Features

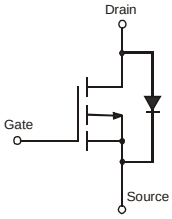
- Low $R_{DS(ON)}$:
  - 40 mΩ @V_{GS} = -4.5V
  - 70 mΩ @V_{GS} = -2.5V
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **"Green" Device (Note 4)**

Mechanical Data

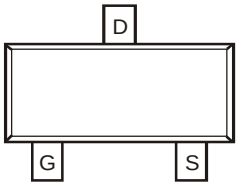
- Case: SC-59
- Case Material – Molded Plastic. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking Information: See Page 4
- Ordering Information: See page 4
- Weight: 0.014 grams (approximate)

SC-59

TOP VIEW



Internal Schematic



Pin Configuration

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current (Note 1) Continuous	T_A = 25°C T_A = 70°C	I_D	-4.6 -3.7	A
Pulsed Drain Current (Note 2)		I_{DM}	-18	A
Body-Diode Continuous Current (Note 1)		I_S	2.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P_D	1.25	W
Thermal Resistance, Junction to Ambient (Note 1); Steady-State	$R_{\theta JA}$	100	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:
1. Device mounted on 1"x1", FR-4 PC board with 2 oz. Copper and test pulse width t ≤10s.
2. Repetitive Rating, pulse width limited by junction temperature.
3. No purposefully added lead.
4. 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°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	—	—	V	I_D = -250μA, V_{GS} = 0V
Zero Gate Voltage Drain Current T_J = 25°C	I_{DSS}	—	—	-1	μA	V_{DS} = -20V, V_{GS} = 0V
Gate-Body Leakage Current	I_{GSS}	—	—	±100	nA	V_{DS} = 0V, V_{GS} = ±12V
Gate Threshold Voltage	$V_{GS(th)}$	-0.6	-0.96	-1.2	V	V_{DS} = V_{GS}, I_D = -250μA
On State Drain Current (Note 5)	$I_{D(ON)}$	-15	—	—	A	V_{GS} = -4.5V, V_{DS} = -5V
Static Drain-Source On-Resistance (Note 5)	$R_{DS(ON)}$	—	29 55	40 70	mΩ	V_{GS} = -4.5V, I_D = -4.6A V_{GS} = -2.5V, I_D = -3.8A
Forward Transconductance (Note 5)	g_{FS}	—	9	—	S	V_{DS} = -10V, I_D = -4.5A
Diode Forward Voltage (Note 5)	V_{SD}	-0.5	-0.72	-1.4	V	I_S = -2.1A, V_{GS} = 0V
Maximum Body-Diode Continuous Current (Note 1)	I_S	—	—	1.7	A	—
DYNAMIC PARAMETERS (Note 6)						
Input Capacitance	C_{iss}	—	820	—	pF	V_{DS} = -15V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	200	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	160	—	pF	
Gate Resistance	R_G	—	2.5	—	Ω	V_{DS} = 0V, V_{GS} = 0V f = 1.0MHz
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q_G	—	10.1	—	nC	V_{DS} = -10V, V_{GS} = -4.5V, I_D = -4.5A
Gate-Source Charge	Q_{GS}	—	1.5	—		
Gate-Drain Charge	Q_{GD}	—	4.3	—		
Turn-On Delay Time	$t_{d(on)}$	—	4.4	—	ns	V_{DS} = -10V, V_{GS} = -4.5V, I_D = -1A, R_G = 6.0Ω
Rise Time	t_r	—	9.9	—		
Turn-Off Delay Time	$t_{d(off)}$	—	28.0	—		
Fall Time	t_f	—	23.4	—		

Notes: 5. Test pulse width t = 300μs.
6. Guaranteed by design. Not subject to production testing.

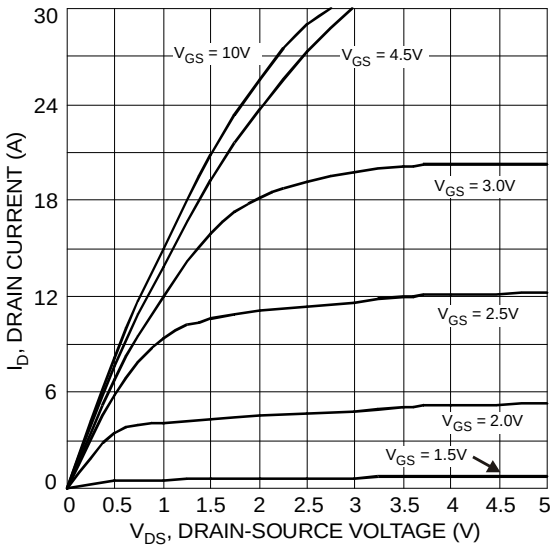


Fig. 1 Typical Output Characteristic

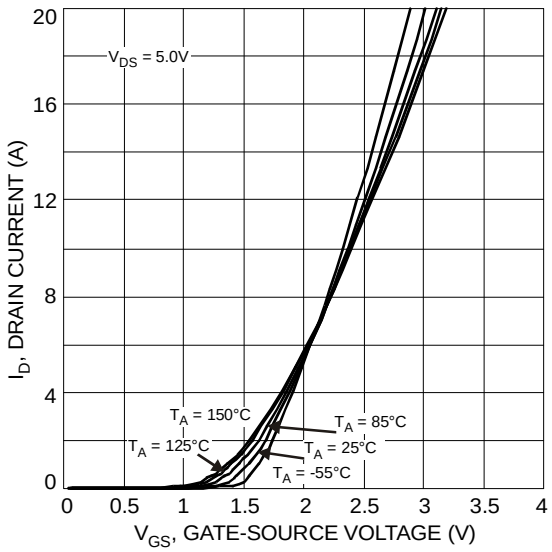


Fig. 2 Typical Transfer Characteristic

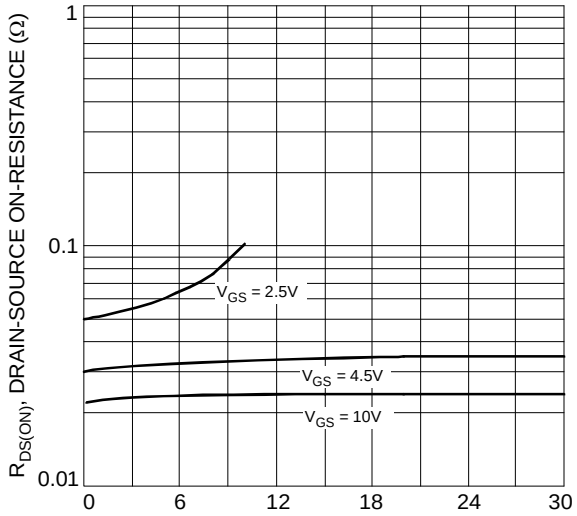


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

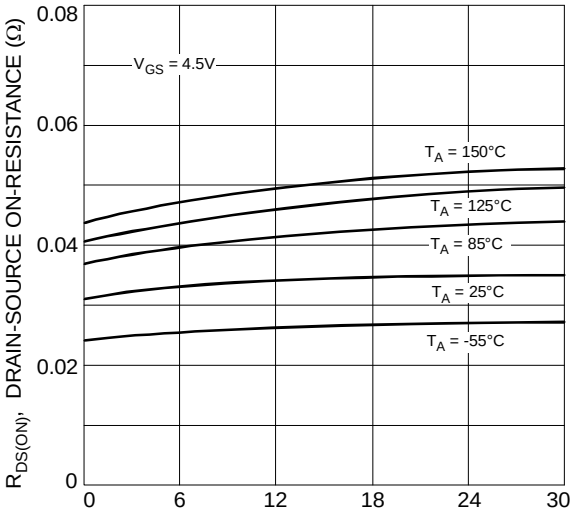


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

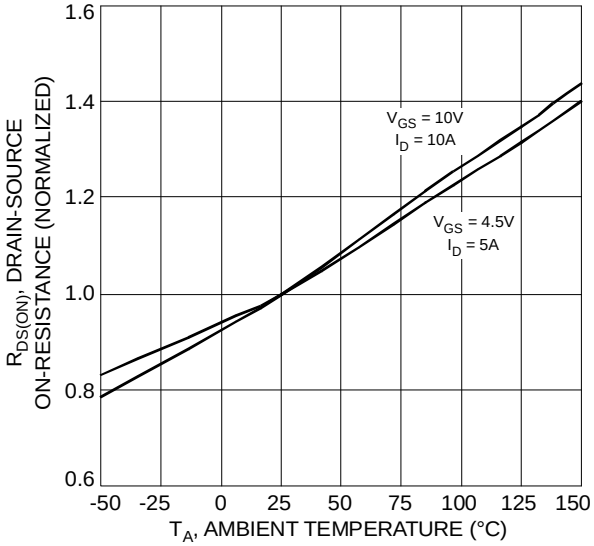


Fig. 5 Normalized On-Resistance vs. Ambient Temperature

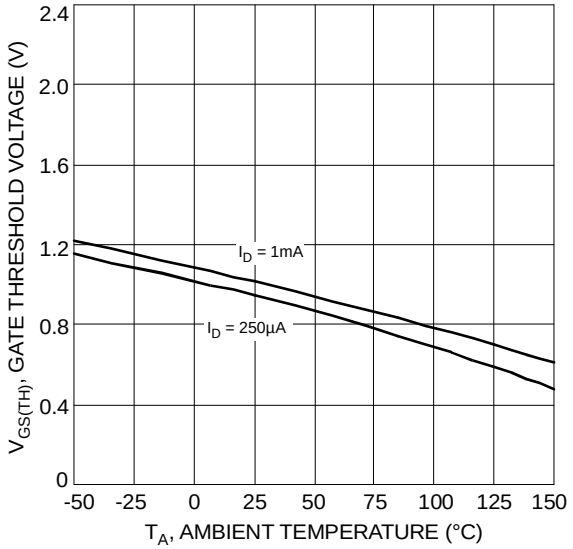


Fig. 6 Gate Threshold Variation vs. Ambient Temperature

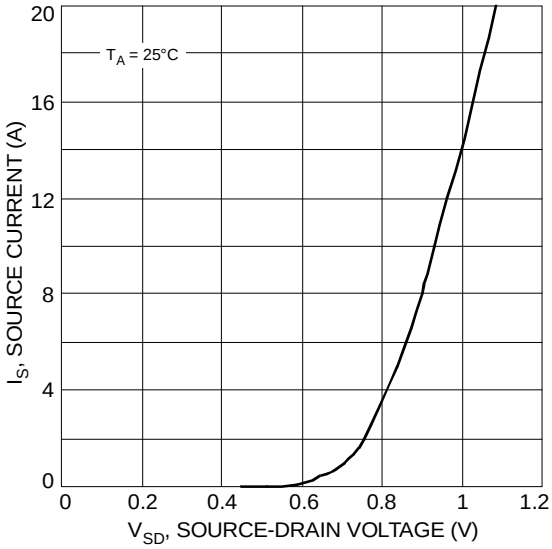


Fig. 7 Diode Forward Voltage vs. Current

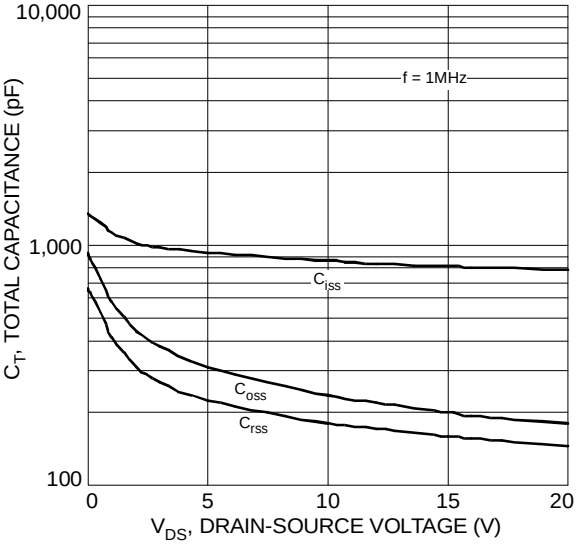


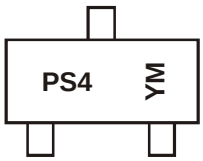
Fig. 8 Typical Total Capacitance

Ordering Information (Note 7)

Part Number	Case	Packaging
DMP2066LSN-7	SC-59	3000/Tape & Reel

Notes: 7. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



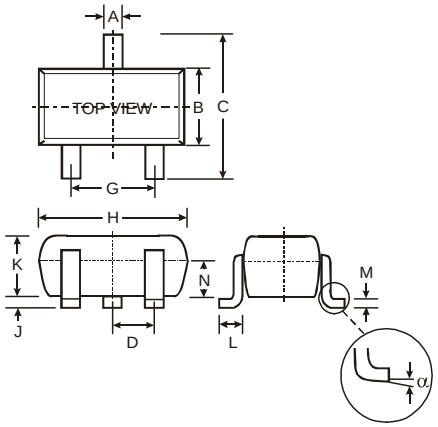
PS4 = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: V = 2008
M = Month ex: 9 = September

Date Code Key

Year	2008	2009	2010	2011	2012	2013	2014	2015
Code	V	W	X	Y	Z	A	B	C

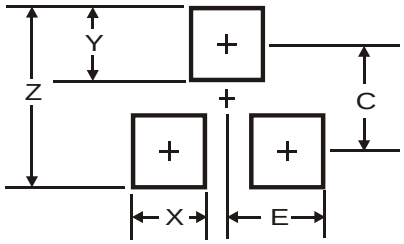
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SC-59		
Dim	Min	Max
A	0.35	0.50
B	1.50	1.70
C	2.70	3.00
D	0.95	
G	1.90	
H	2.90	3.10
J	0.013	0.10
K	1.00	1.30
L	0.35	0.55
M	0.10	0.20
N	0.70	0.80
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.4
X	0.8
Y	1.0
C	2.4
E	1.35

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