

## Features

- Dual N-Channel MOSFET
- Low On-Resistance:
  - 3.0  $\Omega$  @ 4.5V
  - 4.0  $\Omega$  @ 2.5V
  - 6.0  $\Omega$  @ 1.8V
  - 10  $\Omega$  @ 1.5V
- Very Low Gate Threshold Voltage, 1.0V max
- Low Input Capacitance
- Fast Switching Speed
- Ultra-Small Surface Mount Package
- ESD Protected Gate (HBM 300V)
- **Lead, Halogen, and Antimony Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**

## Mechanical Data

- Case: SOT-963
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.0027 grams (approximate)

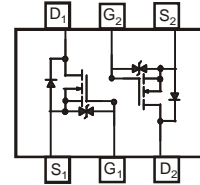


ESD PROTECTED

SOT-963



TOP VIEW


 TOP VIEW  
 Schematic and Transistor Diagram

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

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 10$	V
Drain Current (Note 1)	$I_D$	230	mA
Pulsed Drain Current	$T_P = 10\mu\text{s}$ $I_{DM}$	805	mA

## Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Total Power Dissipation (Note 1)	$P_D$	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. 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).

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
<b>OFF CHARACTERISTICS (Note 4)</b>							
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	20	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 100μA	
Zero Gate Voltage Drain Current @ T <sub>C</sub> = 25°C	I <sub>DSS</sub>	—	—	500	nA	V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V	
Gate-Body Leakage	I <sub>GSS</sub>	—	—	±1	μA	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V	
				±500			nA
				±100			
<b>ON CHARACTERISTICS (Note 4)</b>							
Gate Threshold Voltage	V <sub>GS(th)</sub>	0.5	—	1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	—	1.8	3.0	Ω	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 100mA	
						2.4	V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 50mA
						2.9	V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 20mA
						3.7	V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 10mA
						10.0	
Forward Transconductance	Y <sub>fs</sub>	—	242	—	mS	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.1A	
Source-Drain Diode Forward Voltage	V <sub>SD</sub>	0.5	—	1.0	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = 115mA	
<b>DYNAMIC CHARACTERISTICS</b>							
Input Capacitance	C <sub>iSS</sub>	—	14.1	—	pF	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V f = 1.0MHz	
Output Capacitance	C <sub>oSS</sub>	—	2.9	—	pF		
Reverse Transfer Capacitance	C <sub>rSS</sub>	—	1.6	—	pF		
<b>SWITCHING CHARACTERISTICS, V<sub>GS</sub> = 4.5V (Note 5)</b>							
Turn-On Delay Time	t <sub>d(on)</sub>	—	3.8	—	ns	V <sub>GS</sub> = 4.5V, V <sub>DD</sub> = 10V I <sub>D</sub> = 200mA, R <sub>G</sub> = 2.0Ω	
Rise Time	t <sub>r</sub>	—	7.9	—			
Turn-Off Delay Time	t <sub>d(off)</sub>	—	13.4	—			
Fall Time	t <sub>f</sub>	—	15.2	—			

Notes: 4. Short duration pulse test used to minimize self-heating effect.  
5. Switching characteristics are independent of operating junction temperature.

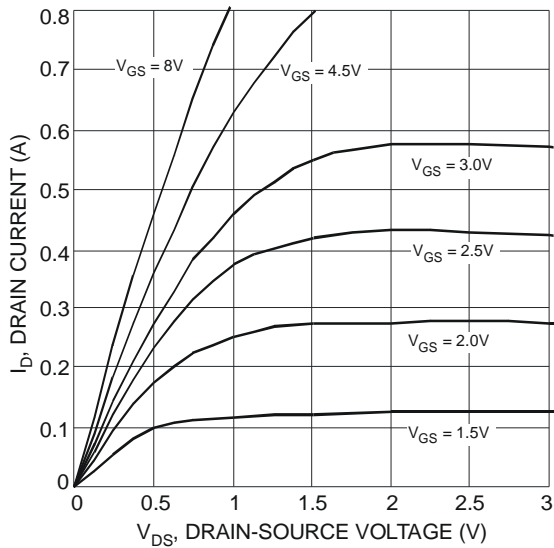


Fig. 1 Typical Output Characteristic

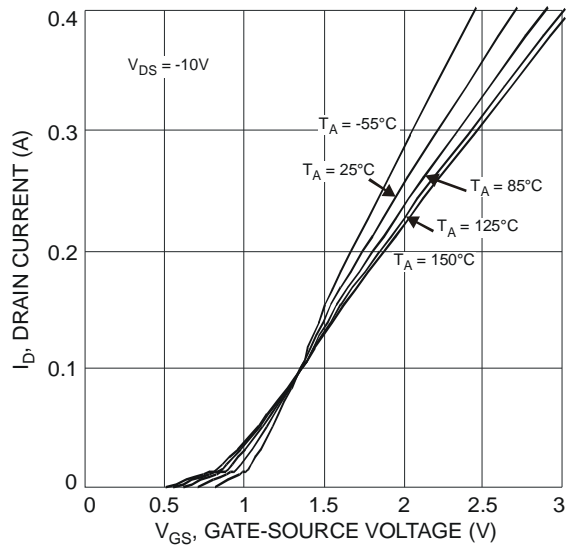


Fig. 2 Typical Transfer Characteristic

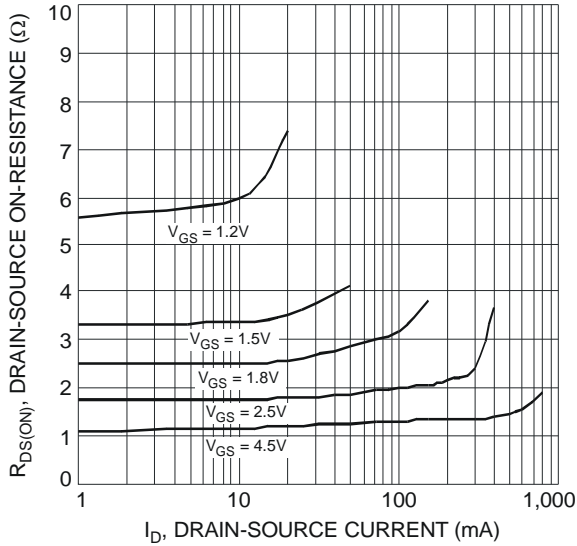


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

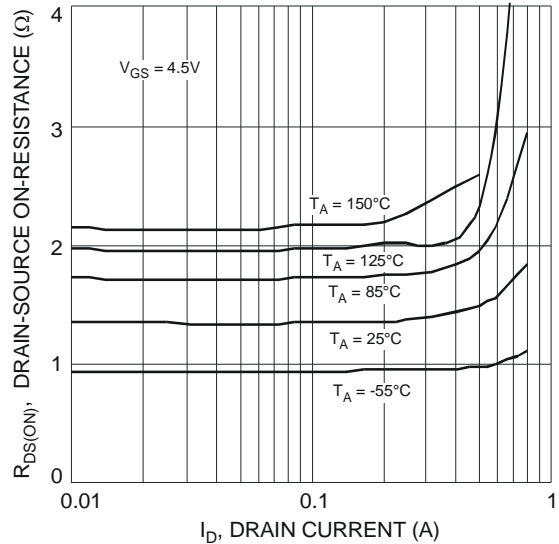


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

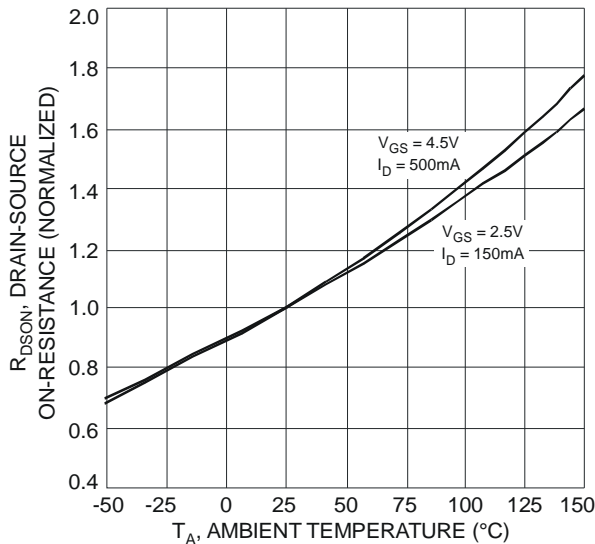


Fig. 5 On-Resistance Variation with Temperature

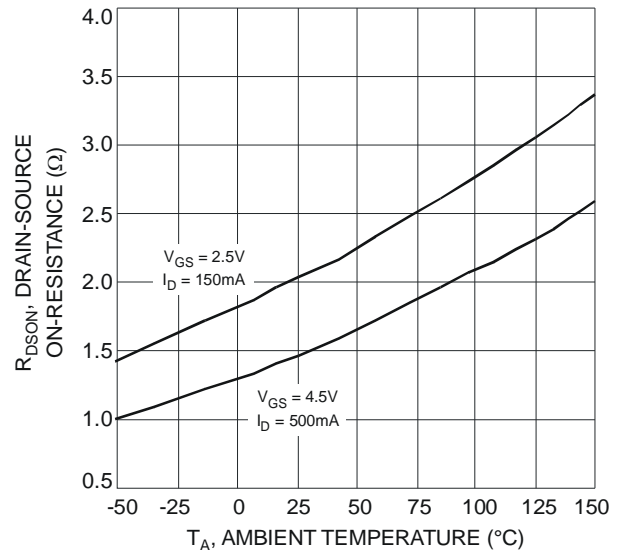


Fig. 6 On-Resistance Variation with Temperature

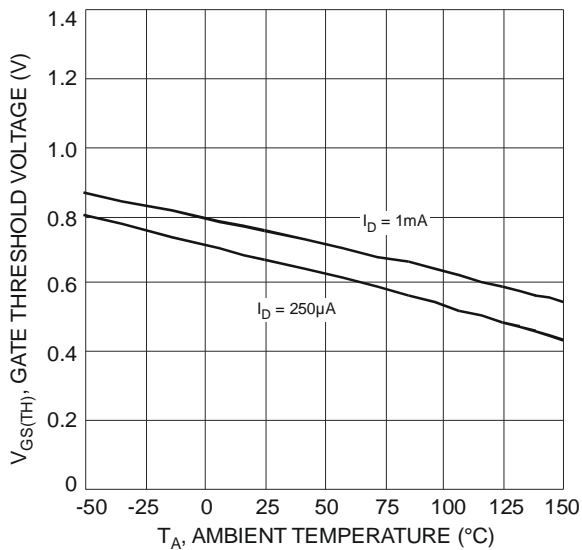


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

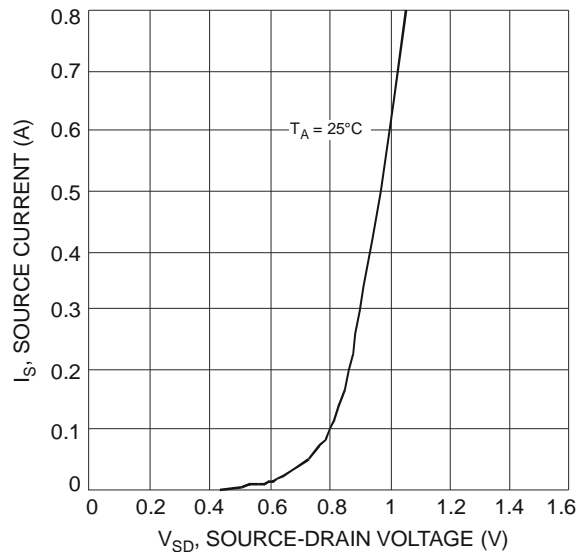


Fig. 8 Diode Forward Voltage vs. Current

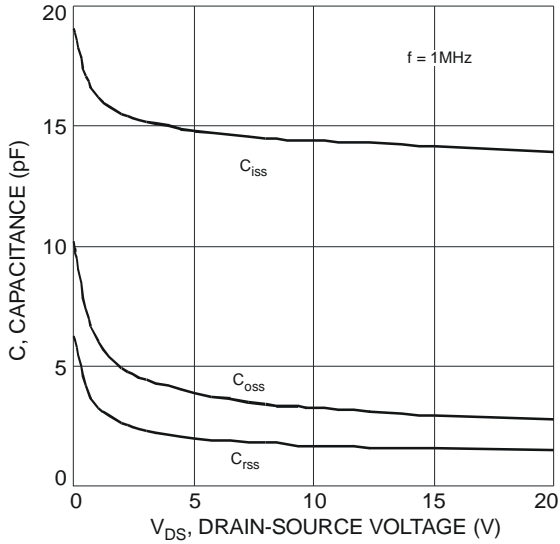


Fig. 9 Typical Total Capacitance

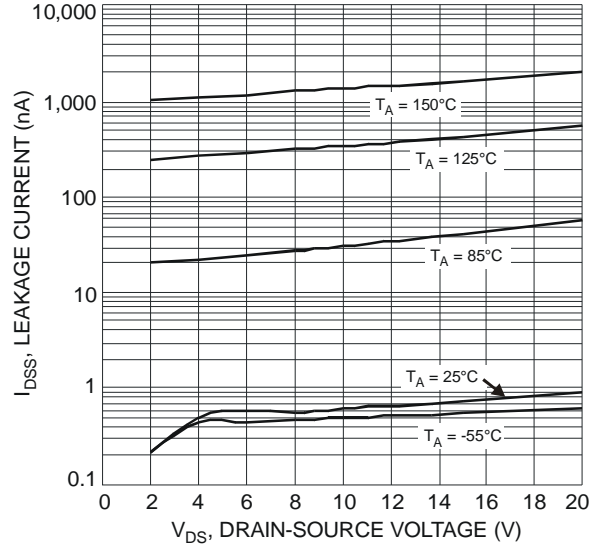


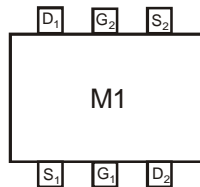
Fig. 10 Typical Leakage Current vs. Drain-Source Voltage

**Ordering Information** (Note 6)

Part Number	Case	Packaging
DMN26D0UDJ-7	SOT-963	10,000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

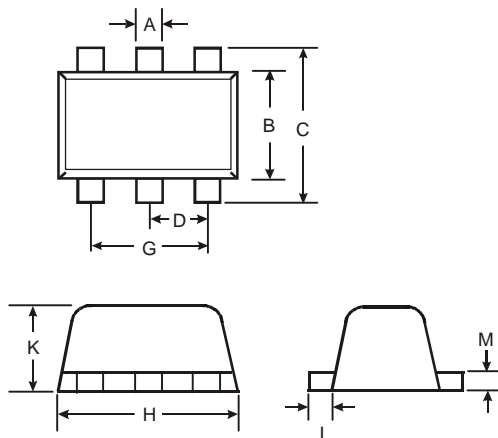
**Marking Information** (Note 7)



M1 = Product Type Marking Code

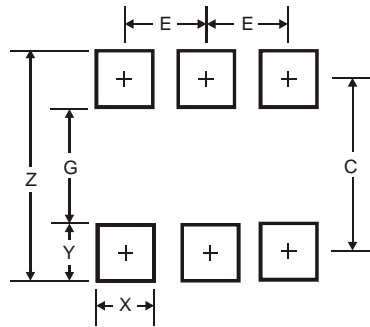
Notes: 7. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).

**Package Outline Dimensions**



SOT-963			
Dim	Min	Max	Typ
A	0.10	0.20	0.15
B	0.95	1.05	1.00
C	0.95	1.05	1.00
D		0.35	
G		0.70	
H	0.95	1.05	1.00
K	0.40	0.50	0.45
L	0.05	0.15	0.10
M	0.05	0.15	0.10
All Dimensions in mm			

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.10
G	0.70
X	0.20
Y	0.20
C	0.90
E	0.35

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