

## Features

- Dual N-Channel MOSFET
- Low On-Resistance
  - 100mΩ @V<sub>GS</sub> = 4.5V, I<sub>D</sub> = 2.0A
  - 140mΩ @V<sub>GS</sub> = 2.5V, I<sub>D</sub> = 1.5A
  - 215mΩ @V<sub>GS</sub> = 1.8V, I<sub>D</sub> = 0.1A
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- ESD Protected Gate to 2kV HBM
- **Totally Lead-Free & Fully 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-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative.**

<https://www.diodes.com/quality/product-definitions/>

## Mechanical Data

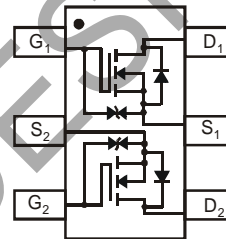
- Package: SOT26
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 Ⓜ
- Weight: 0.015 grams (Approximate)



SOT26



Top View



Top View  
Schematic and Pin Configuration

## Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DMN2215UDM-7	SOT26	3000	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



22N = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: K = 2023)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2010	...	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	X	...	K	L	M	N	O	P	R	S	T	U

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	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current (Note 5)	$I_D$	$T_A = +25^\circ\text{C}$	2.0
		$T_A = +85^\circ\text{C}$	1.4
Pulsed Drain Current (Note 6)	$I_{DM}$	7.0	A

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

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	$P_D$	650	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	192	$^\circ\text{C/W}$
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
<b>OFF CHARACTERISTICS (Note 7)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	20	—	—	V	$V_{GS} = 0V, I_D = 10\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	1	$\mu\text{A}$	$V_{DS} = 20V, V_{GS} = 0V$
Gate-Source Leakage	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 12V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	0.6	—	1.0	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	80	100	m $\Omega$	$V_{GS} = 4.5V, I_D = 2.5A$
		—	105	140		$V_{GS} = 2.5V, I_D = 1.5A$
		—	165	215		$V_{GS} = 1.8V, I_D = 0.1A$
Forward Transfer Admittance	$ Y_{fs} $	—	5	—	S	$V_{DS} = 5V, I_D = 2.4A$
Diode Forward Voltage (Note 7)	$V_{SD}$	—	0.73	1.1	V	$V_{GS} = 0V, I_S = 1.05A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	188	—	pF	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	44	—	pF	
Reverse Transfer Capacitance	$C_{riss}$	—	30	—	pF	
Total Gate Charge	$Q_g$	—	2.4	—	nC	$V_{GS} = 4.5V, V_{DS} = 10V,$ $I_D = 2.5A$
Gate-Source Charge	$Q_{gs}$	—	0.4	—	nC	
Gate-Drain Charge	$Q_{gd}$	—	0.8	—	nC	
Turn-On Delay Time	$t_{D(ON)}$	—	8	—	ns	$V_{DD} = 10V, R_L = 10\Omega$ $I_D = 1A, V_{GEN} = 4.5V, R_G = 6\Omega$
Rise Time	$t_R$	—	3.8	—		
Turn-Off Delay Time	$t_{D(OFF)}$	—	19.6	—		
Fall Time	$t_F$	—	8.3	—		

- Notes:
- Device mounted on FR-4 PCB, or minimum recommended pad layout.
  - Pulse width  $\leq 10\mu\text{s}$ , duty cycle  $\leq 1\%$ .
  - Short duration pulse test used to minimize self-heating effect.

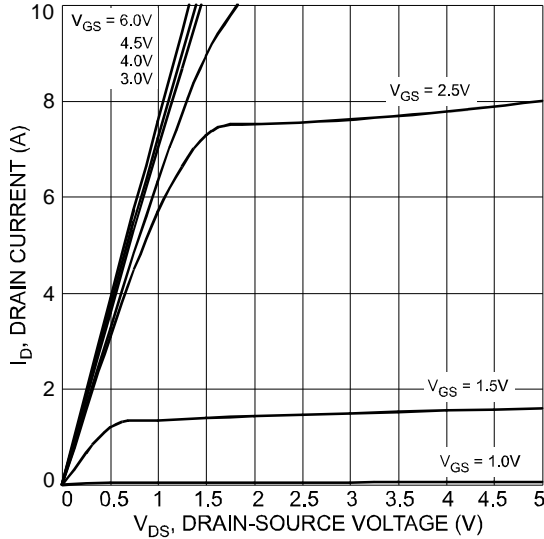


Fig. 1 Typical Output Characteristic

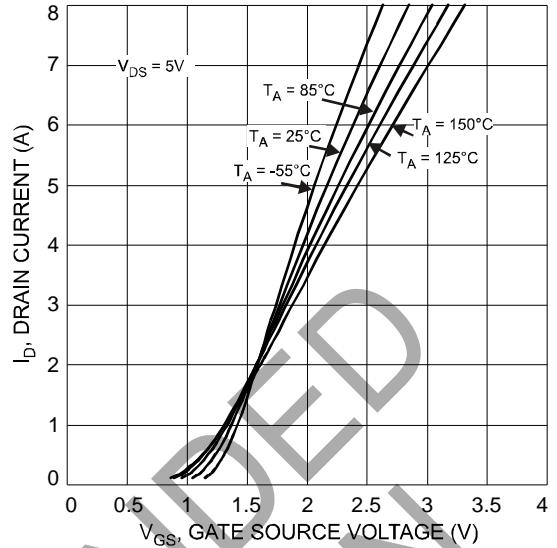


Fig. 2 Typical Transfer Characteristics

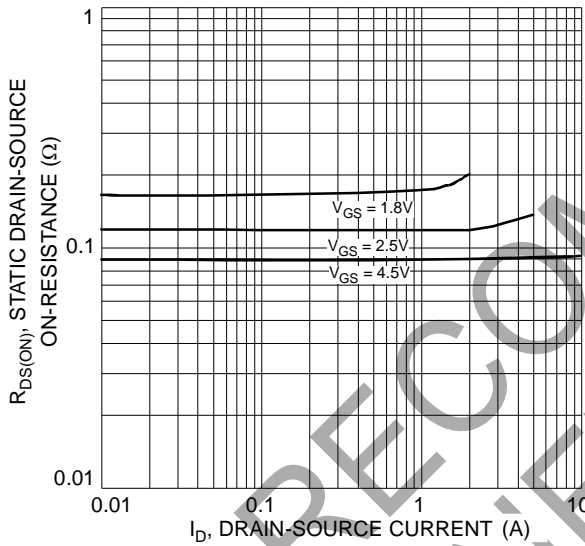


Fig. 3 On-Resistance vs. Drain-Source Current & Gate Voltage

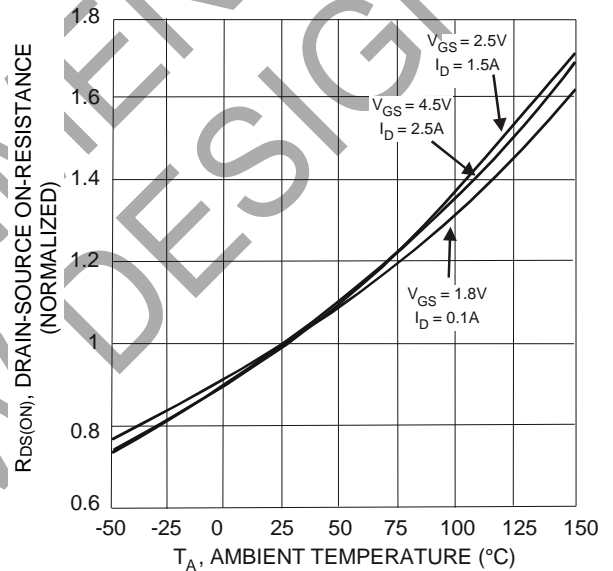


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

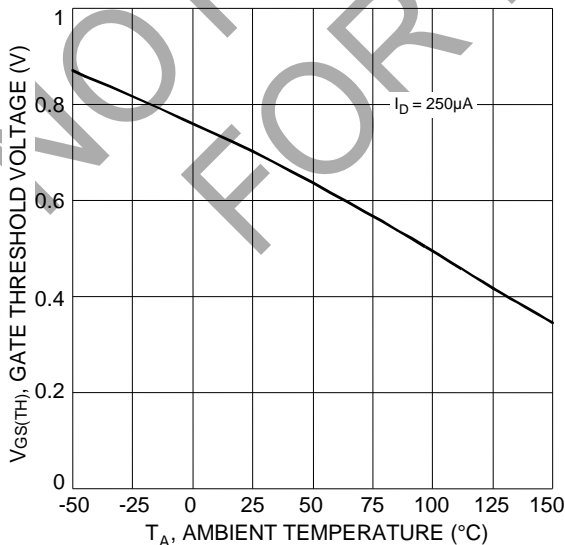


Fig. 5 Gate Threshold Variation with Temperature

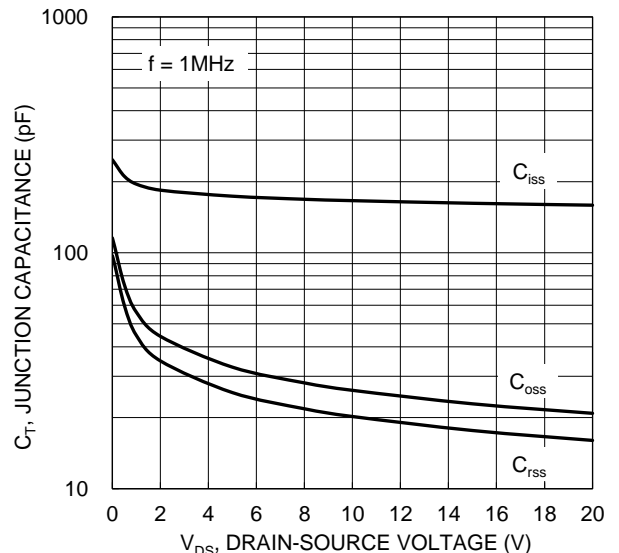


Fig. 6 Typical Junction Capacitance

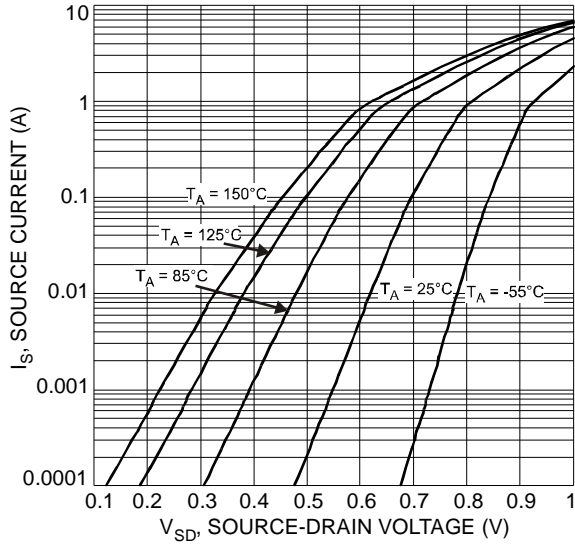


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

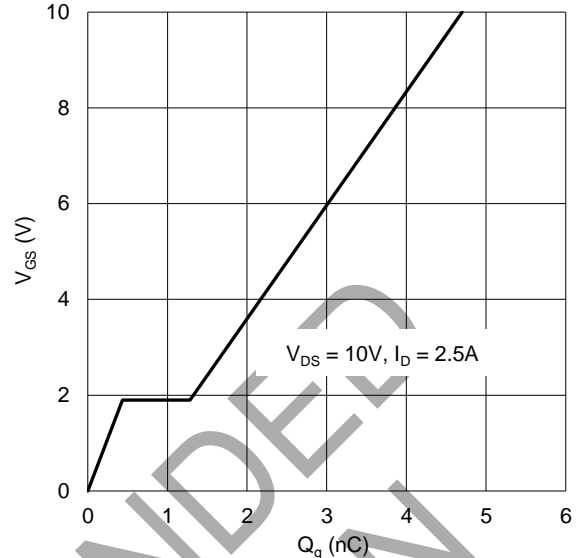


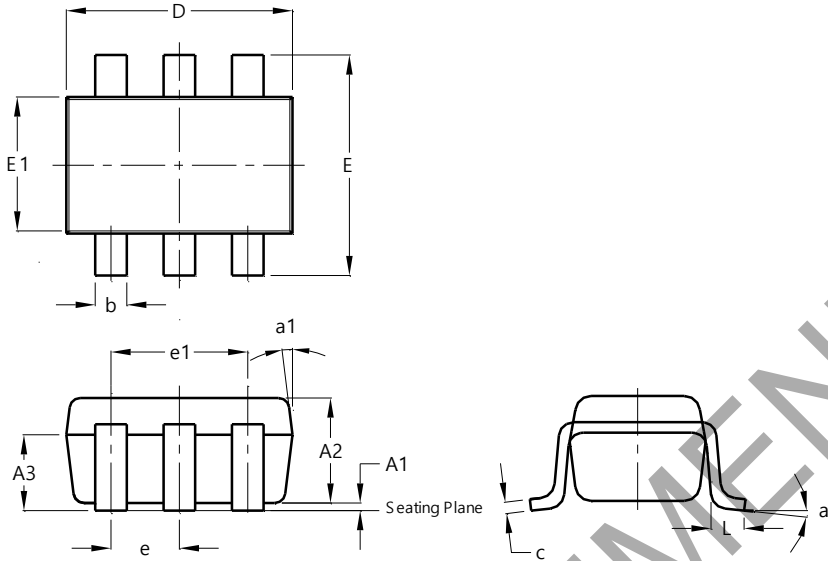
Fig. 8 Gate Charge

NOT RECOMMENDED FOR NEW DESIGN

**Package Outline Dimensions**

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

**SOT26**



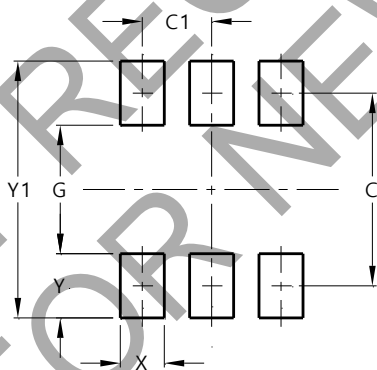
SOT26			
Dim	Min	Max	Typ
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°

All Dimensions in mm

**Suggested Pad Layout**

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

**SOT26**



Dimensions	Value (in mm)
C	2.40
C1	0.95
G	1.60
X	0.55
Y	0.80
Y1	3.20

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