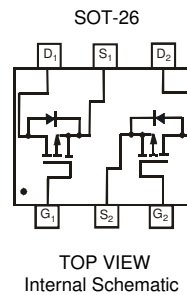
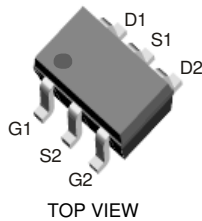


DUAL P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR
Features

- Dual P-Channel MOSFET
- Low On-Resistance
 - 150 mΩ @ $V_{GS} = -4.5V$
 - 200 mΩ @ $V_{GS} = -2.5V$
 - 240 mΩ @ $V_{GS} = -1.8V$
- Very Low Gate Threshold Voltage $V_{GS(th)} \leq 1V$
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**
- **Qualified to AEC-Q101 standards for High Reliability**

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals 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: 0.015 grams (approximate)


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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 12	V
Drain Current (Note 1)	I_D	-2.0 -1.5	A
Pulsed Drain Current	I_{DM}	-7	A

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	P_D	600	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	208	$^\circ C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ C$

- Notes:
1. Device mounted on FR-4 PCB.
 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.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1.0 -5.0	μA	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$ $V_{DS} = -20V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 100	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.45	—	-1.0	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	92	150	m Ω	$V_{GS} = -4.5V, I_D = -2.0A$
		—	134	200		$V_{GS} = -2.5V, I_D = -1.5A$
		—	180	240		$V_{GS} = -1.8V, I_D = -0.5A$
Forward Transconductance	g_{FS}	—	3.1	—	S	$V_{DS} = -10V, I_D = -810mA$
Diode Forward Voltage (Note 4)	V_{SD}	—	—	-0.9	V	$V_{GS} = 0V, I_S = -0.5A$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	320	—	pF	$V_{DS} = -16V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	80	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	60	—	pF	
Turn-On Delay Time	$t_{D(on)}$	—	11.51	—	ns	$V_{DS} = -10V, V_{GS} = -4.5V$ $R_G = 6\Omega, R_L = 10\Omega$
Turn-On Rise Time	t_r	—	12.09	—	ns	
Turn-Off Delay Time	$t_{D(off)}$	—	55.34	—	ns	
Turn-Off Fall Time	t_f	—	27.54	—	ns	

Notes: 4. Short duration pulse test used to minimize self-heating effect.

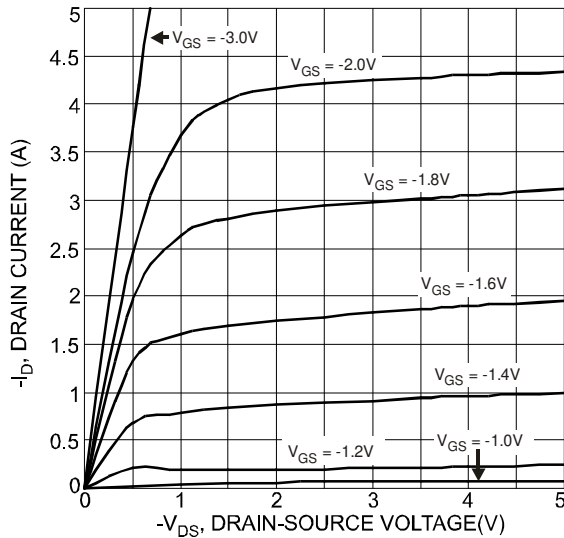


Fig. 1 Typical Output Characteristics

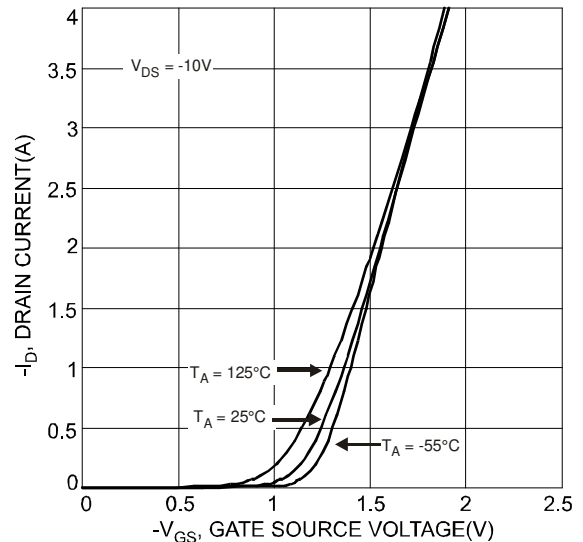


Fig. 2 Typical Transfer Characteristics

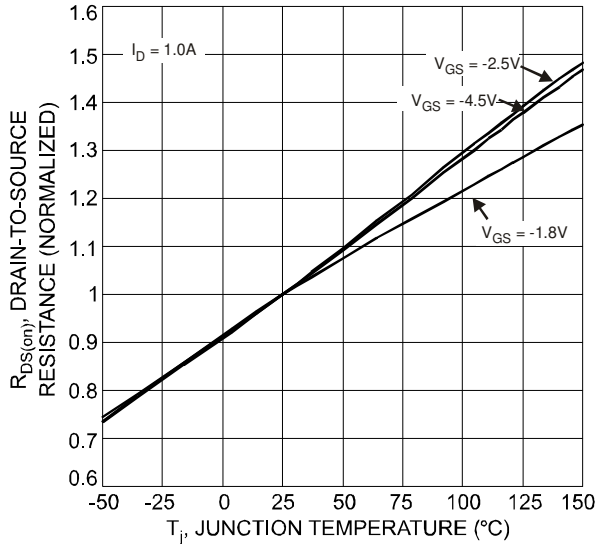


Fig. 3 On-Resistance Variation with Temperature

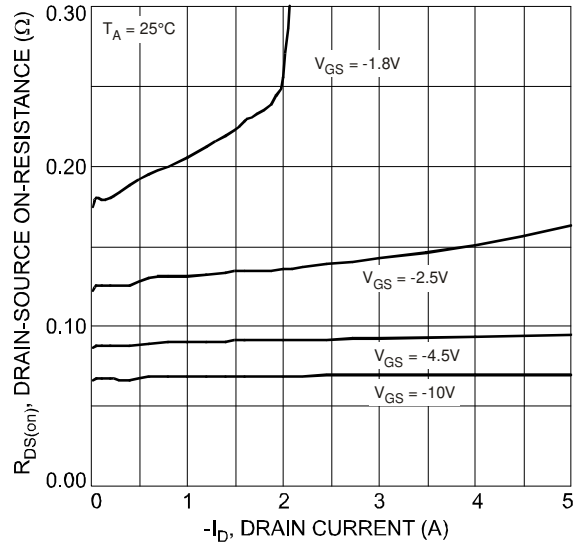


Fig. 4 On-Resistance vs Drain Current and Gate Voltage

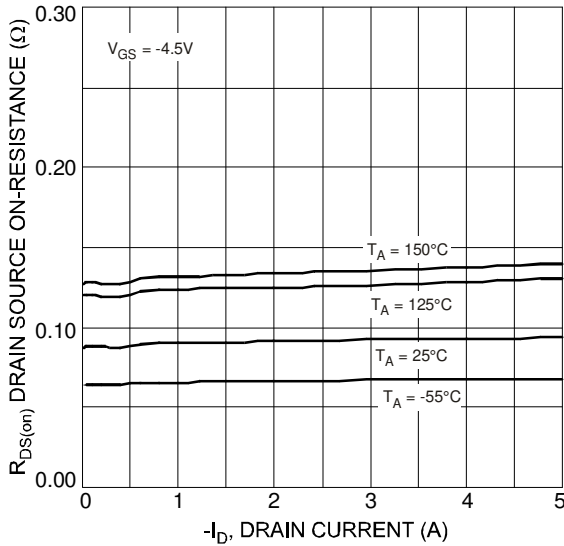


Fig. 5 Drain-Source On-Resistance Vs. Drain Current and Temperature

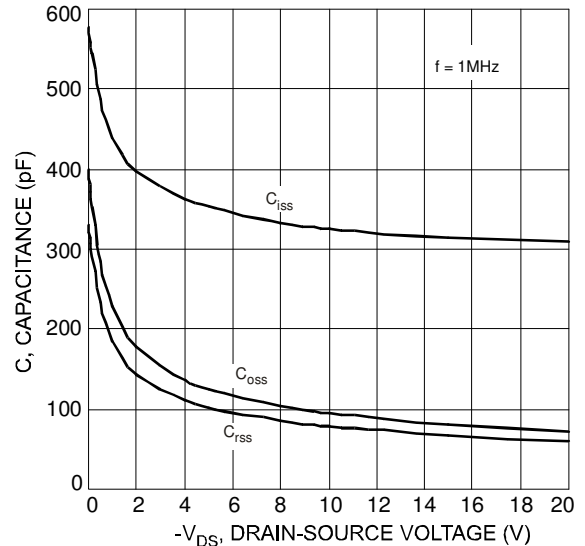


Fig. 6: Typical Capacitance

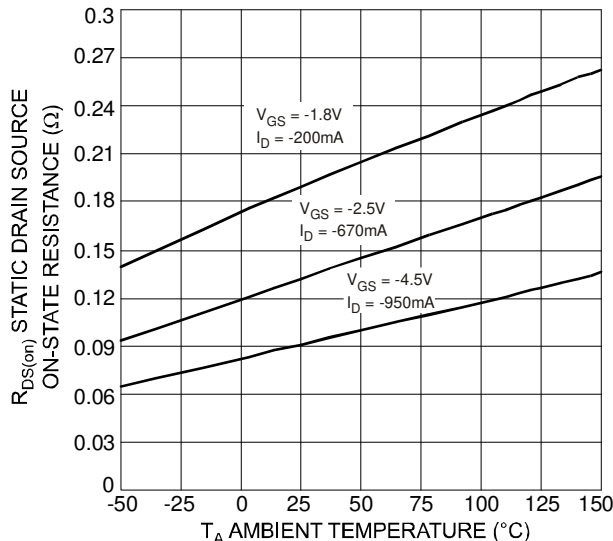


Fig. 7 Static Drain-Source On-State Resistance vs Ambient Temperature

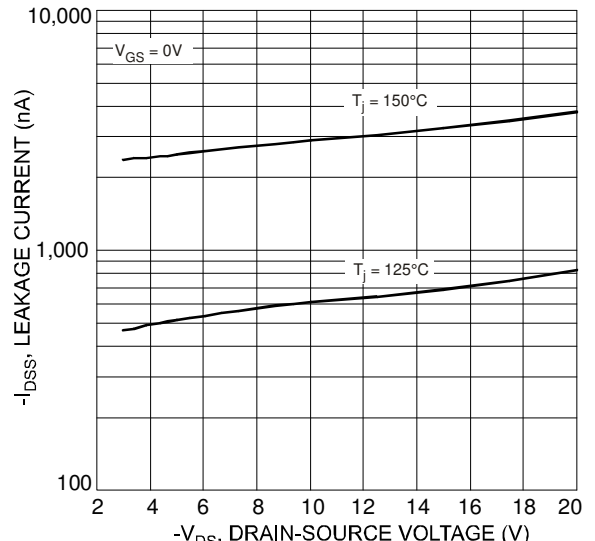


Fig. 8 Drain-Source Leakage Current vs Voltage

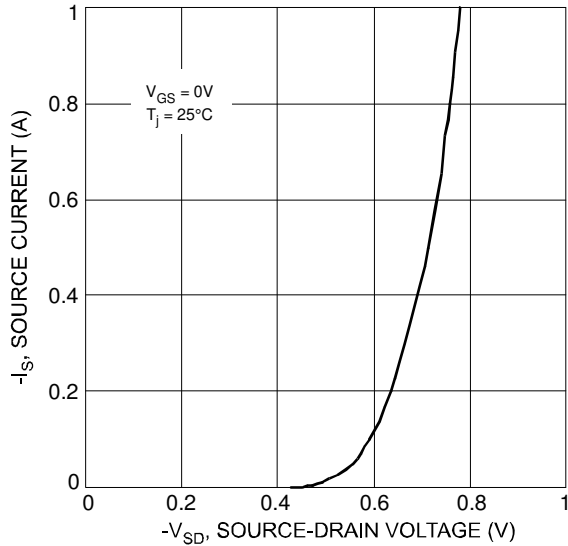


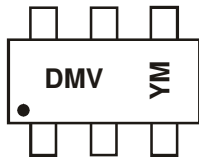
Fig. 9 Diode Forward Voltage vs. Current

Ordering Information (Note 5)

Part Number	Case	Packaging
DMP2240UDM-7	SOT-26	3000/Tape & Reel

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

Marking Information



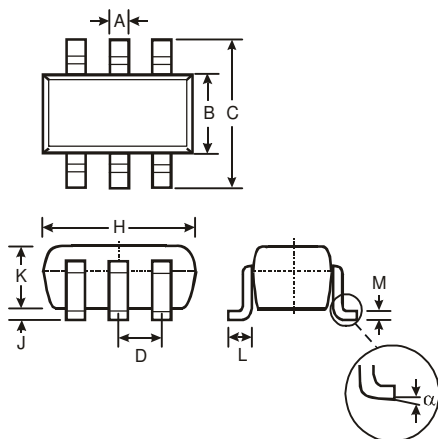
DMV = Marking Code
 YM = Date Code Marking
 Y = Year (ex: U = 2007)
 M = Month (ex: 9 = September)

Date Code Key

Year	2007	2008	2009	2010	2011	2012
Code	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

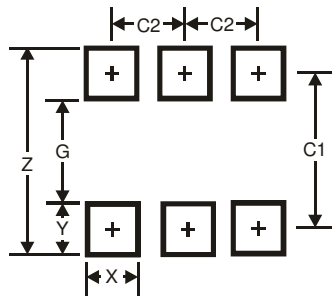
Package Outline Dimensions



SOT-26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—

All Dimensions in mm

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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