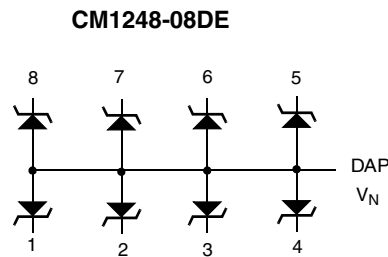


Low Capacitance Transient Voltage Suppressors / ESD Protectors

Features

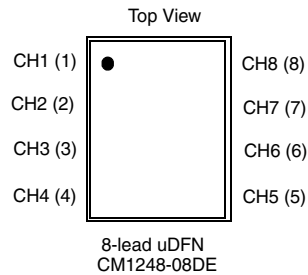
- Low I/O capacitance at 10pF at 0V
- In-system ESD protection to $\pm 15\text{kV}$ contact discharge, per the IEC 61000-4-2 international standard
- Compact SMT package saves board space and facilitates layout in space-critical applications
- Each I/O pin can withstand over 1000 ESD strikes

Electrical Schematics



Note: DAP (Die Attach Pad) is on back-side of chip.

PACKAGE / PINOUT DIAGRAMS



Note: This drawing is not to scale.

PIN DESCRIPTIONS

Pins	NAME	DESCRIPTION
(Refer to package / pinout diagrams)	CHx	The cathode of the respective TVS diode, which should be connected to the node requiring transient voltage protection.
(Refer to package / pinout diagrams)	V _N	The anode of the TVS diodes.

Ordering Information
PART NUMBERING INFORMATION

Pins	Channels	Package	Lead-free Finish	
			Ordering Part Number ¹	Part Marking
8 + DAP	8	uDFN	CM1248-08DE	L48

Note 1: Parts are shipped in Tape & Reel form unless otherwise specified.

Specifications
ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNITS
Storage Temperature Range	-65 to +150	°C

STANDARD OPERATING CONDITIONS

PARAMETER	RATING	UNITS
Operating Temperature	-40 to +85	°C

ELECTRICAL OPERATING CHARACTERISTICS (NOTE 1)						
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
C _{IN}	Channel Input Capacitance	T _A = 25°C, 0VDC, 1MHz; Note 2		10		pF
		0VDC, 1MHz	7		15	pF
ΔC _{IN}	Differential Channel I/O to GND Capacitance	T _A = 25°C, 2.5VDC, 1MHz; Note 2		0.19		pF
V _{RSO}	Reverse Stand-off Voltage	I _R =10μA, T _A = 25°C	5.5			V
		I _R =1mA, T _A = 25°C	6.1			V
I _{LEAK}	Leakage Current	V _{IN} =5.0VDC, T _A = 25°C			0.25	μA
		V _{IN} =5.0VDC			0.75	μA
V _{SIG}	Small Signal Clamp Voltage Positive Clamp Negative Clamp	I = 10mA, T _A = 25°C		6.8		V
		I = -10mA, T _A = 25°C		-0.89		V
V _{ESD}	ESD Withstand Voltage Contact Discharge per IEC 61000-4-2 standard	Notes 2, 3, 4; T _A = 25°C	±15			kV
R _D	Diode Dynamic Resistance Forward Conduction Reverse Conduction	T _A =25°C, I _{PP} = 1A, t _p = 8/20μS; Note 2		0.57 1.36		Ω Ω

Note 1: All parameters specified at T_A = -40°C to +85°C unless otherwise noted.

Note 2: These parameters guaranteed by design and characterization.

Note 3: Standard IEC 61000-4-2 with C_{Discharge} = 150pF, R_{Discharge} = 330Ω, V_N grounded.

Note 4: These measurements performed with no external capacitor on CH_X.

Performance Information

Diode Capacitance

Typical diode capacitance with respect to positive TVS cathode voltage (reverse voltage across the diode) is given in Figure 1.

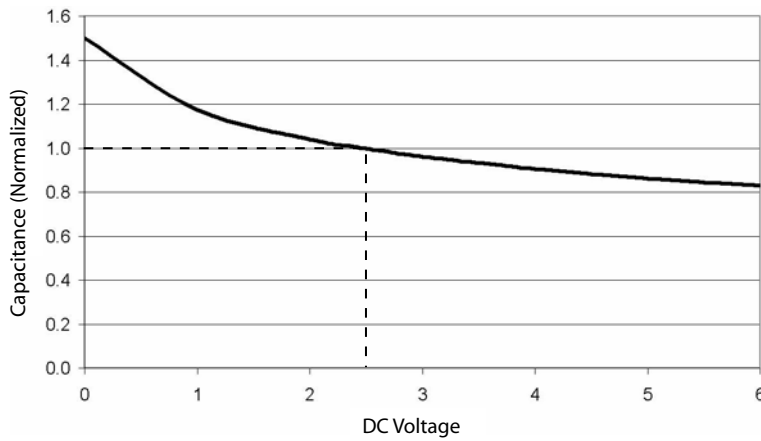


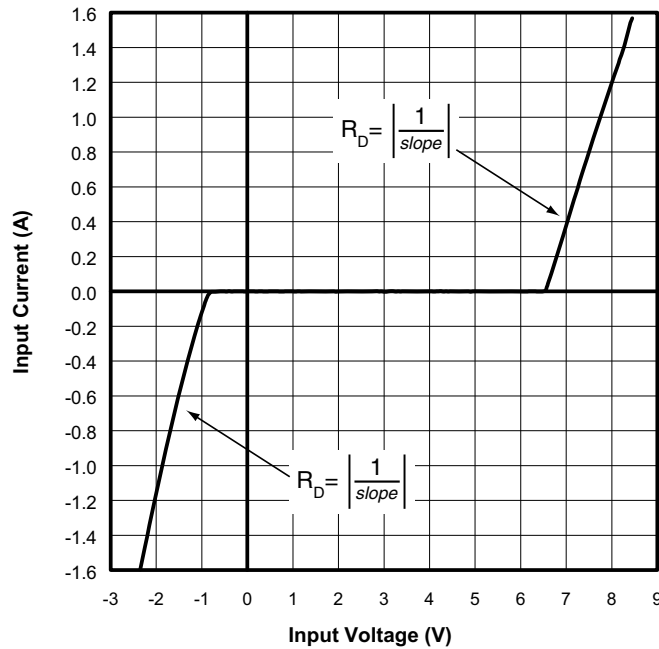
Figure 1. Diode Capacitance vs. Reverse Voltage

Typical High Current Diode Characteristics

Measurements are made in pulsed mode with a nominal pulse width of 0.7ms.

Typical Input VI Characteristics

(Pulse-mode measurements, pulse width = 0.7ms nominal)



Mechanical Details

uDFN-08 Mechanical Specifications, 0.4mm

PACKAGE DIMENSIONS						
Package	uDFN					
JEDEC No.	MO-229C*					
Leads	8					
Dim.	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.127 REF			0.005 REF		
b	0.15	0.20	0.25	0.006	0.008	0.010
D	1.60	1.70	1.80	0.063	0.067	0.071
D2	1.10	1.20	1.30	0.043	0.047	0.051
E	1.25	1.35	1.45	0.049	0.053	0.057
E2	0.30	0.40	0.50	0.012	0.016	0.020
e	0.40 BSC			0.016 BSC		
K	0.20			0.008		
L	0.15	0.25	0.35	0.006	0.010	0.014
# per tape and reel	3000 pieces					
Controlling dimension: millimeters						

*This package is compliant with JEDEC standard MO-229C with the exception of the D, D2, E, E2, K and L dimensions as called out in the table above.



**Dimensions for 8-Lead, 0.4mm pitch
uDFN package**

Tape and Reel Specifications

PART NUMBER	PACKAGE SIZE (mm)	POCKET SIZE (mm) $B_0 \times A_0 \times K_0$	TAPE WIDTH W	REEL DIAMETER	QTY PER REEL	P_0	P_1
CM1248-08DE	1.70 X 1.35 X 0.50	1.95 X 1.60 X 0.60	8mm	178mm (7")	3000	4mm	4mm

