

Product Summary

BV _{DSS}	R _{DS(on)} Max	I _D T _A = +25°C
60V	6Ω @ V _{GS} = 5V	90mA
	5Ω @ V _{GS} = 10V	115mA

Features and Benefits

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- ESD Protected Gate, 1KV (HBM)
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([DMN66D0LDWQ](#))**

Description and Applications

This new generation 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.

- Load Switches

Mechanical Data

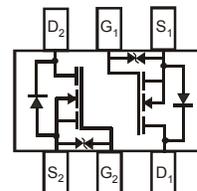
- Case: SOT363 (Standard)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (e3)
- Terminal Connections: See Diagram
- Weight: 0.006 grams (approximate)



SOT363 (Standard)



Top View



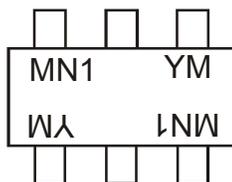
Top View
Internal Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
DMN66D0LDW-7	SOT363 (Standard)	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



MN1= Product Type Marking Code
 YM = Date Code Marking
 Y or \bar{Y} = Year (ex: 1 = 2021)
 M or \bar{M} = Month (ex: 9 = September)

Date Code Key

Year	2007	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	U	I	J	K	L	M	N	O	P	R	S

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage (Note 5)	V_{GSS}	± 20	V
Drain Current (Note 5)	I_D	Continuous	115
		Continuous @ $+100^\circ\text{C}$	73
		Pulsed	800

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Units
Total Power Dissipation	P_D	250	mW
Derating above $T_A = +25^\circ\text{C}$ (Note 5)		1.6	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 6)							
Drain-Source Breakdown Voltage	BV_{DSS}	60	70	—	V	$V_{GS} = 0V, I_D = 10\mu\text{A}$	
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0 500	μA	@ $T_C = +25^\circ\text{C}$ @ $T_C = +125^\circ\text{C}$ $V_{DS} = 60V, V_{GS} = 0V$	
Gate-Body Leakage	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 20V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 6)							
Gate Threshold Voltage	$V_{GS(th)}$	1.2	—	2.0	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	
Static Drain-Source On-Resistance	$R_{DS(on)}$	@ $T_J = +25^\circ\text{C}$	—	3.5	6	Ω	$V_{GS} = 5V, I_D = 0.115A$
		@ $T_J = +125^\circ\text{C}$	—	3.0	5		$V_{GS} = 10V, I_D = 0.115A$
Forward Transconductance	g_{FS}	80	—	—	mS	$V_{DS} = 10V, I_D = 0.115A$	
Diode Forward Voltage	V_{SD}	—	0.8	1.2	V	$V_{GS} = 0V, I_S = 115mA$	
DYNAMIC CHARACTERISTICS (Note 7)							
Input Capacitance	C_{iss}	—	23	—	pF	$V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz$	
Output Capacitance	C_{oss}	—	3.4	—	pF		
Reverse Transfer Capacitance	C_{rss}	—	1.4	—	pF		
Turn-On Delay Time	$t_{D(on)}$	—	10	—	ns	$V_{DD} = 30V, I_D = 0.115A, R_L = 150\Omega,$ $V_{GEN} = 10V, R_{GEN} = 25\Omega$	
Turn-Off Delay Time	$t_{D(off)}$	—	33	—	ns		

Notes: 5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on www.diodes.com/package-outlines.html
 6. Short duration pulse test used to minimize self-heating effect.
 7. Guaranteed by design. Not subject to product testing.

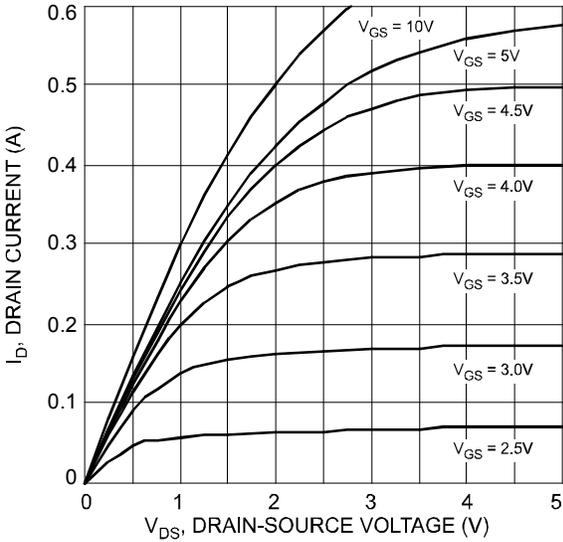


Fig. 1 Typical Output Characteristic

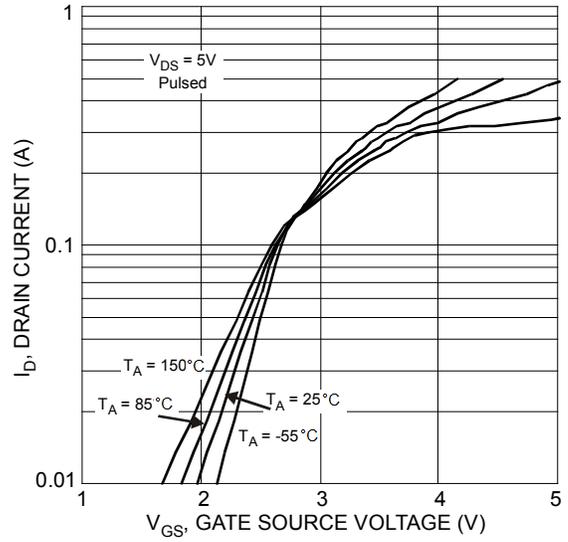


Fig. 2 Typical Transfer Characteristics

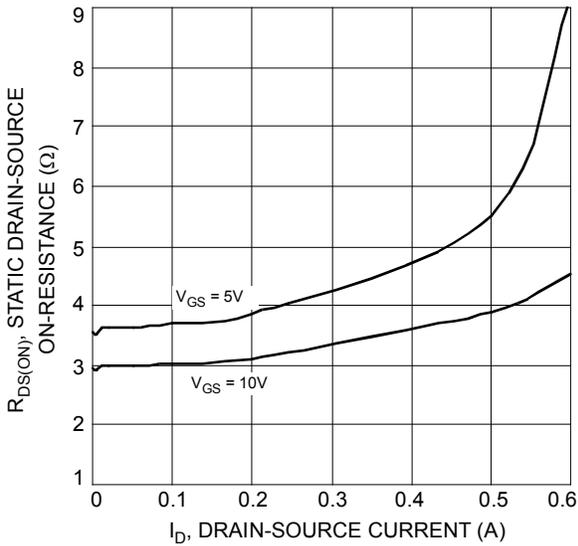


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

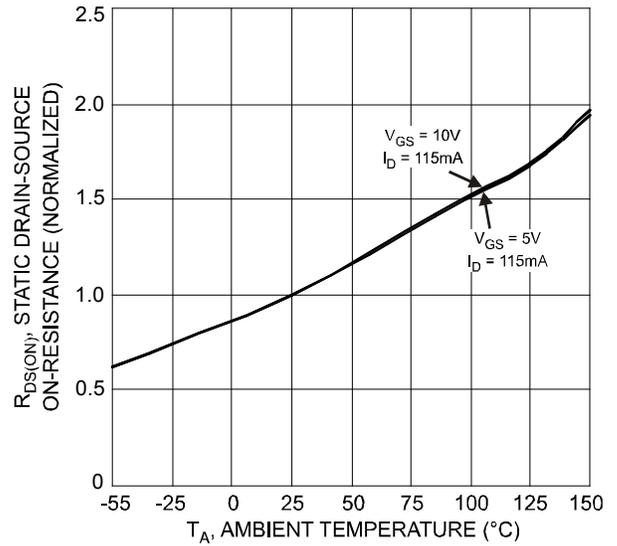


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

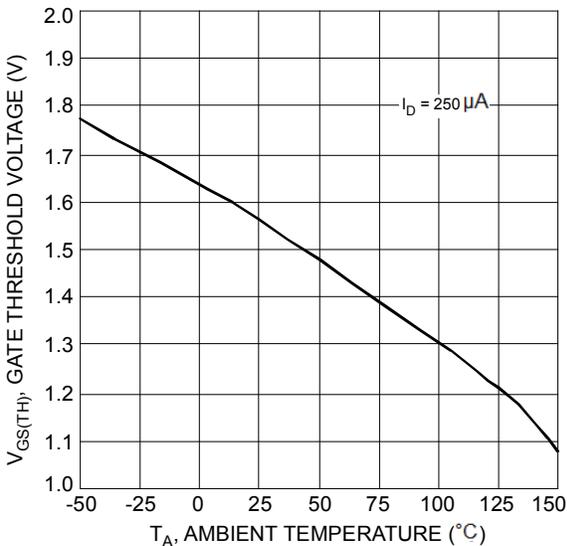


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

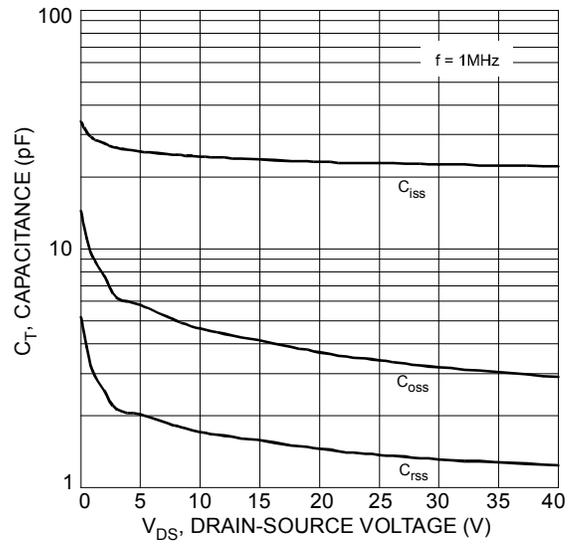


Fig. 6 Typical Total Capacitance

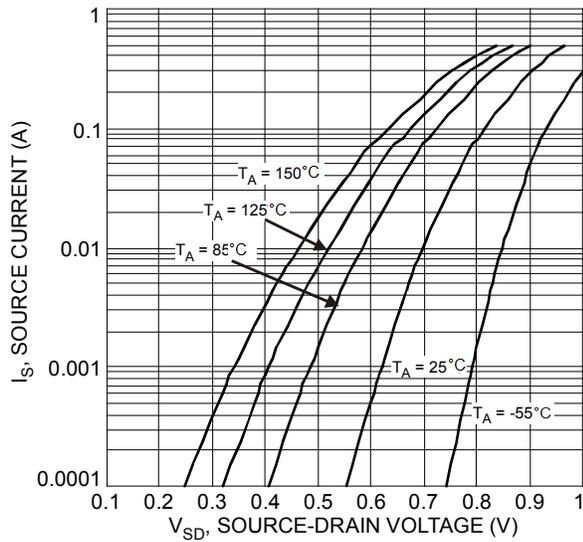
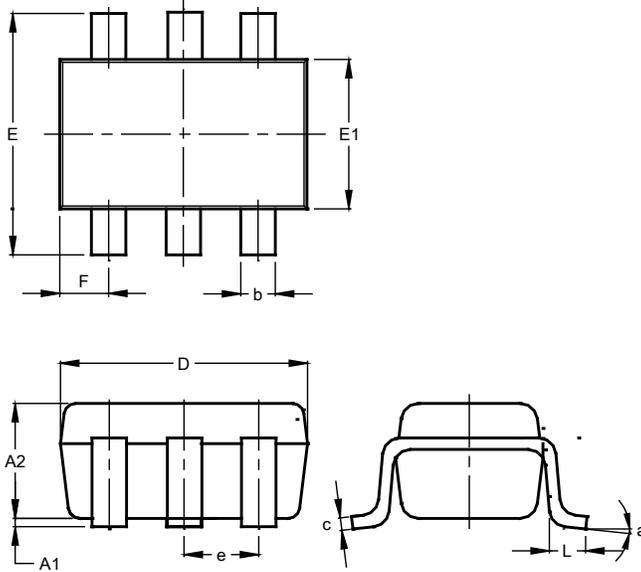


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT363 (Standard)

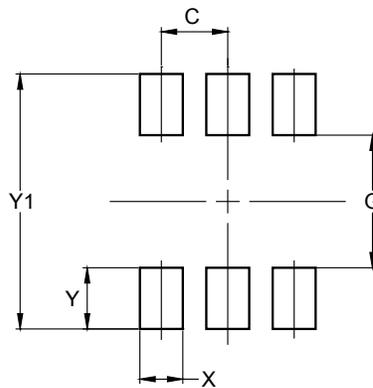


SOT363 (Standard)			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.80	1.00	0.90
b	0.10	0.35	0.225
c	0.08	0.22	0.15
D	1.80	2.20	2.00
E	2.00	2.45	2.225
E1	1.15	1.35	1.25
e	--	--	0.65
F	0.25	0.45	0.35
L	0.25	0.46	0.355
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT363 (Standard)



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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