

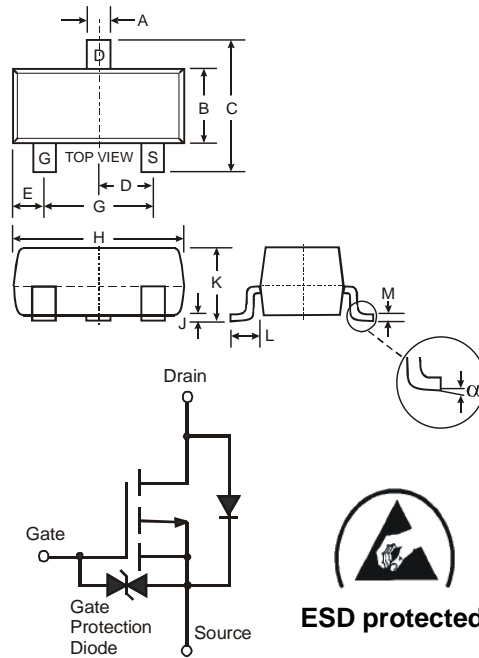
NEW PRODUCT

**Features**

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **ESD Protected Gate**
- **"Green" Device (Note 4)**
- **Qualified to AEC-Q101 standards for High Reliability**

**Mechanical Data**

- Case: SC-59
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking Information: See Page 4
- Ordering & Date Code Information: See Page 4
- Weight: 0.008 grams (approximate)



SC-59		
Dim	Min	Max
A	0.30	0.50
B	1.40	1.80
C	2.50	3.00
D	0.85	1.05
E	0.30	0.70
G	1.70	2.10
H	2.70	3.10
J	—	0.10
K	1.00	1.40
L	0.55	0.70
M	0.10	0.35
α	0°	8°
All Dimensions in mm		

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DSS</sub>	-30	V
Gate-Source Voltage	V <sub>GSS</sub>	±20	V
Drain Current (Note 1) Steady State	I <sub>D</sub>	-0.7	A
Pulsed Drain Current (Note 3)	I <sub>DM</sub>	-2.8	A
Total Power Dissipation (Note 1)	P <sub>d</sub>	500	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	250	°C/W
Operating and Storage Temperature Range	T <sub>i</sub> , T <sub>STG</sub>	-65 to +150	°C

- Notes:
1. Device mounted on FR-4 PCB.
  2. No purposefully added lead.
  3. Pulse width ≤10μS, Duty Cycle ≤1%.
  4. 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 5)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	-30	—	—	V	$V_{GS} = 0V, I_D = -250mA$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	-10	$\mu A$	$V_{DS} = -30V, V_{GS} = 0V$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 10$	$\mu A$	$V_{GS} = \pm 20V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 5)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	—	-3.0	V	$V_{DS} = -10V, I_D = -1.0mA$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	0.20 0.35	0.25 0.45	$\Omega$	$V_{GS} = -10V, I_D = -0.4A$ $V_{GS} = -4.5V, I_D = -0.4A$
Forward Transfer Admittance	$ Y_{fs} $	—	1	—	S	$V_{DS} = -10V, I_D = 0.4A$
Diode Forward Voltage (Note 5)	$V_{SD}$	—	-0.8	-1.1	V	$V_{GS} = 0V, I_S = -0.7A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	160	—	pF	$V_{DS} = -10V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	—	120	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	50	—	pF	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$t_{D(ON)}$	—	10	—	ns	$V_{DD} = -10V, I_D = -0.4A,$ $V_{GS} = -5.0V, R_{GEN} = 50\Omega$
Turn-Off Delay Time	$t_{D(OFF)}$	—	25	—	ns	
Turn-On Rise Time	$t_r$	—	25	—	ns	
Turn-Off Fall Time	$t_f$	—	40	—	ns	

Notes: 5. Short duration test pulse used to minimize self-heating effect.

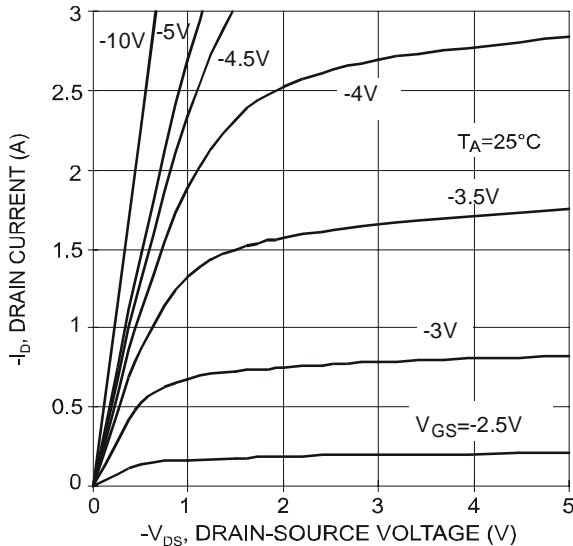


Fig. 1 Typical Output Characteristics

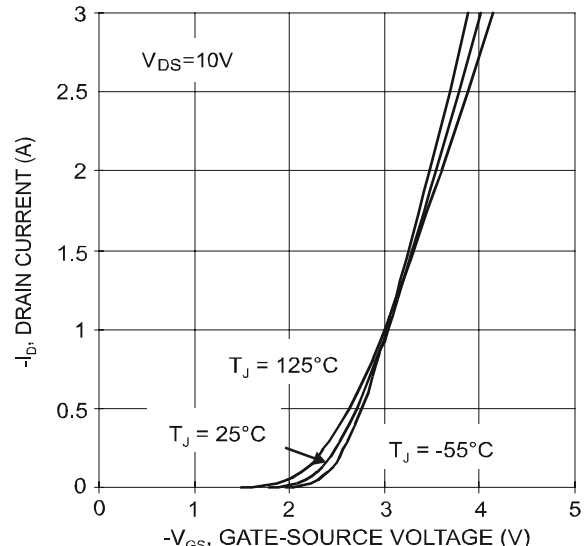


Fig. 2 Typical Transfer Characteristics

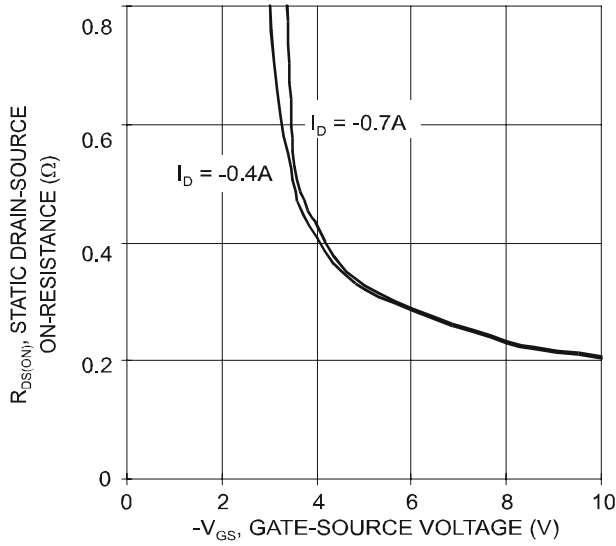


Fig. 3 On-Resistance vs. Gate Voltage

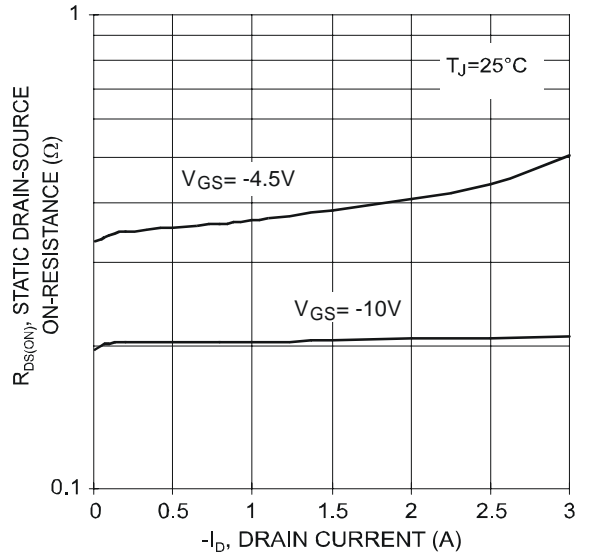


Fig. 4 On-Resistance vs. Drain Current

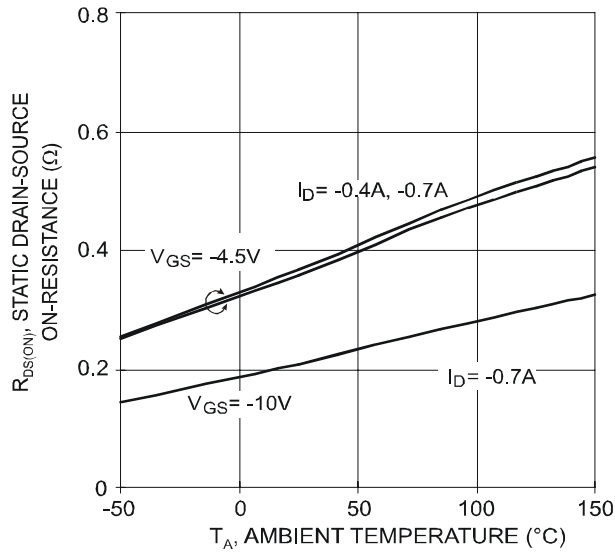


Fig. 5 On-Resistance Variation with Temperature

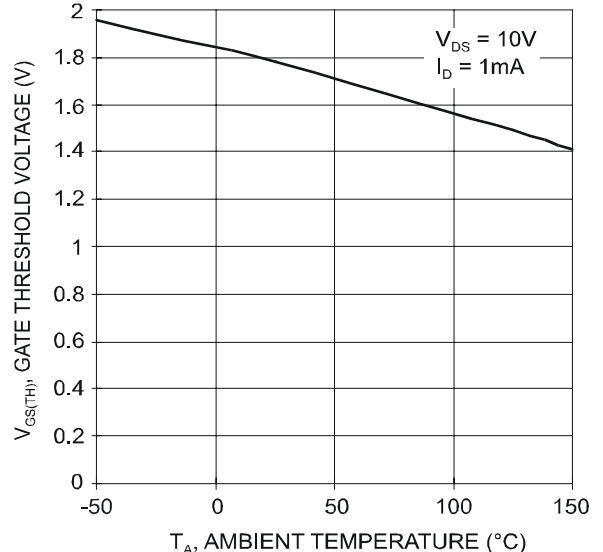


Fig. 6 Gate-Source Threshold Voltage with Temperature

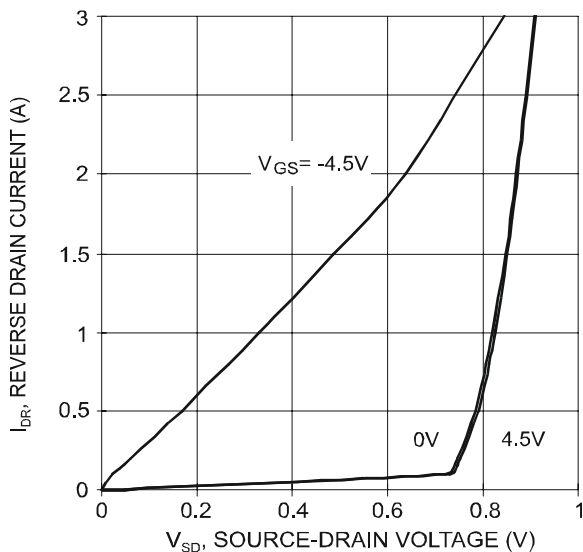


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

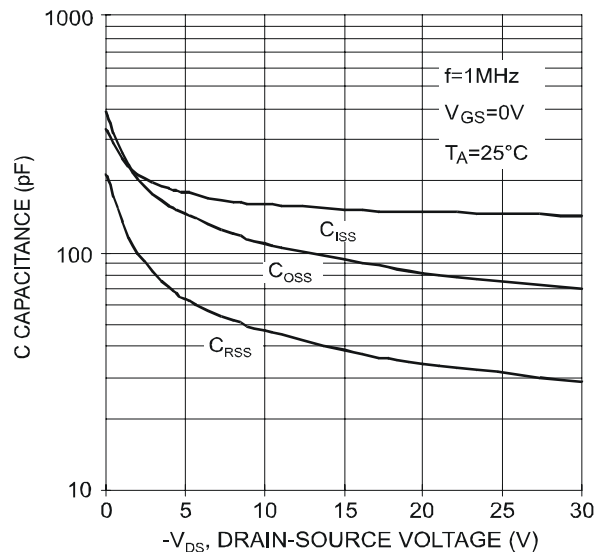


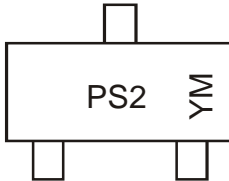
Fig. 8: Typical Junction Capacitance

## Ordering Information (Note 6)

Device	Packaging	Shipping
DMP3030SN-7	SC-59	3000/Tape & Reel

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

## Marking Information



PS2 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: T = 2006  
 M = Month ex: 9 = September

### Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

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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