





N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

V _{(BR)DSS}	R _{DS(ON) max}	I _D T _A = +25°C
30V	60mΩ @V _{GS} = 10V	4 A
30 V	70mΩ @V _{GS} = 4.5V	3 A

Description

This MOSFET has been designed to minimize the on-state resistance (R_{DS(ON)}) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Applications

- Backlighting
- Power Management Functions
- DC-DC Converters
- Motor Control

Features

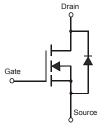
- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 standards for High Reliability

Mechanical Data

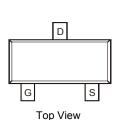
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Terminals Connections: See Diagram Below
- Weight: 0.008 grams (approximate)







Internal Schematic



Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
DMG3418L-7	Standard	SOT23	3000/Tape & Reel
DMG3418L-13	Standard	SOT23	10000/Tape & Reel

Notes:

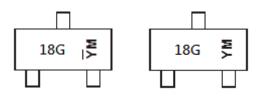
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

Shanghai A/T Site

- 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

Chengdu A/T Site



18G = Product Type Marking Code

YM = Date Code Marking for SAT (Shanghai Assembly/ Test site)

YM = Date Code Marking for CAT (Chengdu Assembly/ Test site)

Y or \overline{Y} = Year (ex: A = 2013)

M = Month (ex: 9 = September)

Date Code Key

Year	2012		2013		2014	201	15	2016		2017	2	2018
Code	Z		Α		В	C		D		E		F
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



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Char	acteristic	Symbol	Value	Unit
Drain Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current (Note 5)	$T_A = +25^{\circ}C$	In.	4.0	Α
	$T_A = +70^{\circ}C$	٠.	3.1	
Drain Current (Note 6)	Pulsed	I_{DM}	15	Α

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5) $T_A = +25$ °C $T_A = +70$ °C	P _D	1.4 0.9	W
Thermal Resistance, Junction to Ambient @T _A = +25°C (Note 5)	$R_{ hetaJA}$	90	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

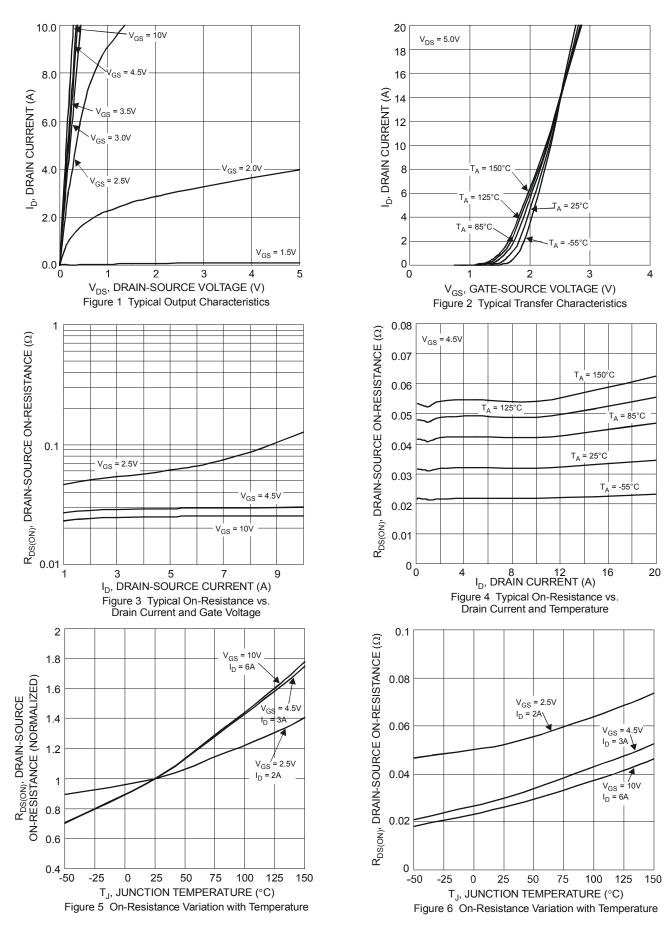
Electrical Characteristics (@T_A = ±25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 7)							
Drain-Source Breakdown Voltage	BV _{DSS}	30	_	_	V	$V_{GS} = 0V, I_D = 250\mu A$	
Zero Gate Voltage Drain Current	I _{DSS}	_	_	1	μA	$V_{DS} = 30V, V_{GS} = 0V$	
Gate-Body Leakage	I _{GSS}	_	_	±100	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage	V _{GS(th)}	0.5	_	1.5	V	$V_{DS} = V_{GS}, I_{D} = 250 \mu A$	
		_	25	60		$V_{GS} = 10V, I_D = 4A$	
Static Drain-Source On-Resistance	R _{DS(ON)}	_	30	70	mΩ	$V_{GS} = 4.5V, I_D = 3A$	
			50	150		$V_{GS} = 2.5V, I_D = 2A$	
Source-Drain Diode Forward Voltage	V_{SD}		_	1.2	V	$V_{GS} = 0V, I_S = 2.0A$	
DYNAMIC CHARACTERISTICS (Note 8)							
Input Capacitance	C _{iss}		464.3	_	pF]	
Output Capacitance	Coss		49.5	_	pF $V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0MHz$		
Reverse Transfer Capacitance	C _{rss}	_	43.8	_	pF	1 - 1.0WH2	
Total Gate Charge	Qg	_	5.5	_			
Gate-Source Charge	Q_{gs}	_	1.1	_	nC	$V_{GS} = 4.5V, V_{DS} = 15V,$ $I_{D} = 4A$	
Gate-Drain Charge	Q _{gd}	_	1.8	_		ID - 4A	
Turn-On Delay Time	t _{D(on)}	_	1.9	_	ns		
Turn-On Rise Time	t _r		1.6		ns	V _{DD} = 15V, V _{GEN} = 10V,	
Turn-Off Delay Time	t _{D(off)}		10.3		ns	$R_{GEN} = 3\Omega$, $R_L = 3.75\Omega$	
Turn-Off Fall Time	t _f		2.0	_	ns		

Notes:

- 5. Device mounted on FR-4 PCB with 2oz. Copper and test pulse width t ≤ 10s.
 6. Repetitive rating, pulse width limited by junction temperature.
 7. Short duration pulse test used to minimize self-heating effect.
 8. Guaranteed by design. Not subject to product testing.







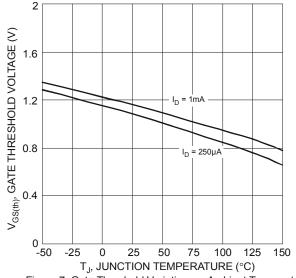
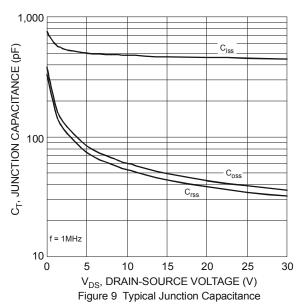


Figure 7 Gate Threshold Variation vs. Ambient Temperature



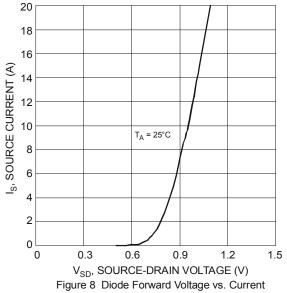
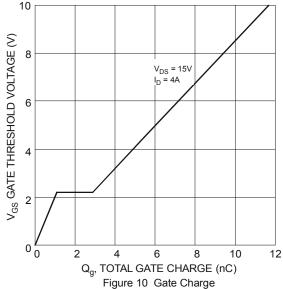
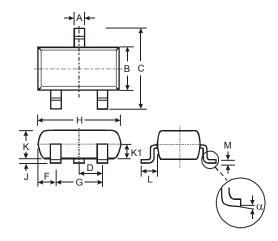


Figure 8 Diode Forward Voltage vs. Current



Package Outline Dimensions

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

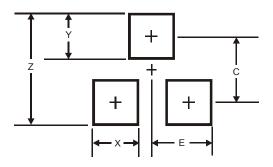


	SOT23						
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	2.30	2.50	2.40				
D	0.89	1.03	0.915				
F	0.45	0.60	0.535				
G	1.78	2.05	1.83				
Н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
K	0.903	1.10	1.00				
K1	-	1	0.400				
L	0.45	0.61	0.55				
M	0.085	0.18	0.11				
α	0°	8°	-				
All	All Dimensions in mm						



Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)		
Z	2.9		
Х	0.8		
Y	0.9		
С	2.0		
E	1.35		

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многоканальный

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