



DMN100

N-CHANNEL ENHANCEMENT MODE MOSFET

Features

- Extremely Low On-Resistance: 170mΩ @ V_{GS} = 4.5V
- High Drain Current: 1.1A
- Ideal for Notebook Computer, Portable Phone, PCMCIA Cards, and Battery Powered Circuits
- ESD Protected Gate
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

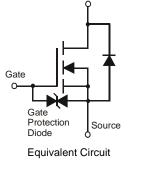
- Case: SC59
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.014 grams (approximate)



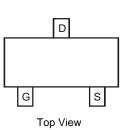


SC59

Top View



Drain



Ordering Information (Note 3)

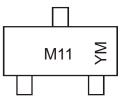
•			
	Part Number	Case	Packaging
	DMN100-7-F	SC59	3000/Tape & Reel

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.

2. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com.

3. For packaging details, go to our website at http://www.diodes.com.

Marking Information



M11 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: T = 2006) M = Month (ex: 9 = September)

Date Code Key

Notes:

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	Т	U	V	W	Х	Y	Z	А	В	С	D	Е
4												
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Maximum Ratings @T_A = 25°C unless otherwise specified

Characteris	stic	Symbol	Value	Units
Drain-Source Voltage		V _{DSS}	30	V
Gate-Source Voltage	Continuous	V _{GSS}	±20	V
Drain Current	Continuous Pulsed	ID	1.1 4.0	A

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

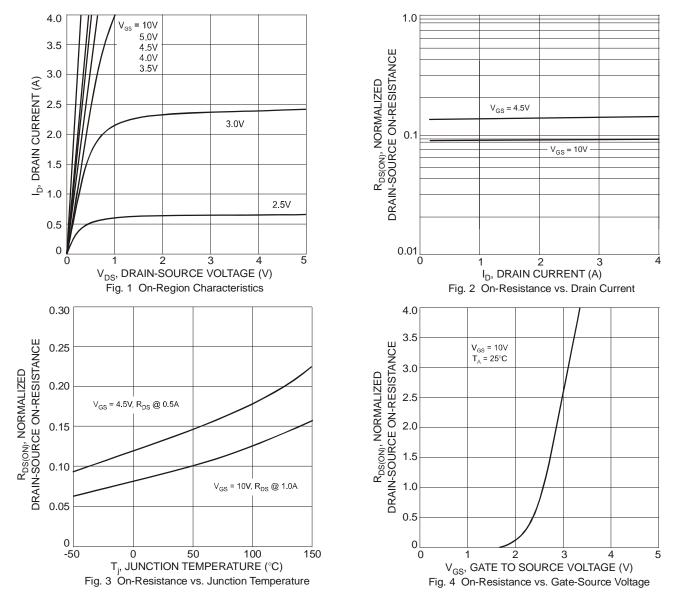
Characteristic	Symbol	Value	Units
Total Power Dissipation	PD	500	mW
Thermal Resistance, Junction to Ambient	R _{0JA}	250	K/W
Operating and Storage Temperature Range	TJ, T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

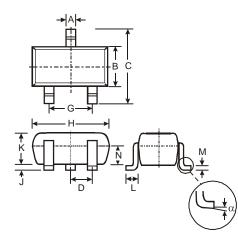
Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition		
OFF CHARACTERISTICS (Note 4)									
Drain-Source Breakdown Voltage		BV _{DSS}	30	_	—	V	$V_{GS} = 0V, I_D = 250 \mu A$		
Zero Gate Voltage Drain Current	@ T _J = 25°C @ T _J = 125°C	I _{DSS}		_	1.0 10	μA	$V_{DS} = 24V, V_{GS} = 0V$		
Gate-Body Leakage		I _{GSS}		_	± 100	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$		
ON CHARACTERISTICS (Note 4)									
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)}	_	_	0.170 0.150	Ω	$V_{GS} = 4.5V, I_D = 0.5A$ $V_{GS} = 10V, I_D = 1.0A$		
Forward Transconductance		g fs	1.3	2.4	—	S	$V_{DS} = 10V, I_D = 0.5A$		
DYNAMIC CHARACTERISTICS							•		
Input Capacitance		Ciss	—	150	—	pF			
Output Capacitance		Coss	_	90	—	pF	$V_{DS} = 10V, V_{GS} = 0V$		
Reverse Transfer Capacitance		Crss	_	30	—	pF	f = 1.0MHz		
Total Gate Charge		Qg	_	5.5	_	nC			
Gate-to-Source Charge		Qgs	_	0.8	_	nC	$V_{DS} = 24V, I_D = 1.0A,$		
Gate-to-Drain Charge		Q _{gd}	_	1.3	_	nC	V _{GS} = 10V		
SWITCHING CHARACTERISTICS									
Turn-On Delay Time		t _{D(ON)}	_	10	_	ns			
Turn-Off Delay Time		t _{D(OFF)}	—	25	—	ns	$V_{DD} = 10V, I_D = 0.5A,$		
Turn-On Rise Time		tr	—	15	—	ns	$V_{GS} = 5.0V, R_{GEN} = 50\Omega$		
Turn-Off Fall Time		t _f	_	45	—	ns			
SOURCE-DRAIN RATINGS (BODY DIODE)									
Continuous Source Current		Is	—	_	0.54	A	—		
Pulse Source Current		I _{SM}	_	_	4.0	А	_		
Forward Voltage		V _{SD}	—	_	1.2	V	$I_F = 1.0A, V_{GS} = 0V$		
Reverse Recovery Time		t _{rr}	_	35	_	ns	I _F = 1.0A, di/dt = 50A/μs		

Notes: 4. Pulse width \leq 300 μ s, duty cycle \leq 2%.





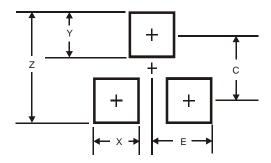
Package Outline Dimensions



SC59							
Dim	Min	Max	Тур				
Α	0.35	0.50	0.38				
В	1.50	1.70	1.60				
С	2.70	3.00	2.80				
D	-	-	0.95				
G	-	-	1.90				
Н	2.90 3.10		3.00				
J	0.013	0.10	0.05				
κ	1.00	1.30	1.10				
L	0.35	0.55	0.40				
М	0.10	0.20	0.15				
Ν	0.70	0.80	0.75				
α	0°	8°	-				
All Dimensions in mm							



Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.4
Х	0.8
Y	1.0
С	2.4
E	1.35

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