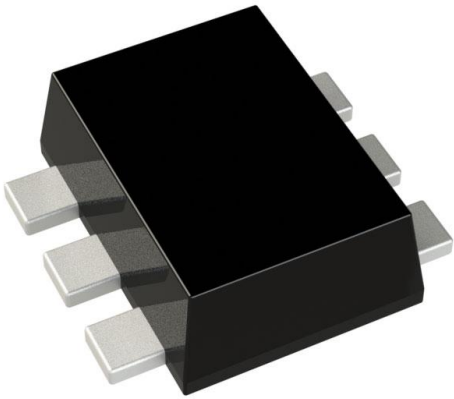


DMN5L06V-7 Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	DMN5L06V-7-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	DMN5L06V-7
Description	MOSFET 2N-CH 50V 0.28A SOT563
Detailed Description	Mosfet Array 50V 280mA 150mW Surface Mount SO T-563



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

DMN5L06V-7

Series:

-

Technology:

MOSFET (Metal Oxide)

FET Feature:

Logic Level Gate

Current - Continuous Drain (Id) @ 25°C:

280mA

Vgs(th) (Max) @ Id:

1.2V @ 250µA

Input Capacitance (Ciss) (Max) @ Vds:

50pF @ 25V

Operating Temperature:

-55°C ~ 150°C (Tj)

Package / Case:

SOT-563, SOT-666

Base Product Number:

DMN5L06

Manufacturer:

Diodes Incorporated

Product Status:

Obsolete

Configuration:

2 N-Channel (Dual)

Drain to Source Voltage (Vdss):

50V

Rds On (Max) @ Id, Vgs:

30hm @ 200mA, 2.7V

Gate Charge (Qg) (Max) @ Vgs:

-

Power - Max:

150mW

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-563

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0095

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



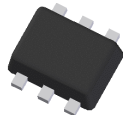
DMN5L06V/VA

DUAL N-CANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

NEW PRODUCT

Features

- Dual N-Channel MOSFET
- Low On-Resistance
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**

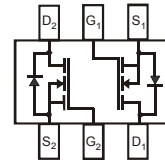
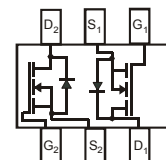


TOP VIEW

SOT-563

Mechanical Data

- Case: SOT-563
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)

DMN5L06V
(KAH Marking Code)DMN5L06VA
(KAG Marking Code)Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	50	V
Drain-Gate Voltage $R_{GS} \leq 1.0M\Omega$	V_{DGR}	50	V
Gate-Source Voltage	V_{GSS}	± 20	V
		± 40	
Drain Current (Note 1)	I_D	280	mA
Drain Current (Note 1)		1.5	
			A

Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	P_d	150	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
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 4)						
Drain-Source Breakdown Voltage	BV_{DSS}	50	—	—	V	$V_{GS} = 0V, I_D = 10\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	0.1	μA	$V_{DS} = 50V, V_{GS} = 0V$
				500		
Gate-Body Leakage	I_{GSS}	—	—	± 20	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	$V_{GS(th)}$	0.49	—	1.2	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	1.6	3	Ω	$V_{GS} = 2.7V, I_D = 0.2A,$ $V_{GS} = 1.8V, I_D = 50mA$
			2.2	4		
On-State Drain Current	$I_{D(ON)}$	0.5	1.0	—	A	$V_{GS} = 10V, V_{DS} = 7.5V$
Forward Transconductance	$ Y_{fs} $	200	—	—	mS	$V_{DS} = 10V, I_D = 0.2A$
Source-Drain Diode Forward Voltage	V_{SD}	0.5	—	1.4	V	$V_{GS} = 0V, I_S = 115mA$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	—	50	pF	$V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz$
Output Capacitance	C_{oss}	—	—	25	pF	
Reverse Transfer Capacitance	C_{rss}	—	—	5.0	pF	

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. No purposefully added lead.
 3. Diodes Inc's "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Short duration pulse test used to minimize self-heating effect.



DMN5L06V/VA

NEW PRODUCT

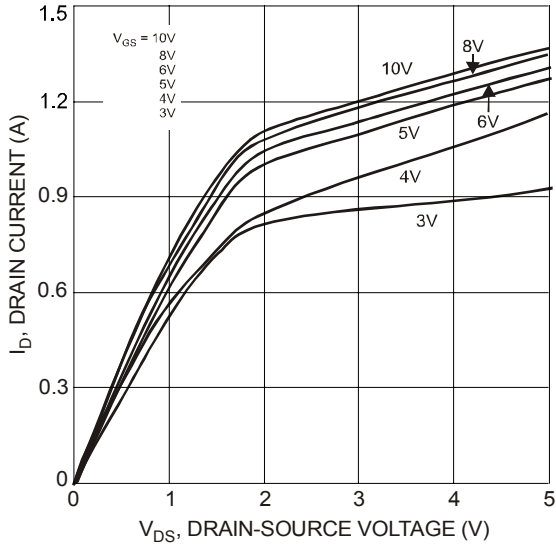


Fig. 1 Typical Output Characteristics

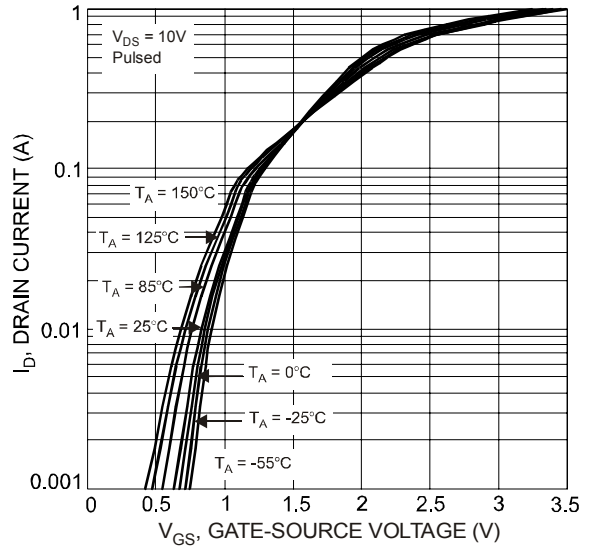


Fig. 2 Typical Transfer Characteristics

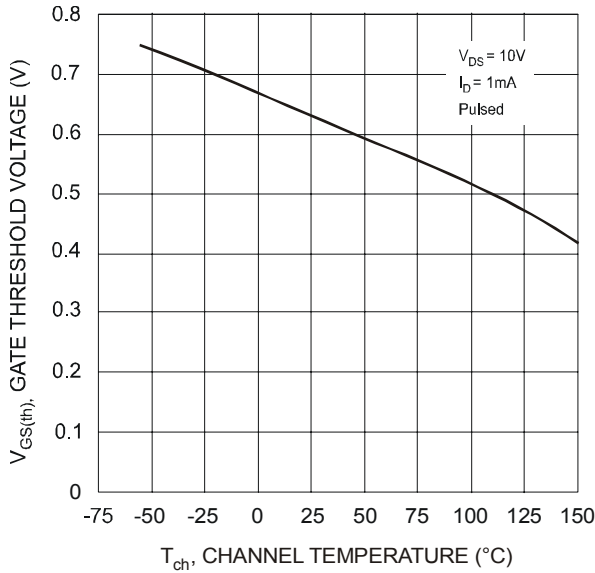


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

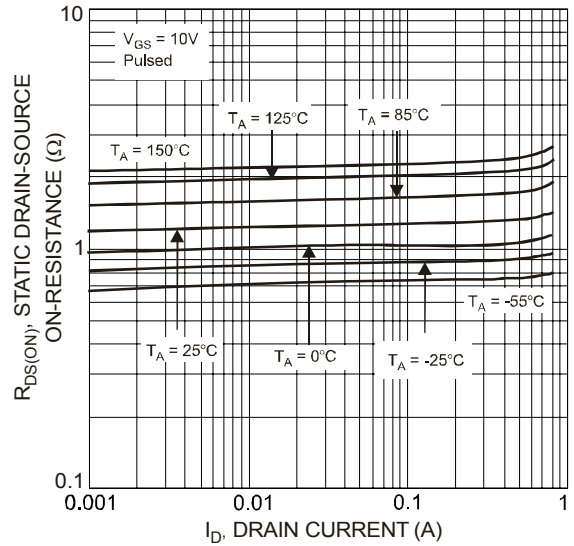


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

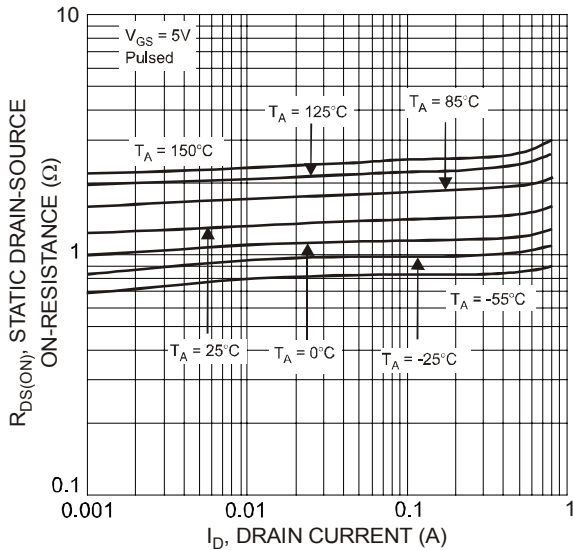


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

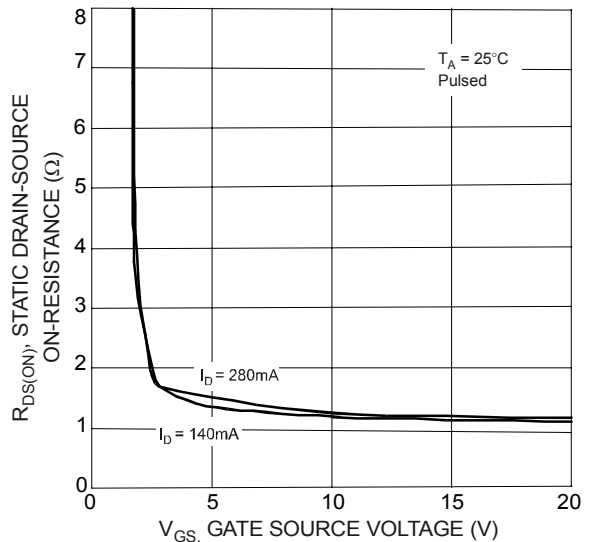


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage



DMN5L06V/VA

NEW PRODUCT

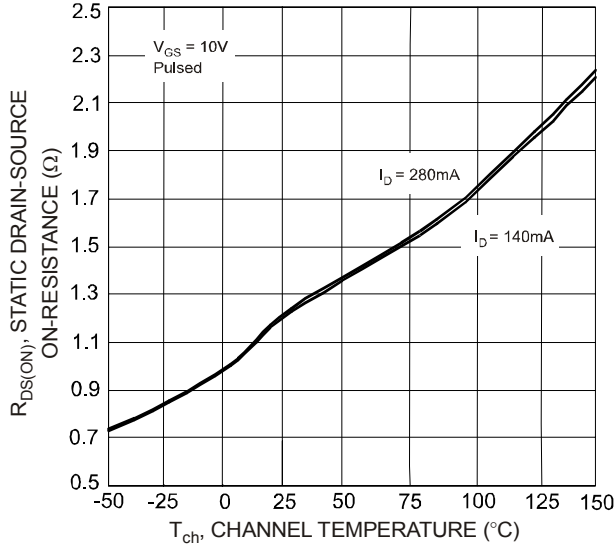


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

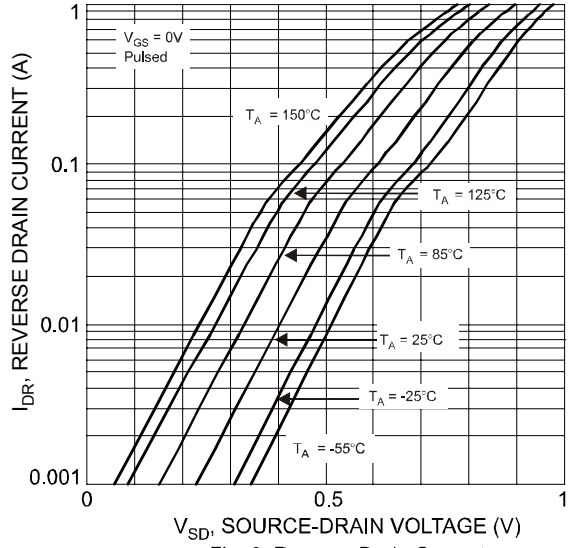


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

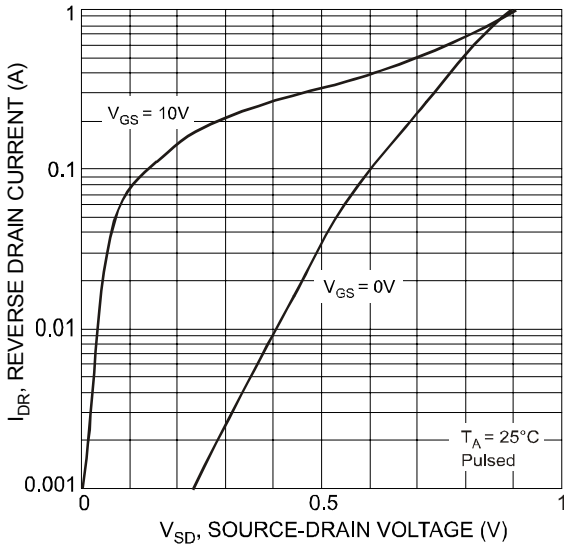


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

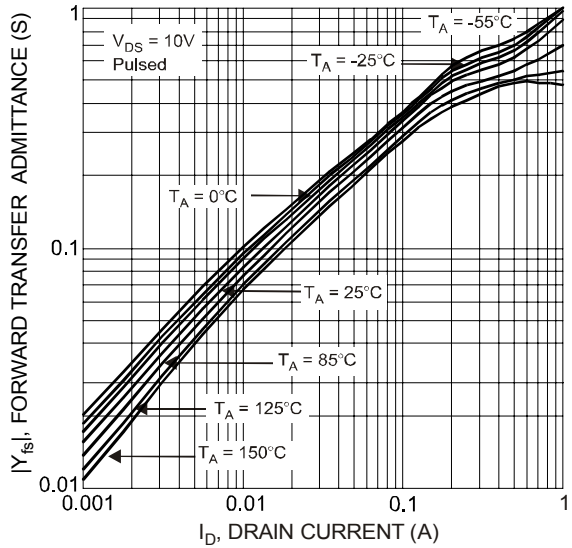


Fig. 10 Forward Transfer Admittance vs. Drain Current

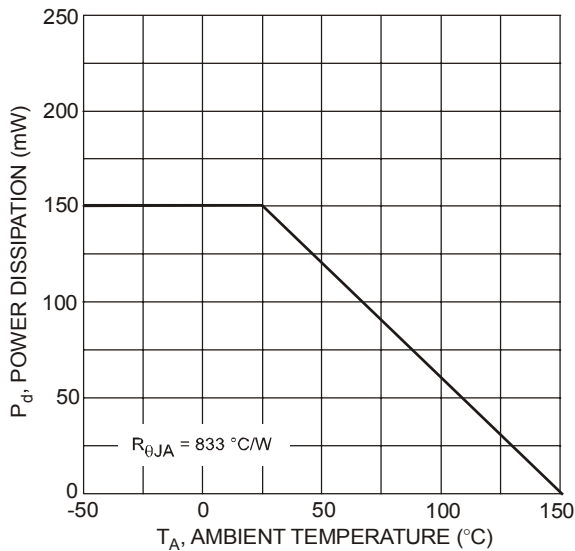


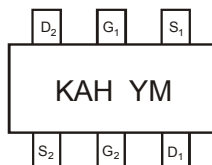
Fig. 11 Derating Curve - Total

Ordering Information (Note 5)

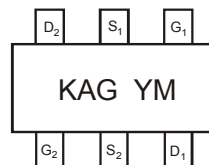
Part Number	Case	Packaging
DMN5L06V-7	SOT-563	3000/Tape & Reel
DMN5L06VA-7	SOT-563	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information (Note 6)



KAH = DMN5L06V Product Type
Marking Code (See Note 6)
YM = Date Code Marking
Y = Year ex: S = 2005
M = Month ex: 9 = September



KAG = DMN5L06VA Product Type
Marking Code (See Note 6)
YM = Date Code Marking
Y = Year ex: S = 2005
M = Month ex: 9 = September

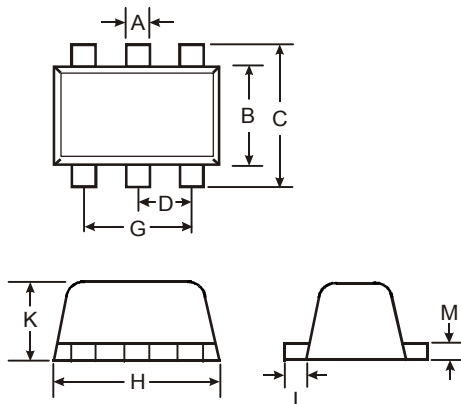
Notes: 6. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).

Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012
Code	S	T	U	V	W	X	Y	Z

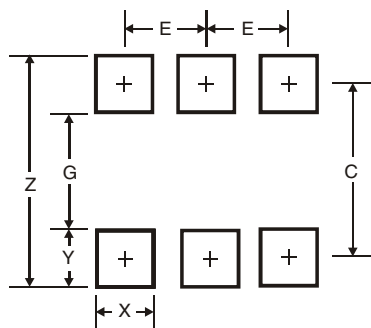
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-563			
Dim	Min	Max	Typ
A	0.15	0.30	0.20
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	0.50		
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.55	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.2
G	1.2
X	0.375
Y	0.5
C	1.7
E	0.5

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