





P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

Features

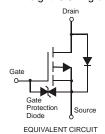
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Lead Free By Design/RoHS Compliant (Note 2)
- ESD Protected Gate
- "Green" Device (Note 4)
- Qualified to AEC-Q101 standards for High Reliability

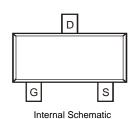
Mechanical Data

- Case: SC59
- 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 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.014 grams (approximate)









Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current (Note 1) Steady State	I _D	-0.7	А
Pulsed Drain Current (Note 3)	I _{DM}	-2.8	А

SC59

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P_d	500	mW
Thermal Resistance, Junction to Ambient	$R_{ hetaJA}$	250	°C/W
Operating and Storage Temperature Range	T_{j},T_{STG}	-65 to +150	°C

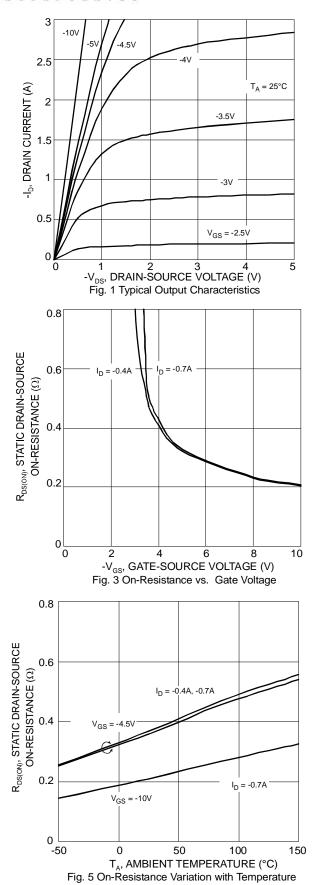
Electrical Characteristics @T_A = 25°C unless otherwise specified

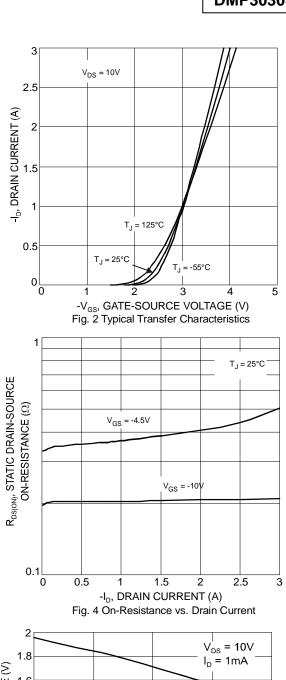
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition			
OFF CHARACTERISTICS (Note 5)									
Drain-Source Breakdown Voltage	BV _{DSS}	-30			V	$V_{GS} = 0V, I_{D} = -250\mu A$			
Zero Gate Voltage Drain Current	I _{DSS}	_	_	-10	μΑ	$V_{DS} = -30V, V_{GS} = 0V$			
Gate-Body Leakage	I _{GSS}	_		±10	μΑ	$V_{GS} = \pm 20V, V_{DS} = 0V$			
ON CHARACTERISTICS (Note 5)									
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	0.25		$V_{GS} = -10V, I_{D} = -0.4A$			
Static Dialif-Source Off-Resistance			0.35	0.45		$V_{GS} = -4.5V, I_{D} = -0.4A$			
Forward Transfer Admittance	Y _{fs}	_	1		S	$V_{DS} = -10V, I_{D} = -0.4A$			
Diode Forward Voltage (Note 5)		_	-0.8	-1.1	V	$V_{GS} = 0V, I_{S} = -0.7A$			
DYNAMIC CHARACTERISTICS									
Input Capacitance	Ciss	_	160		pF				
Output Capacitance	Coss	_	120		pF	$V_{DS} = -10V, V_{GS} = 0V$			
Reverse Transfer Capacitance	C _{rss}	_	50	_	pF				
SWITCHING CHARACTERISTICS									
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:

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







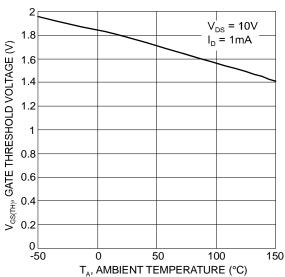
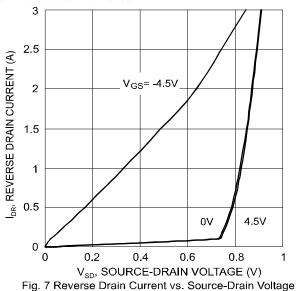


Fig. 6 Gate-Source Threshold Voltage with Temperature





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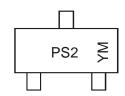
| Coss |

Ordering Information (Note 6)

Part Number	Case	Packaging
DMP3030SN-7	SC59	3000/Tape & Reel

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

Marking Information



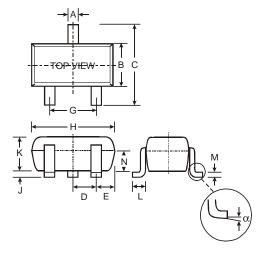
PS2 = Product Type Marking Code YM = Date Code Marking Y = Year ex: T = 2006

M = Month ex: 9 = September

Date Code Key

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Year	200	6	2007		2008	20	09	2010		2011	2	2012
Code	Т		U		V	\	٧	Х		Υ		Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

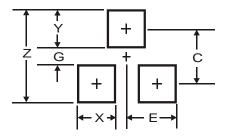
Package Outline Dimensions



SC59						
Dim	Min Max					
Α	0.35	0.50				
В	1.50	1.70				
С	2.70	3.00				
D	0.0	0.95				
Е						
G	1.90					
Н	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	4.0
G	1.2
X	0.9
Υ	1.4
С	2.6
E	0.95

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