supply voltage rail

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	70	V
Continuous Reverse Voltage	V_R	70	V
Continuous Forward Current	I_F	200	mA
Peak Repetitive Forward Current	I_{FRM}	450	mA
Peak Forward Surge Current, tp=1.0μs	I_{FSM}	2.0	A
Peak Forward Surge Current, tp=1.0s	I_{FSM}	0.5	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	°C
Thermal Resistance	Θ_{JA}	556	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_R	V_R=3.3V		12	30	nA
I_R	V_R=70V		0.03	1.0	μA
I_R	V_R=70V, T_J=150°C		55	100	μA
BV_R	I_R=100μA	70			V
V_F	I_F=1.0mA		0.61	0.715	V
V_F	I_F=10mA		0.74	0.855	V
V_F	I_F=50mA		0.88	1.0	V
V_F	I_F=150mA		1.07	1.25	V
C_J	V_R=0V, f=1.0MHz (I/O to I/O)		0.45	0.9	pF
C_J	V_R=0V, f=1.0MHz (I/O to GND)		0.77	1.0	pF

R2 (9-January 2013)

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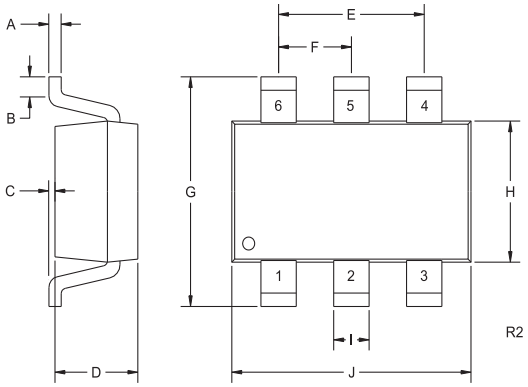
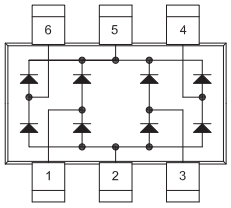
SOT-26 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.007	0.11	0.19
B	0.016	-	0.40	-
C	-	0.004	-	0.10
D	0.039	0.047	1.00	1.20
E	0.074	0.075	1.88	1.92
F	0.037	0.038	0.93	0.97
G	0.102	0.118	2.60	3.00
H	0.059	0.067	1.50	1.70
I	0.016		0.41	
J	0.110	0.118	2.80	3.00

SOT-26 (REV: R2)

PIN CONFIGURATION



LEAD CODE:
1) I/O 1
2) Ground
3) I/O 2
4) I/O 3
5) Supply Voltage (V_{CC})
6) I/O 4

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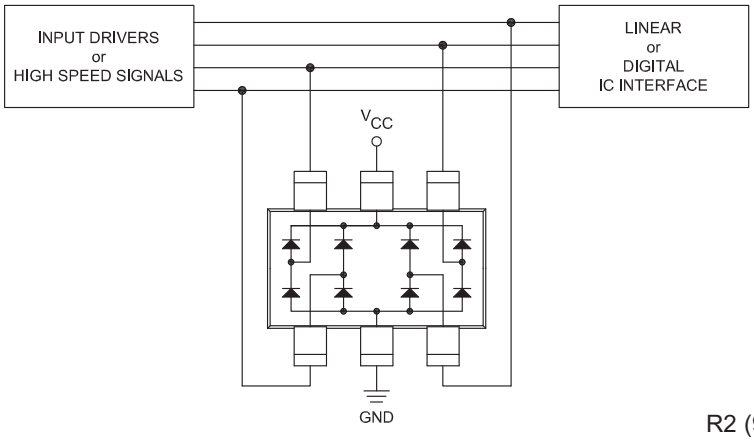
Theory of operation: In this configuration, when the transient voltage exceeds the sum of the diode forward voltage drop (V_F), plus the supply voltage (V_{CC}), the diode will direct the surge to the supply, thereby protecting the high speed data line.



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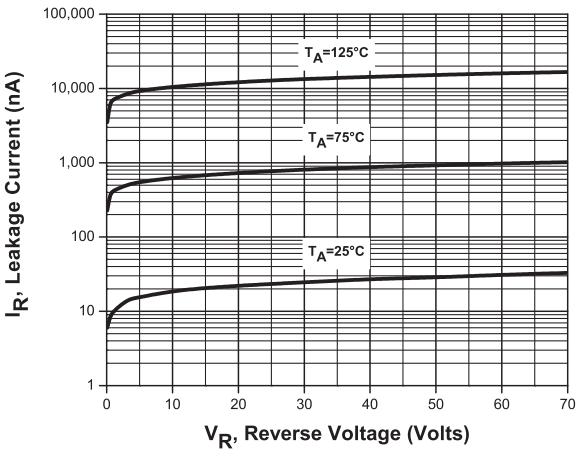
TYPICAL ELECTRICAL CHARACTERISTICS

Typical Per Diode Leakage Current



Typical Per Diode Forward Voltage