

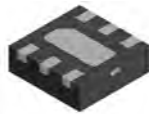
## Features

- 5-line ESD Protection
- Sub-miniature Package (1.6 x 1.6mm)
- Low Capacitance – 42pF typ @  $V_R = 0V$
- Provides a High Level of Protection from ESD to IEC61000-4-2
  - $\pm 30kV$  Contact Discharge
  - $\pm 30kV$  Air Discharge
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

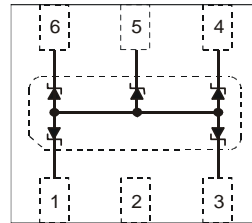
## Mechanical Data

- Case: DFN1616-6
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (NiPdAu Finish over Copper leadframe).
- Polarity: Pin 1 Dot and Center Pad Notch, See Diagram
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.004 grams (approximate)

DFN1616-6



BOTTOM VIEW


 TOP VIEW  
Internal Schematic

## Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit	
Peak Pulse Current, 8/20 $\mu s$ waveform, single shot, per IEC61000-4-5	$I_{PPM}$	5	A	
Peak Pulse Power, 8/20 $\mu s$ waveform, single shot, per IEC61000-4-5	$P_{PP}$	70	W	
ESD Rating	ESD	Human Body Model	8	kV
		Machine Model	400	V
		IEC61000-4-2 Air Discharge	30	kV
		IEC61000-4-2 Contact Discharge	30	kV

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	256	$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

## Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Reverse Standoff Voltage $V_{RWM}$ @ $I_{RWM} = 1\mu A$	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current	Max. Reverse Leakage @ $V_{RWM}$ (Note 4)	Max. Clamping Voltage @ $I_{PP} = 1A$ per IEC61000-4-5	Max. Clamping Voltage $V_C$ @ $I_{PP} = 5A$ per IEC61000-4-5	Max. Forward Clamping Voltage $V_F$ @ $I_F = 1A$ per IEC61000-4-5	Max. Forward Clamping Voltage $V_F$ @ $I_F = 5A$ per IEC61000-4-5	Max Total Capacitance $V_R = 0V$ $f = 1MHz$	Typical Total Capacitance $V_R = 2.5V$ $f = 1MHz$
Min (V)	Min (V)	Max (V)	$I_T$ (mA)	$I_R$ ( $\mu A$ )	$V_C$ (V)	$V_C$ (V)	$V_F$ (V)	$V_F$ (V)	$C_T$ (pF)	$C_T$ (pF)
5.0	6	8	1.0	0.1	9.5	12.5	2	4	50	25

- Notes:
1. No Purposefully added Lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. Only one switching diode powered on.
  4. Short duration pulse test used to minimize self-heating effect.

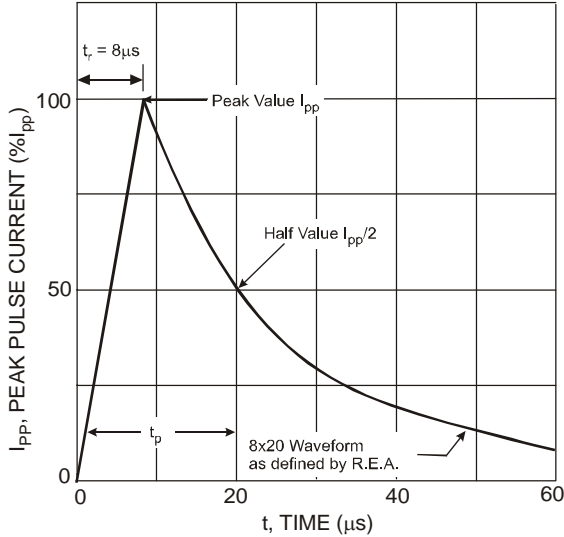


Fig. 1 Pulse Waveform

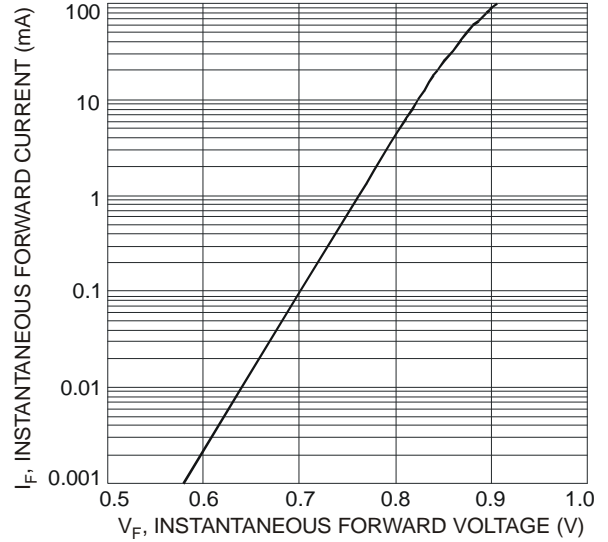


Fig. 2 Typical Forward Characteristics

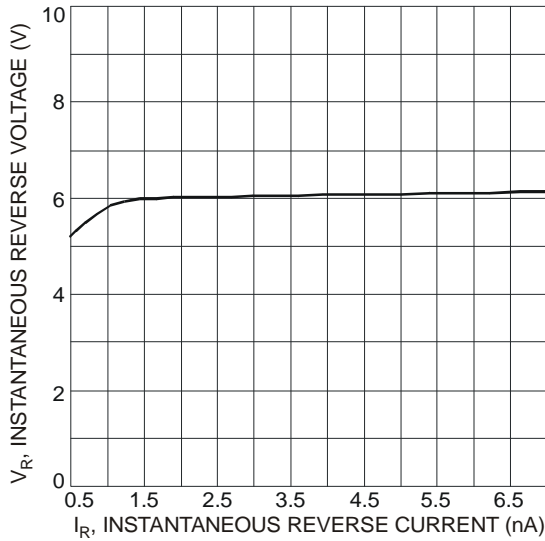


Fig. 3 Typical Reverse Characteristics

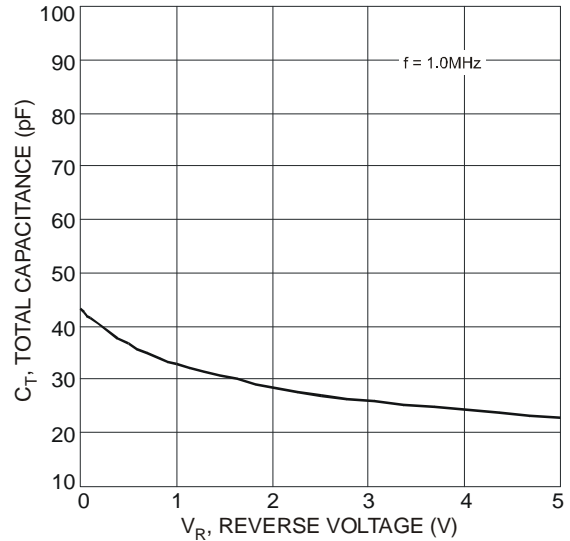


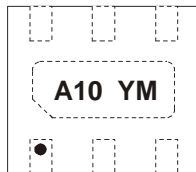
Fig. 4 Typical Capacitance vs. Reverse Voltage

**Ordering Information** (Note 5)

Part Number	Case	Packaging
DMF05LCFLP-7	DFN1616-6	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



A10 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: X = 2010)  
 M = Month (ex: 9 = September)

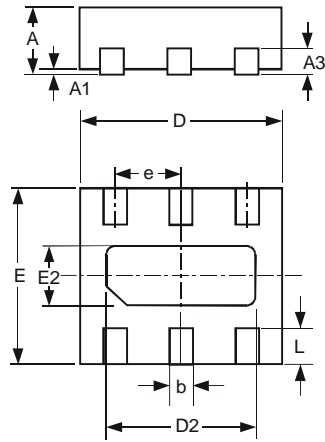
Date Code Key

Year	2010	2011	2012	2013	2014	2015
Code	X	Y	Z	A	B	C

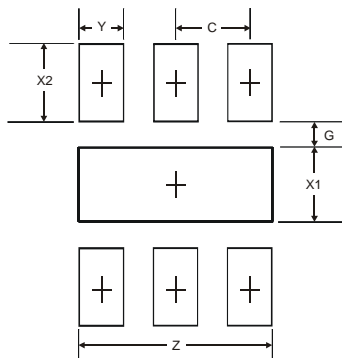
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**



DFN1616-6			
Dim	Min	Max	Typ
A	0.545	0.605	0.575
A1	0	0.05	0.02
A3	—	—	0.13
b	0.20	0.30	0.25
D	1.55	1.675	1.60
D2	1.10	1.30	1.20
E	1.55	1.675	1.60
e	—	—	0.50
E2	0.30	0.50	0.40
L	0.275	0.375	0.325
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.3
G	0.175
X1	0.50
X2	0.525
Y	0.30
C	0.50

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