NEW PRODUCT

DT6250-06MR

6 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Features

- IEC 61000-4-2 (ESD): Contact – ±8kV
- IEC 61000-4-5 (Lightning): 4A (8/20µs)
- 6 Channels of ESD Protection
- Low Channel Input Capacitance of 0.32pF max
- Typically Used at USB 3.0 and High Speed Ports in Any Electronic Product
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

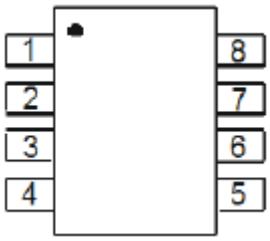
Mechanical Data

- Case: MSOP-8
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: NiPdAu over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.027 grams (Approximate)

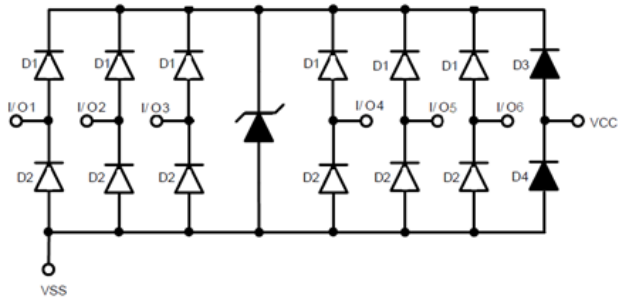
Pin#	Description
1	I/O1
2	I/O2
3	I/O3
4	I/O4
5	I/O5
6	I/O6
7	Vss
8	Vcc

Pin Description

MSOP-8



Top View



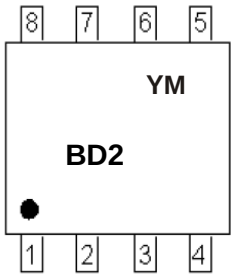
Device Schematic

Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
DT6250-06MR-13	Standard	BD2	13	12	2,500/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



BD2 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: A = 2013)
M = Month (ex: 9 = September)

Date Code Key

Year	2013	2014	2015	2016	2017	2018
Code	A	B	C	D	E	F

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current, per IEC 61000-4-5	I_{PP}	4	A	I/O to V_{SS}, 8/20µs
ESD Protection – Contact Discharge	$V_{ESD\_I/O}$	±8	kV	IO to V_{SS}, per IEC 61000-4-2
Operating Temperature	T_{OP}	-40 to +85	°C	—
Storage Temperature	T_{STG}	-55 to +150	°C	—

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	500	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	250	°C/W

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V_{RWM}	—	—	5.0	V	V_{CC} to V_{SS}
Reverse Leakage Current (Note 6)	I_{R_VCC}	—	—	2.5	µA	V_{CC} = 5V, V_{CC} to V_{SS}
Channel Leakage Current (Note 6)	I_{R_IO}	—	—	1.0	µA	V_{CC} = 5V, any I/O to V_{SS}
Reverse Breakdown Voltage	V_{BR}	6	—	—	V	I_{BV} = 1mA, V_{CC} to V_{SS}
Forward Voltage	V_F	—	0.8	1.2	V	I_F = 15mA, V_{SS} to V_{CC}
ESD Clamping Voltage	$V_{ESD\_I/O}$	—	10	—	V	TLP, 10A, tp = 100ns, I/O to V_{SS}
	V_{ESD_VCC}	—	9	—	V	TLP, 10A, tp = 100ns, V_{CC} to V_{SS}
Differential Resistance	$R_{DIF\_I/O}$	—	0.35	—	Ω	TLP, 10A, tp = 100ns, I/O to V_{SS}
	R_{DIF_VCC}	—	0.25	—	Ω	TLP, 10A, tp = 100ns, V_{CC} to V_{SS}
Channel Input Capacitance	$C_{I/O}$	—	0.32	—	pF	$V_{I/O}$ = 2.5V, V_{CC} = 5V, f = 1MHz
Delta $C_{I/O}$	$C_{I/OMAX}$-$C_{I/OMIN}$	—	0.05	—	pF	$C_{I/OMAX}$-$C_{I/OMIN}$

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

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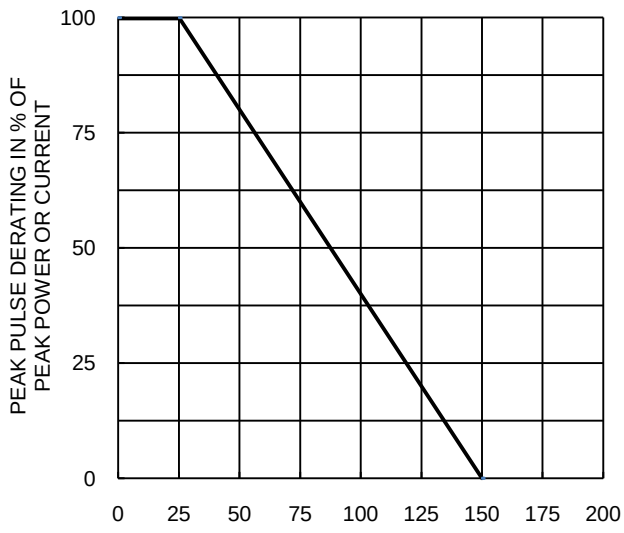

Figure 1 Pulse Derating Curve

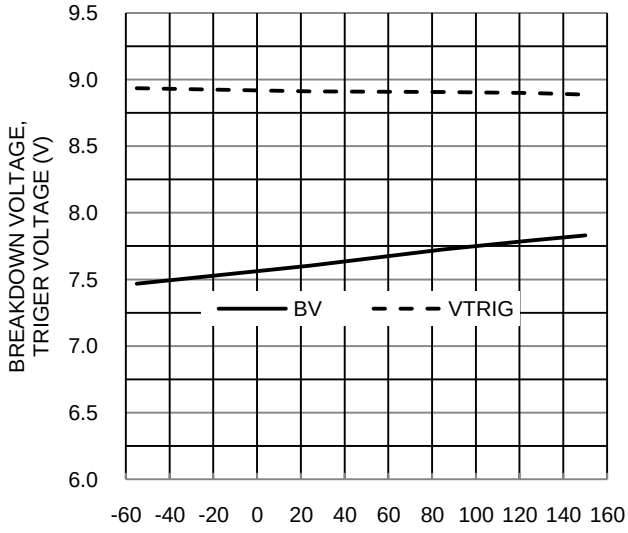

Figure 2 Breakdown Voltage, Trigger Voltage vs Ambient Temperature

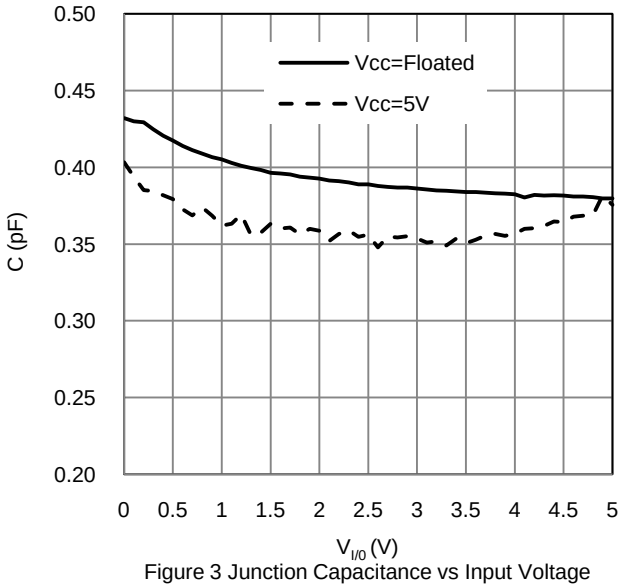

Figure 3 Junction Capacitance vs Input Voltage

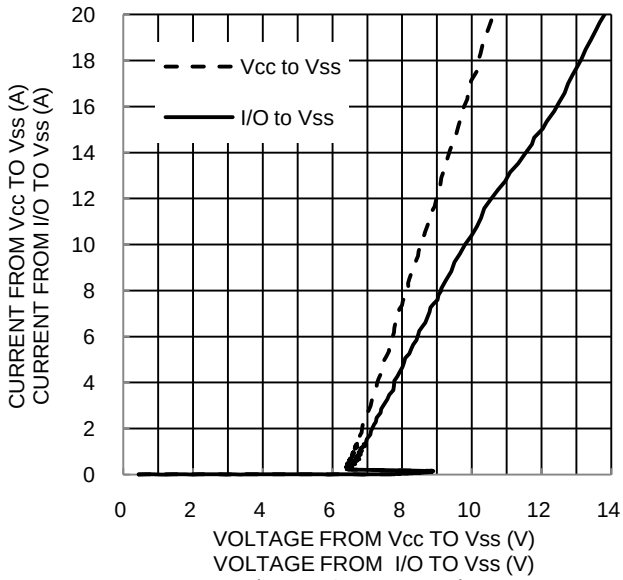

Figure 4 Current vs Voltage

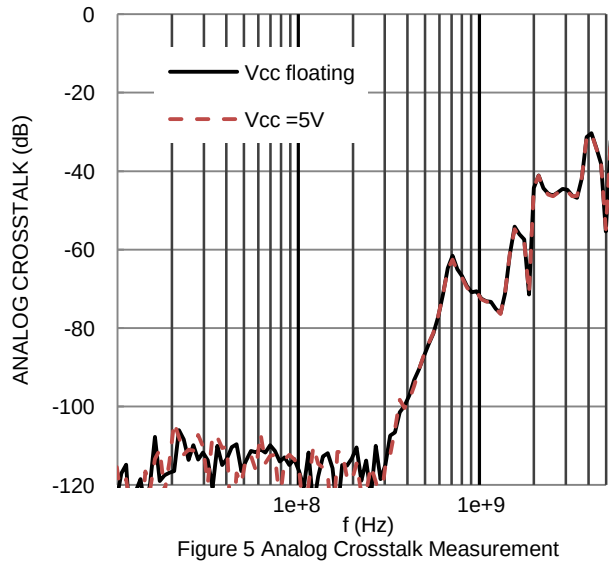

Figure 5 Analog Crosstalk Measurement

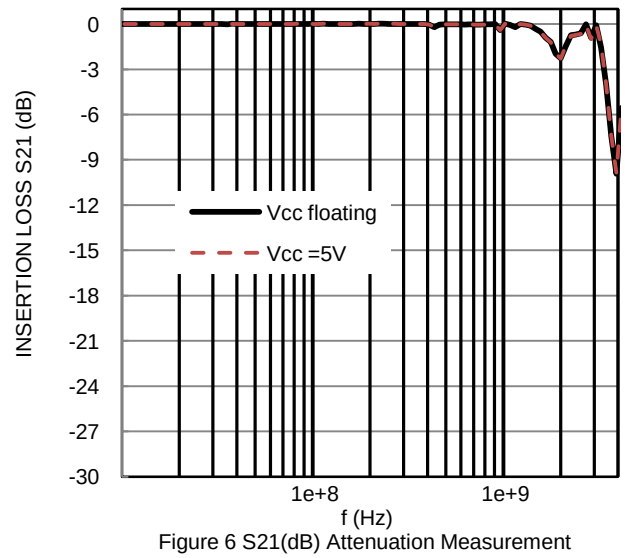

Figure 6 S21(dB) Attenuation Measurement

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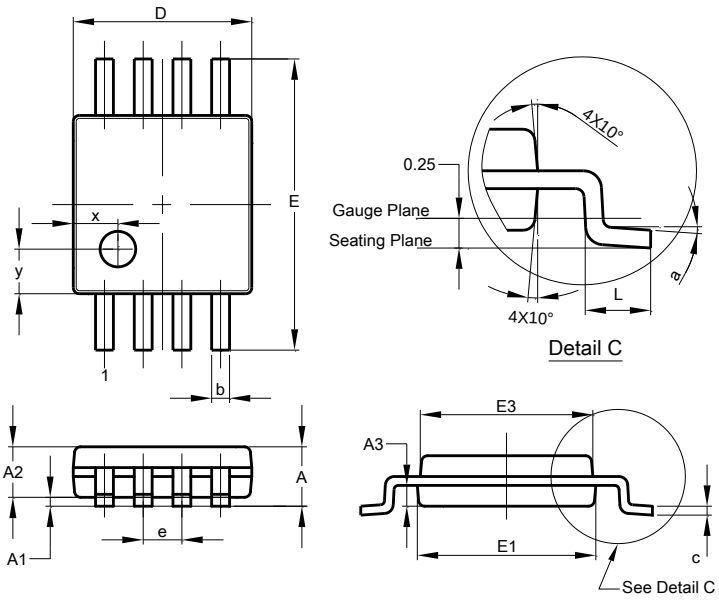
Package Outline Dimensions

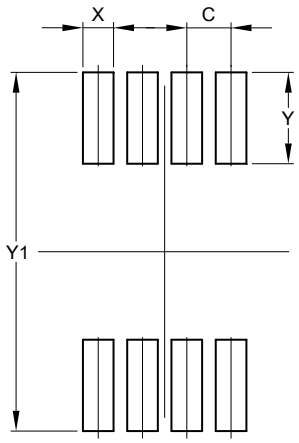
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



MSOP-8			
Dim	**Min**	**Max**	**Typ**
A	-	1.10	-
A1	0.05	0.15	0.10
A2	0.75	0.95	0.86
A3	0.29	0.49	0.39
b	0.22	0.38	0.30
c	0.08	0.23	0.15
D	2.90	3.10	3.00
E	4.70	5.10	4.90
E1	2.90	3.10	3.00
E3	2.85	3.05	2.95
e	-	-	0.65
L	0.40	0.80	0.60
a	0°	8°	4°
x	-	-	0.750
y	-	-	0.750
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	0.650
X	0.450
Y	1.350
Y1	5.300

NEW PRODUCT

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