

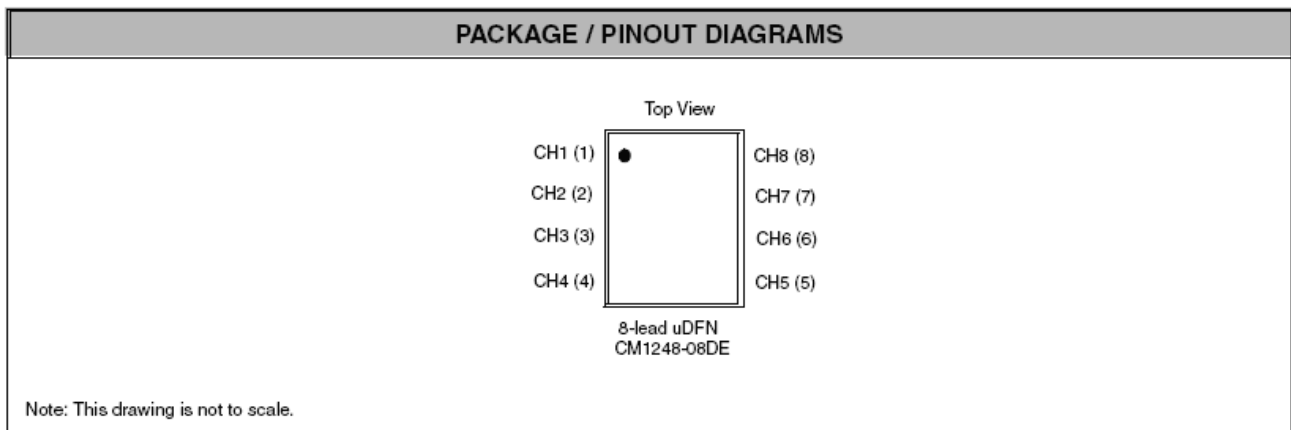
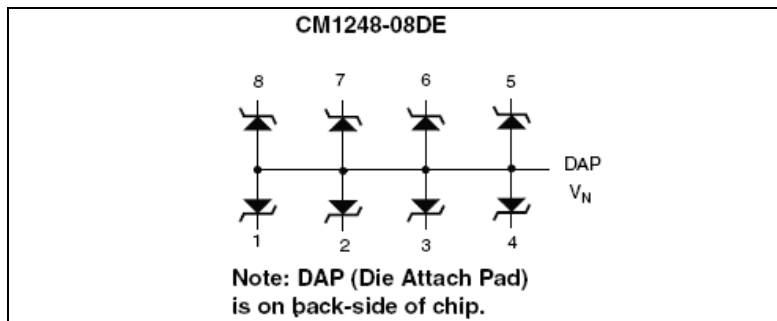


Low Capacitance Transient Voltage Suppressors / ESD Protectors

CM1248-08DE

Features

- Low I/O capacitance at 10pF at 0V
- In-system ESD protection to ±15kV 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



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

CM1248-04DE

ELECTRICAL OPERATING CHARACTERISTICS (NOTE 1)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
C_{IN}	Channel Input Capacitance	$T_A = 25^\circ\text{C}$, 0VDC, 1MHz		10		pF
		0VDC, 1MHz	7		15	pF
ΔC_{IN}	Differential Channel I/O to GND Capacitance	$T_A = 25^\circ\text{C}$, 2.5VDC, 1MHz		0.19		pF
V_{RSO}	Reverse Stand-off Voltage	$I_R = 10\mu\text{A}$, $T_A = 25^\circ\text{C}$	5.5			V
		$I_R = 1\text{mA}$, $T_A = 25^\circ\text{C}$	6.1			V
I_{LEAK}	Leakage Current	$V_{IN} = 5.0\text{VDC}$, $T_A = 25^\circ\text{C}$			0.25	μA
		$V_{IN} = 5.0\text{VDC}$			0.75	μA
V_{SIG}	Small Signal Clamp Voltage Positive Clamp Negative Clamp	$I = 10\text{mA}$, $T_A = 25^\circ\text{C}$		6.8		V
		$I = -10\text{mA}$, $T_A = 25^\circ\text{C}$		-0.89		V
V_{ESD}	ESD Withstand Voltage Contact Discharge per IEC 61000-4-2 standard	Notes 2 and 3; $T_A = 25^\circ\text{C}$	± 15			kV
R_D	Diode Dynamic Resistance Forward Conduction Reverse Conduction	$T_A = 25^\circ\text{C}$, $I_{PP} = 1\text{A}$, $t_p = 8/20\text{ms}$		0.57		Ω
				1.36		Ω

Note 1: All parameters specified at $T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$ unless otherwise noted.

Note 2: Standard IEC 61000-4-2 with $C_{Discharge} = 150\text{pF}$, $R_{Discharge} = 330\Omega$, V_N grounded.

Note 3: 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 Diode Capacitance vs. Reverse Voltage .

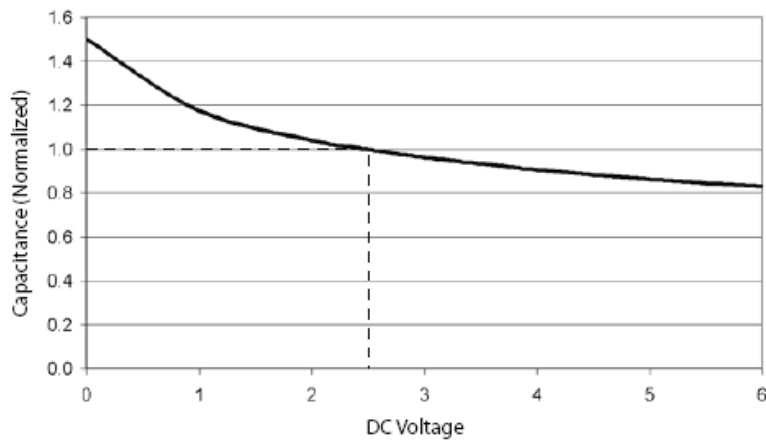
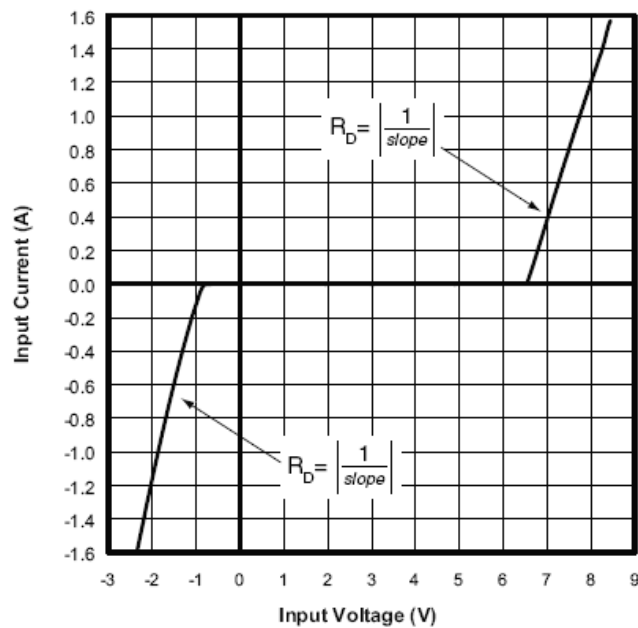


Figure 1. Diode Capacitance vs. Reverse Voltage

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)



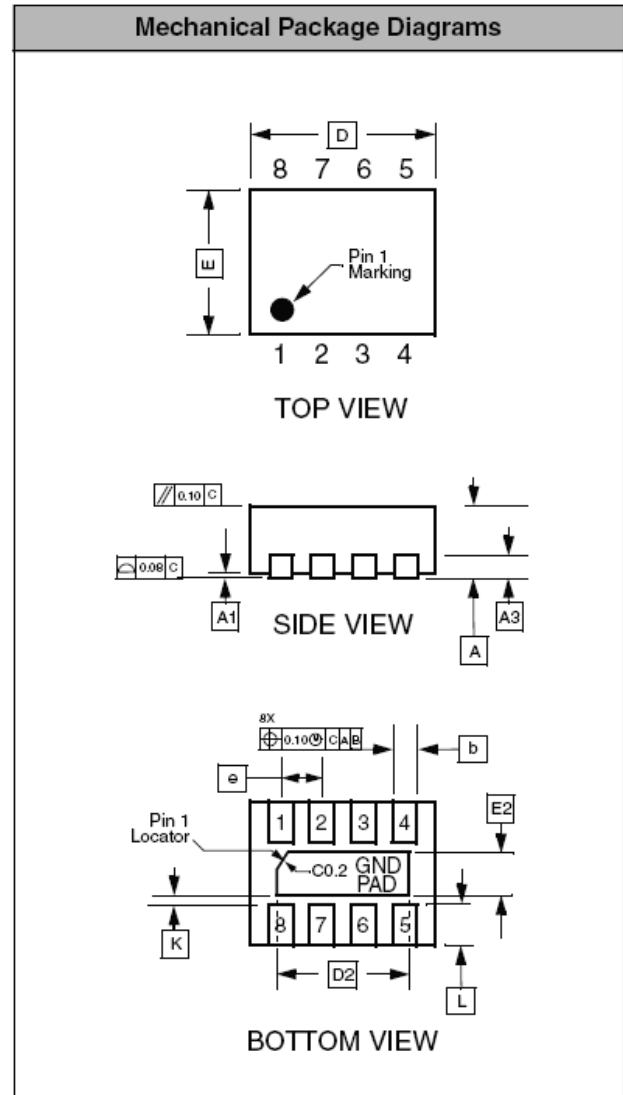
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Mechanical Details


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

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