





N-CHANNEL ENHANCEMENT MODE MOSFET

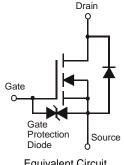
Features

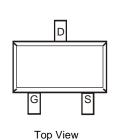
- Low On-Resistance
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- ESD Protected Gate to 2kV
- Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.002 grams (approximate)







Equivalent Circuit

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
DMN55D0UT -7	Commercial	SOT523	3000/Tape & Reel
DMN55D0UTQ -7	Automotive	SOT523	3000/Tape & Reel

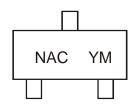
Notes:

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

Top View

- 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 + CI) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com.

Marking Information



NAC = Product Type Marking Code YM = Date Code Marking Y = Year (ex: U = 2007)M = Month (ex: 9 = September)

Date Code Key

Year	2007	2008	2009	2010	201	1 20)12	2013	2014		2015	2016	2017
Code	U	V	W	Х	Y		Z	Α	В		С	D	Е
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	g §	Бер	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}	50	V
Gate-Source Voltage	V _{GSS}	±12	V
Drain Current (Note 5) Continuous	I _D	160	mA
Pulsed Drain Current (Note 5)	I _{DM}	560	mA

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P _D	200	mW
Thermal Resistance, Junction to Ambient	$R_{ heta JA}$	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

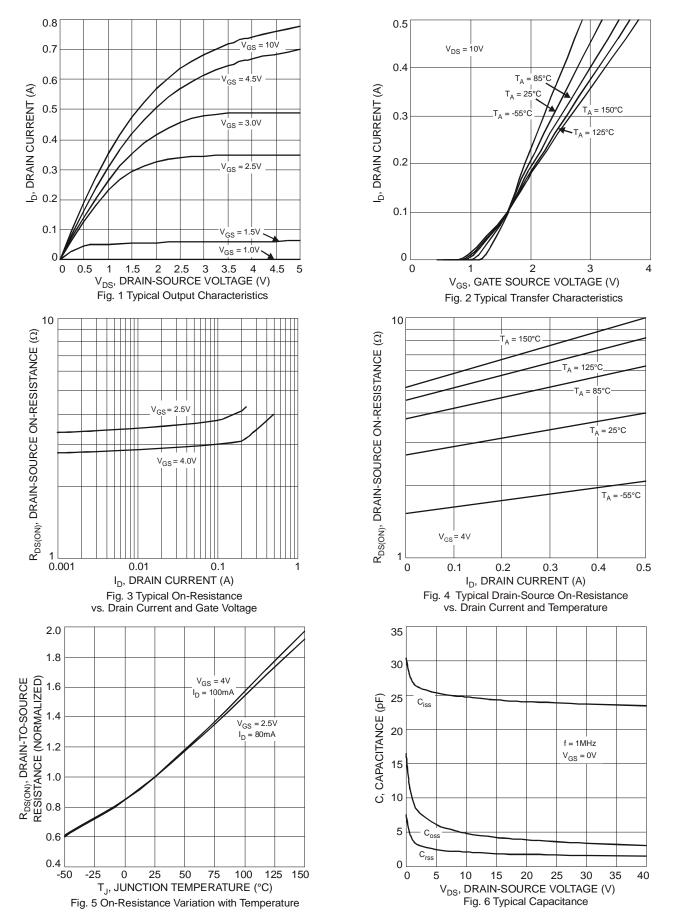
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Drain-Source Breakdown Voltage	BV _{DSS}	50			V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I _{DSS}			1	μА	$V_{DS} = 50V, V_{GS} = 0V$
Gate-Body Leakage	loss			1.0 5.0	I IIA	$V_{GS} = \pm 8V$, $V_{DS} = 0V$
Gale-Body Leakage	IGSS					$V_{GS} = \pm 12V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	V _{GS(th)}	0.7	0.8	1.0	V	$V_{DS} = V_{GS}$, $I_D = 250\mu A$
Static Drain-Source On-Resistance	D		3.1	4	()	$V_{GS} = 4V$, $I_D = 100mA$
Static Dialif-Source Off-Resistance	R _{DS (ON)}		4	5		$V_{GS} = 2.5V, I_D = 80mA$
Forward Transconductance	g _{FS}	180	_	_	mS	$V_{DS} = 10V$, $I_D = 100mA$, $f = 1.0KHz$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}		25		рF	
Output Capacitance	Coss	I	5		pF	$V_{DS} = 10V, V_{GS} = 0V, f = 1.0MHz$
Reverse Transfer Capacitance	Crss		2.1	_	pF	

Notes:

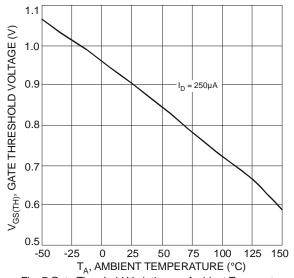
^{5.} Device mounted on FR-4 PCB, pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com.

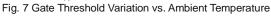
^{6.} Short duration pulse test used to minimize self-heating effect.

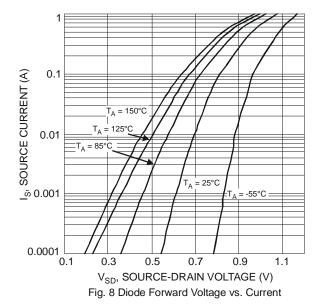












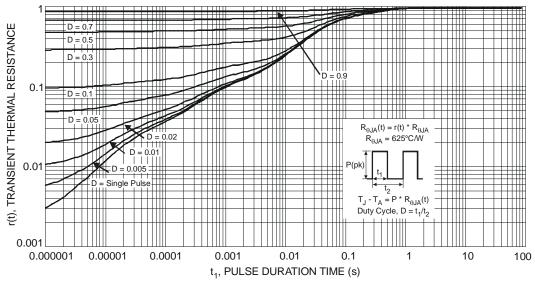
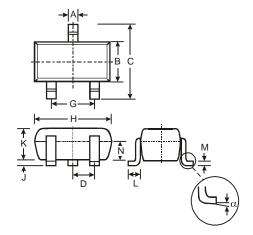


Fig. 9 Transient Thermal Response

Package Outline Dimensions

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



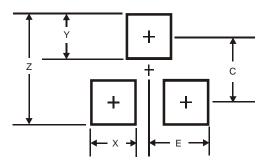
SOT523							
Dim	Min	Max	Тур				
Α	0.15	0.30	0.22				
В	0.75	0.85	0.80				
C	1.45	1.75	1.60				
D	_	_	0.50				
G	0.90	1.10	1.00				
Η	1.50	1.70	1.60				
J	0.00	0.10	0.05				
K	0.60	0.80	0.75				
L	0.10	0.30	0.22				
М	0.10	0.20	0.12				
N	0.45	0.65	0.50				
α	0°	8°	_				
All Dimensions in mm							

COTEGG



Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	1.8
Х	0.4
Υ	0.51
С	1.3
E	0.7

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многоканальный

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