



30V N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

V _{(BR)DSS}	R _{DS(on) max}	I _D T _A = +25°C
30V	23mΩ @ V _{GS} = 10V	6.6A
30 V	$30m\Omega$ @ $V_{GS} = 4.5V$	5.8A

Description

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

Applications

- DC-DC Converters
- · Power management functions
- Backlighting

Features and Benefits

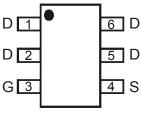
- Low Input Capacitance
- Low On-Resistance
- Fast Switching Speed
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

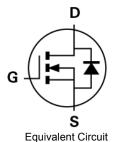
- Case: TSOT26
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.013 grams (approximate)







Top View Pin Configuration



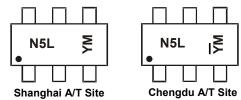
Ordering Information (Note 4)

Part Number	Case	Packaging
DMN3026LVT-7	TSOT26	3,000/Tape & Reel
DMN3026LVT-13	TSOT26	10,000/Tape & Reel

Notes:

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



N5L = Product Type Marking Code YM = Date Code Marking for SAT (Shanghai Assembly/ Test site) \overline{Y} M = Date Code Marking for CAT (Chengdu Assembly/ Test site) Y or \overline{Y} = Year (ex: A = 2013) M = Month (ex: 9 = September)

Date Code Kev

Year	201	0	2011		2012	20	13	2014		2015	2	2016
Code	Х		Υ		Z	/	4	В		С		D
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.)

Characteristic	Symbol	Value	Units			
Drain-Source Voltage	V _{DSS}	30	V			
Gate-Source Voltage	V _{GSS}	±20	V			
Continuous Drain Current (Note 6) \/ = 40\/	Steady State	$T_A = +25^{\circ}C$ $T_A = +70^{\circ}C$	I _D	6.6 5.3	А	
Continuous Drain Current (Note 6) V _{GS} = 10V	I _D	8.5 6.8	А			
Maximum Body Diode Forward Current (Note 6)	I _S	3.0	Α			
Pulsed Drain Current (10μs pulse, duty cycle = 1%)	I _{DM}	35	Α			

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

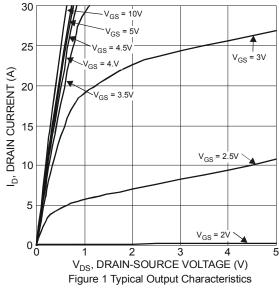
Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)	T _A = +25°C	PD	1.2	W
Total Fower Dissipation (Note 5)	T _A = +70°C	PD	0.8	VV
Thermal Resistance, Junction to Ambient (Note 5)	Steady state	Б	100	°C/W
Thermal Resistance, Junction to Ambient (Note 5)	t<10s	$R_{ heta JA}$	60	°C/W
Total Power Dissipation (Note 6)	T _A = +25°C	D	1.5	W
Total Fower Dissipation (Note 6)	T _A = +70°C	P_{D}	1.0	
Thermal Resistance, Junction to Ambient (Note 6)	Steady state	D	83	°C/W
Thermal Resistance, Junction to Ambient (Note 0)	t<10s	$R_{\theta JA}$	50	°C/W
Thermal Resistance, Junction to Case (Note 6)	$R_{ heta JC}$	14.5	°C/W	
Operating and Storage Temperature Range		T _{J,} T _{STG}	-55 to +150	°C

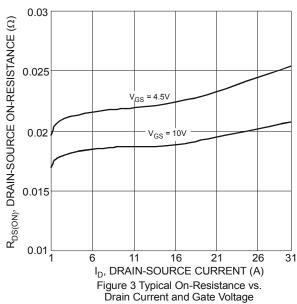
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

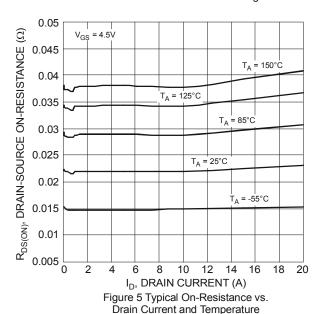
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	_	_	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I _{DSS}	_	_	1.0	μΑ	V _{DS} = 30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}		_	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	1.0	1.5	2.0	V	$V_{DS} = V_{GS}, I_{D} = 250 \mu A$
Static Drain-Source On-Resistance	D	_	19	23	mΩ	$V_{GS} = 10V, I_D = 6.5A$
Static Dialii-Source Oil-Resistance	R _{DS(ON)}	_	22	30	11122	$V_{GS} = 4.5V, I_D = 6.0A$
Diode Forward Voltage	V_{SD}	_	0.7	1.2	V	V _{GS} = 0V, I _S = 1.0A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}		643	_		V _{DS} = 15V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	Coss		65	_	pF	
Reverse Transfer Capacitance	C _{rss}	_	49	_		
Gate Resistance	R_G	_	2.5	_	Ω	$V_{DS} = 0V, V_{GS} = 0V, f = 1.0MHz$
Total Gate Charge (V _{GS} = 4.5V)	Q_g	_	5.7	_		
Total Gate Charge (V _{GS} = 10V)	Qg	_	12.5	_	nC	V _{DS} = 15V. I _D = 4.0A
Gate-Source Charge	Q _{gs}	_	1.7	_	IIC	VDS = 15V, ID = 4.0A
Gate-Drain Charge	Q_{gd}	_	1.8	_		
Turn-On Delay Time	t _{D(on)}	_	2.2	_		
Turn-On Rise Time	tr	_	2.5	_	nS	$V_{GS} = 10V, V_{DD} = 15V, R_G = 6.0\Omega,$
Turn-Off Delay Time	t _{D(off)}	_	12.1	_	113	I _D = 6.5A
Turn-Off Fall Time	t _f	_	3.0	_		
Body Diode Reverse Recovery Time	t _{rr}	_	6.5	_	nS	I _F = 6.5A, dI/dt = 100A/μs
Body Diode Reverse Recovery Charge	Q _{rr}		1.7	_	nC	I _F = 6.5A, dI/dt = 100A/μs

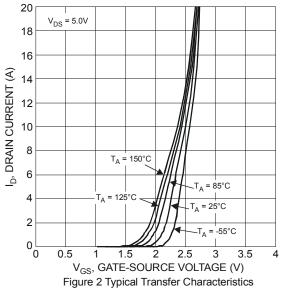
 Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
 Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
 Short duration pulse test used to minimize self-heating effect.
 Guaranteed by design. Not subject to product testing. Notes:

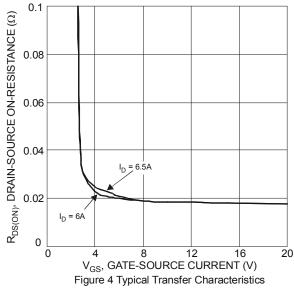












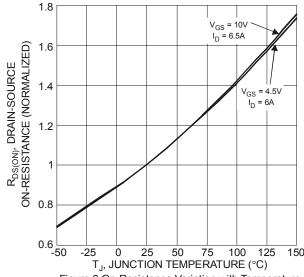
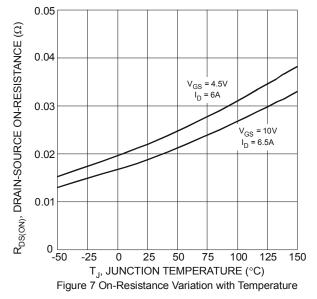
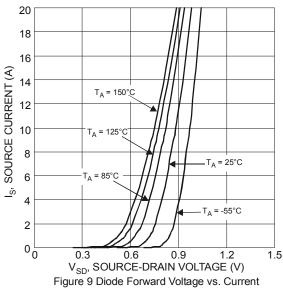
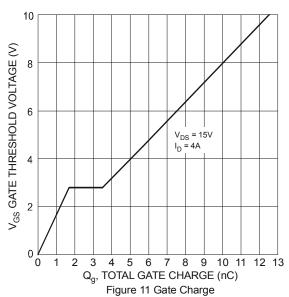


Figure 6 On-Resistance Variation with Temperature









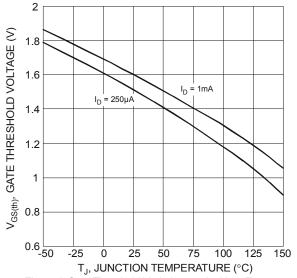
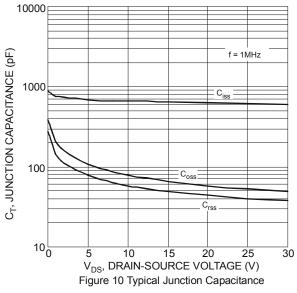
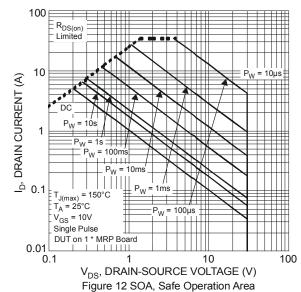
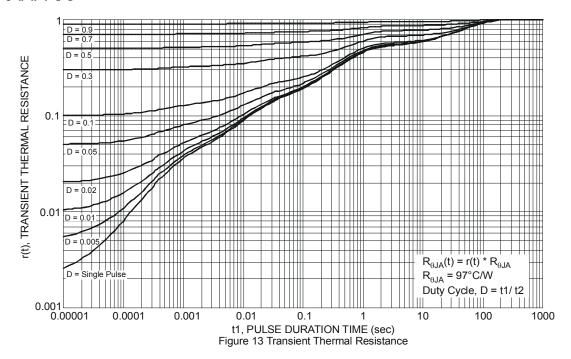


Figure 8 Gate Threshold Variation vs. Ambient Temperature



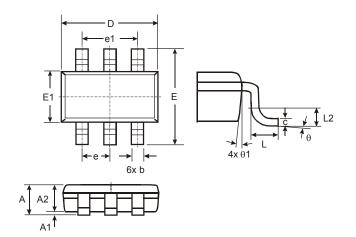






Package Outline Dimensions

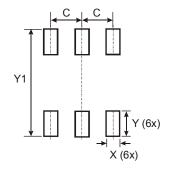
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



TSOT26							
Dim	Min	Max	Тур				
A		1.00	_				
A1	0.01	0.10	_				
A2	0.84	0.90	_				
D	-	-	2.90				
Е			2.80				
E1	_	_	1.60				
b	0.30	0.45	_				
С	0.12	0.20	_				
е	_	_	0.95				
e1			1.90				
١	0.30	0.50	_				
L2			0.25				
θ	0°	8°	4°				
θ1	4°	12°	_				
All D	All Dimensions in mm						

Suggested Pad Layout

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



Dimensions	Value (in mm)			
С	0.950			
Х	0.700			
Y	1.000			
Y1	3.199			



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Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru 4 moschip.ru 9