



THE DATASHEET OF UF5GD1-13



Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _o (A)	V _F (V)	I _R (μA)
400	5	1.4	10

Description and Applications

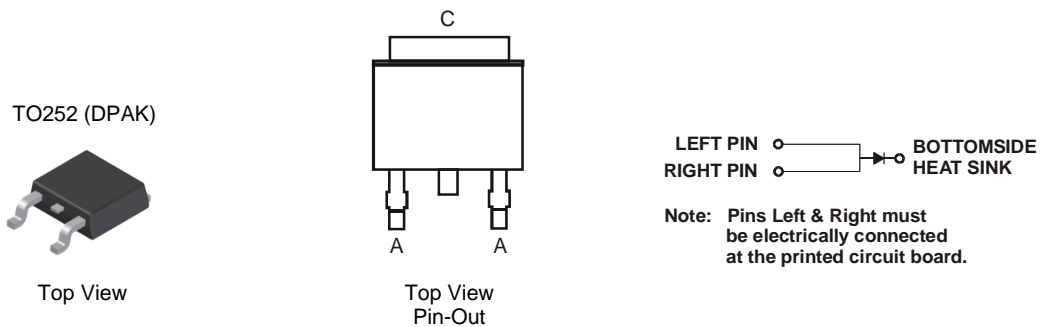
Suitable for rectification and freewheeling for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunication applications.

Features and Benefits

- Soft, Ultra-Fast Switching Capability for High Efficiency
- Low Leakage Current
- Low Forward Voltage Drop
- High Current Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Diagram



Ordering Information (Note 4)

Part Number	Case	Packaging
UF5GD1-13	TO252 (DPAK)	2,500 pieces/reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 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



- UF5G = Product Type Marking Code
- JII = Manufacturers' Code Marking
- YYWW = Date Code Marking
- YY = Last Two Digits of Year (ex: 14 for 2014)
- WW = Week Code (01 to 53)

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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	400	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current	I _O	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	150	A

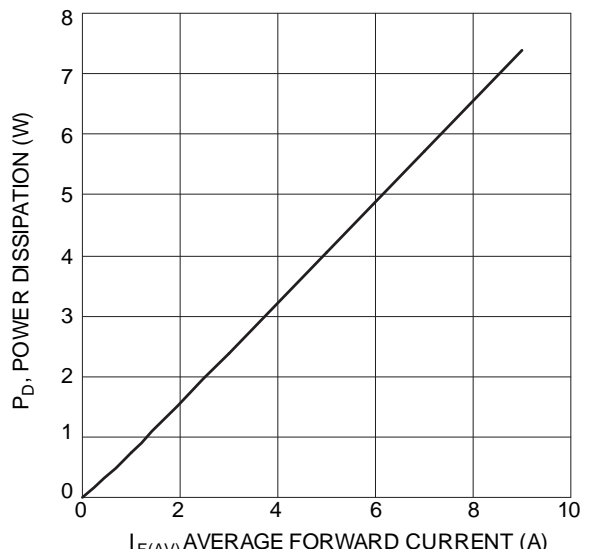
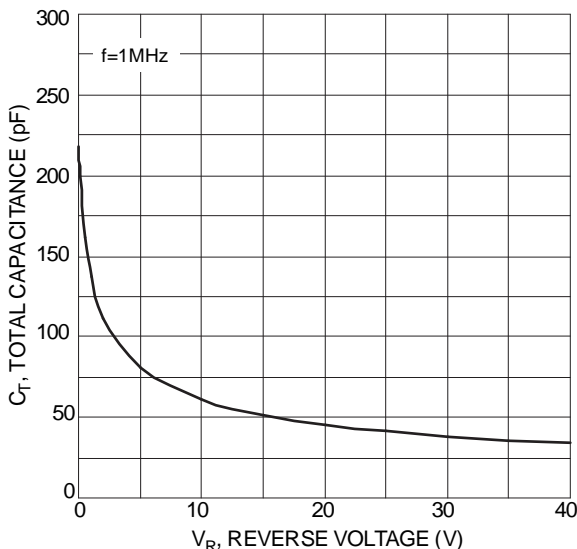
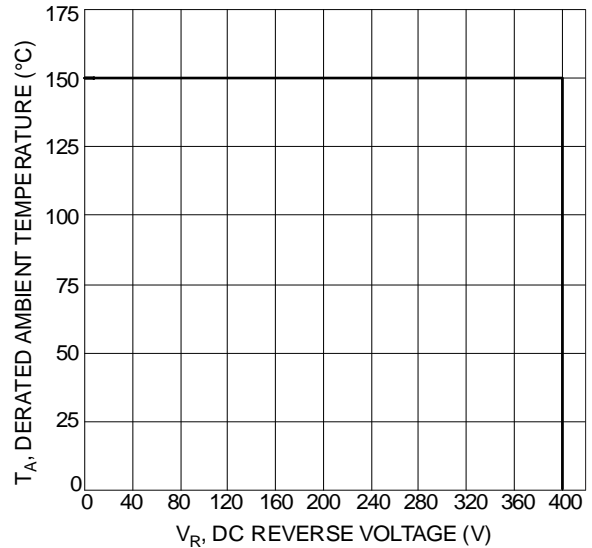
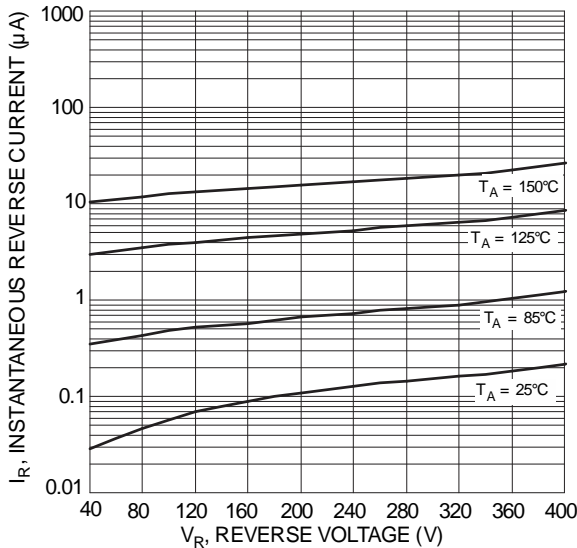
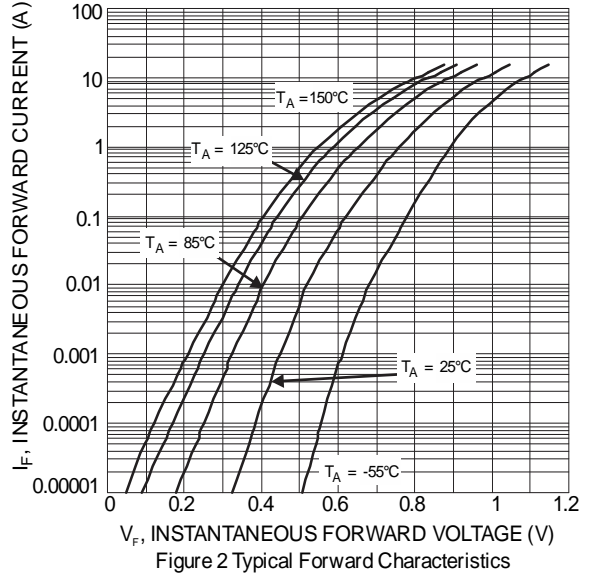
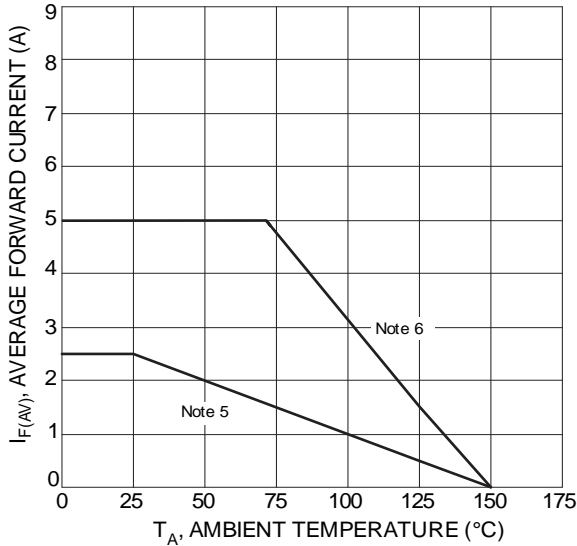
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 6)	R _{θJC}	2.0	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	16	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	R _{θJC}	9.0	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	65	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

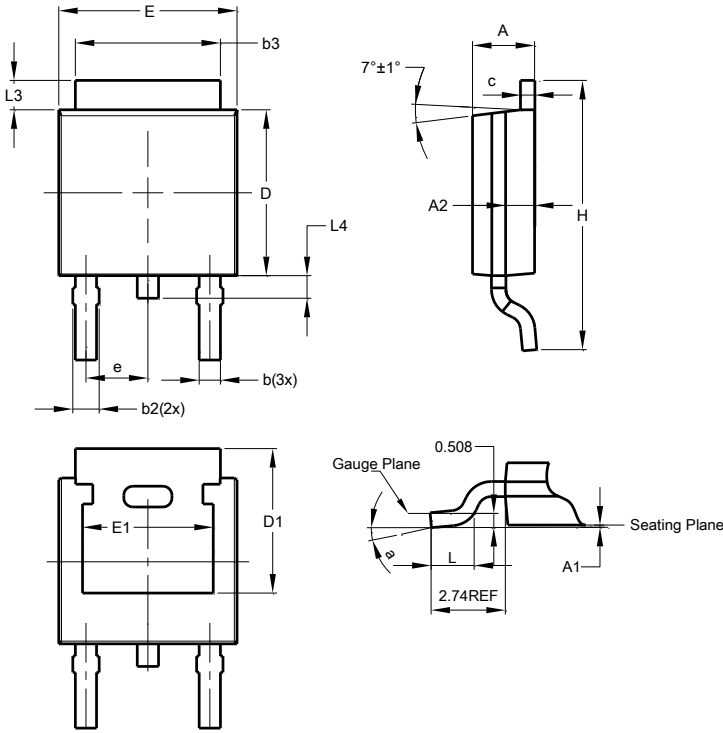
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	400	—	—	V	I _R = 10μA
Forward Voltage	V _F	—	0.93 0.74	1.4 1.0	V	I _F = 5A, T _J = +25°C I _F = 5A, T _J = +125°C
Reverse Leakage Current (Note 7)	I _R	—	0.23 0.008	10 0.2	μA mA	V _R = 400V, T _J = +25°C V _R = 400V, T _J = +125°C
Reverse Recovery Time	t _{rr}	—	35	45	ns	I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A
Junction Capacitance	C _J	—	61	—	pf	V _R = 10V _{DC} , f = 1MHz

Notes: 5. Device mounted on FR4 PCB, 2oz with 1x recommended pad layout.
6. Device mounted on 2-inch Al substrate.
7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

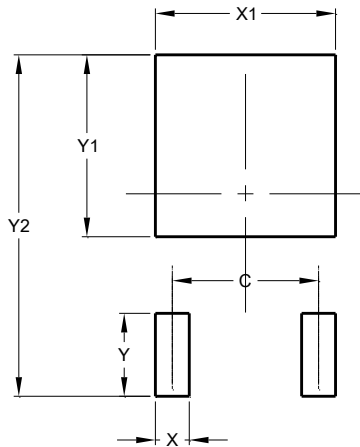
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
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	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

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