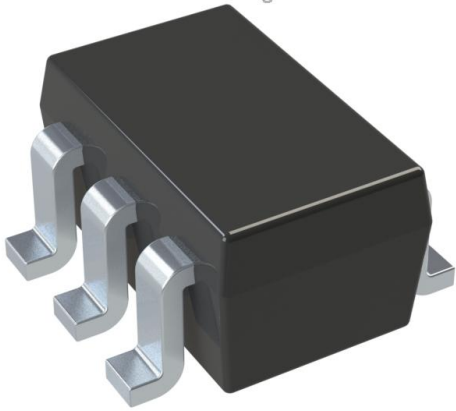


DMN62D0UDW-13 Datasheet

www.digi-electronics.com



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

DiGi Electronics Part Number	DMN62D0UDW-13-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	DMN62D0UDW-13
Description	MOSFET 2N-CH 60V 0.35A SOT363
Detailed Description	Mosfet Array 60V 350mA 320mW Surface Mount SO T-363



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:

DMN62D0UDW-13

Series:

-

Technology:

MOSFET (Metal Oxide)

FET Feature:

-

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

350mA

Vgs(th) (Max) @ Id:

1V @ 250µA

Input Capacitance (Ciss) (Max) @ Vds:

32pF @ 30V

Operating Temperature:

-55°C ~ 150°C (Tj)

Package / Case:

6-TSSOP, SC-88, SOT-363

Base Product Number:

DMN62

Manufacturer:

Diodes Incorporated

Product Status:

Active

Configuration:

2 N-Channel (Dual)

Drain to Source Voltage (Vdss):

60V

Rds On (Max) @ Id, Vgs:

20hm @ 100mA, 4.5V

Gate Charge (Qg) (Max) @ Vgs:

0.5nC @ 4.5V

Power - Max:

320mW

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-363

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0095

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



DMN62D0UDW

DUAL N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

BV_{DSS}	$R_{DS(on)}$ max	I_D max $T_A = +25^\circ C$
60V	2.0Ω @ $V_{GS} = 4.5V$	350mA
	2.5Ω @ $V_{GS} = 2.5V$	300mA

Features and Benefits

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- **ESD Protected Gate**
- **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-Q100/101/200, 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 ([DMN62D0UDWQ](#))**

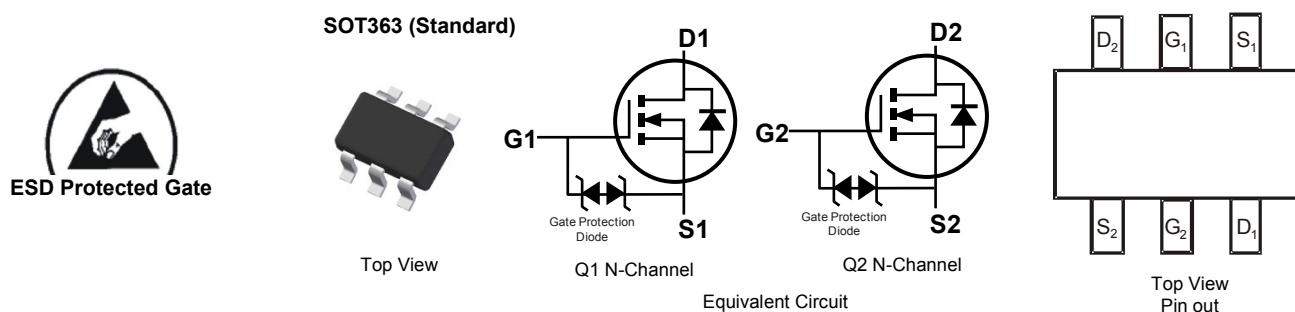
Description and Applications

This MOSFET is 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.

- Motor Control
- Power Management Functions

Mechanical Data

- Case: SOT363 (Standard)
- 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 ②
- Terminal Connections: See Diagram
- Weight: 0.006 grams (Approximate)



Ordering Information (Note 4)

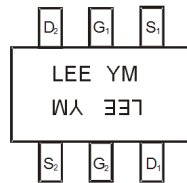
Part Number	Case	Packaging
DMN62D0UDW-7	SOT363 (Standard)	3,000/Tape & Reel
DMN62D0UDW-13	SOT363 (Standard)	10,000/Tape & Reel

- 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/>.



DMN62D0UDW

Marking Information



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

Date Code Key

Year	2016	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	D	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	Unit	
Drain-Source Voltage	V_{DS}	60	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current (Note 6) $V_{GS} = 4.5\text{V}$	Steady State	$T_A = +25^\circ\text{C}$	350	mA
		$T_A = +70^\circ\text{C}$	290	
Maximum Continuous Body Diode Forward Current (Note 6)	I_S	350	mA	

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

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P_D	320	mW
Thermal Resistance, Junction to Ambient (Note 5)	Steady State $R_{\theta JA}$	400	$^\circ\text{C}/\text{W}$
Total Power Dissipation (Note 6)	P_D	410	mW
Thermal Resistance, Junction to Ambient (Note 6)	Steady State $R_{\theta JA}$	312	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Notes: 5. Device mounted on FR-4 PCB, with minimum recommended pad layout
 6. Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.



DMN62D0UDW

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	60	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0	μA	$V_{DS} = 60V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	0.5	—	1.0	V	$V_{DS} = 10V, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	1.2	2.0	Ω	$V_{GS} = 4.5V, I_D = 0.1A$
			1.4	2.5		$V_{GS} = 2.5V, I_D = 0.05A$
			1.8	3.0		$V_{GS} = 1.8V, I_D = 0.05A$
Forward Transconductance	$ Y_{fs} $	—	1.8	—	S	$V_{DS} = 10V, I_D = 0.2A$
Diode Forward Voltage	V_{SD}	—	0.8	1.3	V	$V_{GS} = 0V, I_S = 115mA$
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	32	—	pF	$V_{DS} = 30V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	3.9	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	2.4	—	pF	
Gate Resistance	R_g	—	101	—	Ω	$f = 1MHz, V_{GS} = 0V, V_{DS} = 0V$
Total Gate Charge	Q_g	—	0.5	—	nC	$V_{GS} = 4.5V, V_{DS} = 10V,$ $I_D = 250mA$
Gate-Source Charge	Q_{gs}	—	0.09	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.09	—	nC	
Turn-On Delay Time	$t_{D(on)}$	—	2.4	—	ns	$V_{DD} = 30V, V_{GS} = 10V,$ $R_G = 25\Omega, I_D = 200mA$
Turn-On Rise Time	t_R	—	2.5	—	ns	
Turn-Off Delay Time	$t_{D(off)}$	—	22.6	—	ns	
Turn-Off Fall Time	t_F	—	12.5	—	ns	

Notes: 7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.



DMN62D0UDW

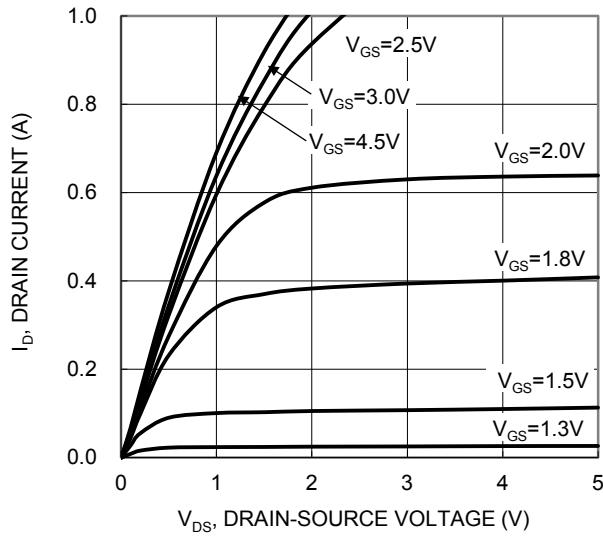


Figure 1. Typical Output Characteristic

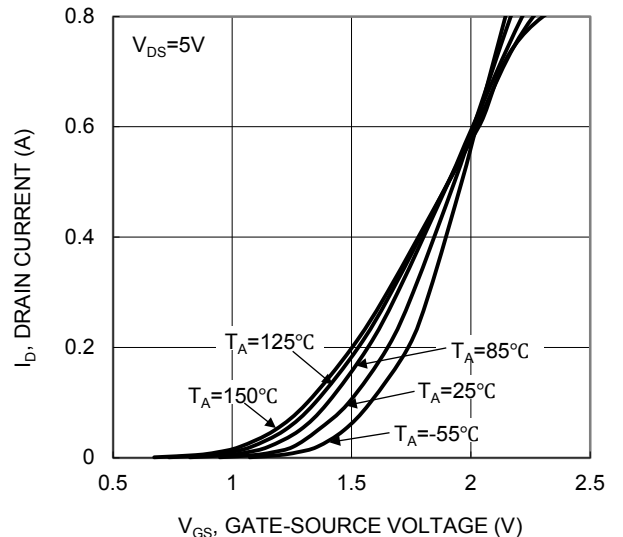


Figure 2. Typical Transfer Characteristic

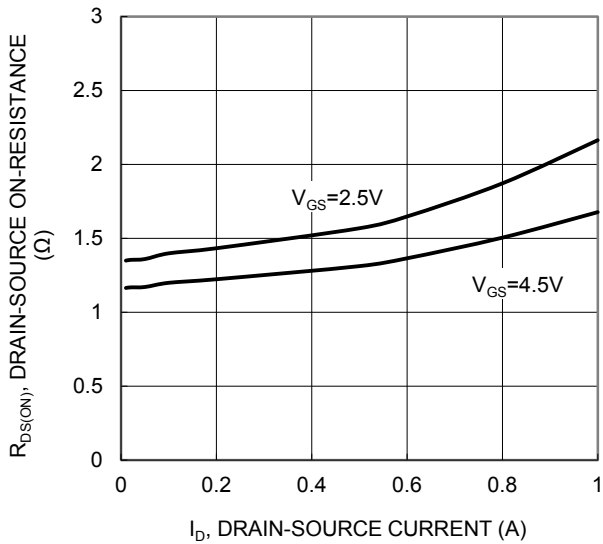


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

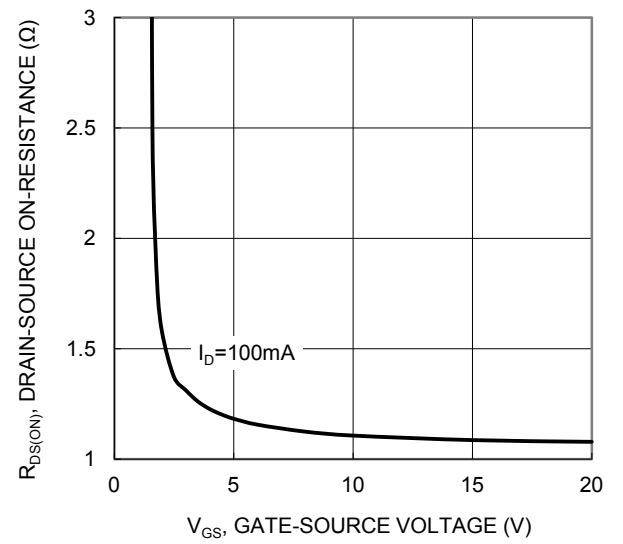


Figure 4. Typical Transfer Characteristic

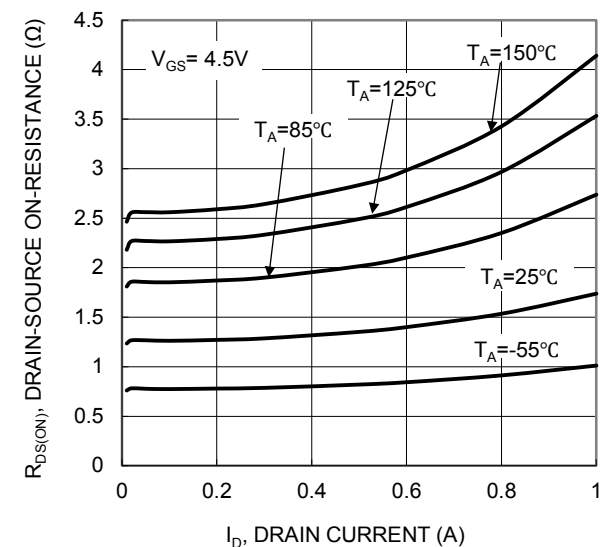


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

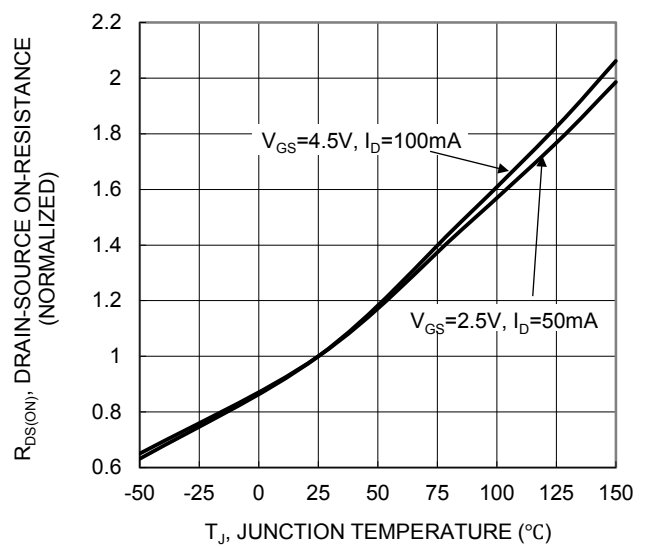


Figure 6. On-Resistance Variation with Junction Temperature



DMN62D0UDW

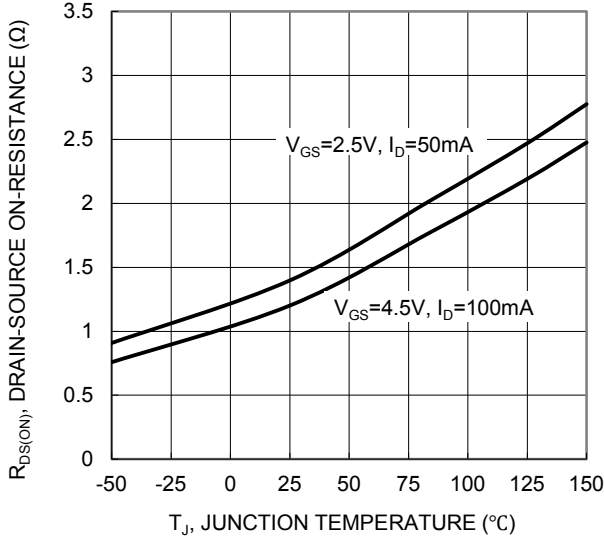


Figure 7. On-Resistance Variation with Junction Temperature

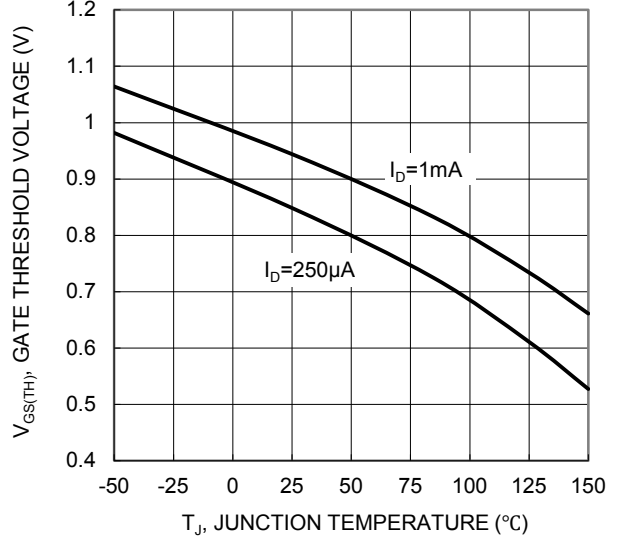


Figure 8. Gate Threshold Variation vs. Junction Temperature

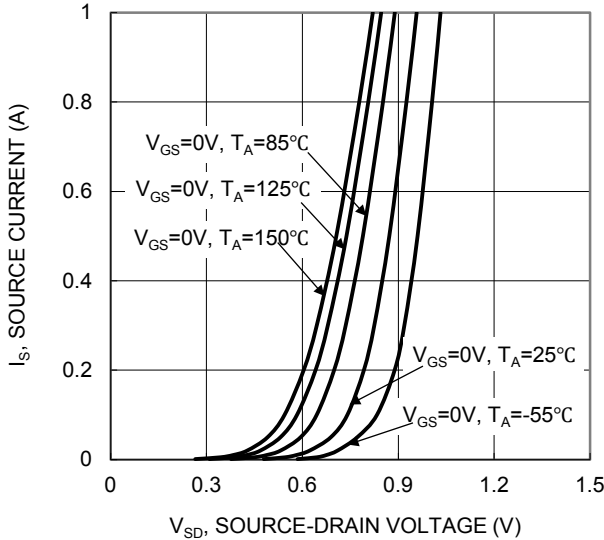


Figure 9. Diode Forward Voltage vs. Current

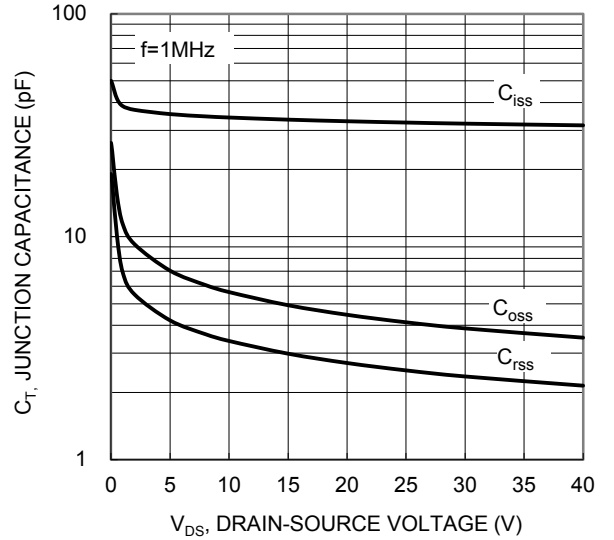


Figure 10. Typical Junction Capacitance

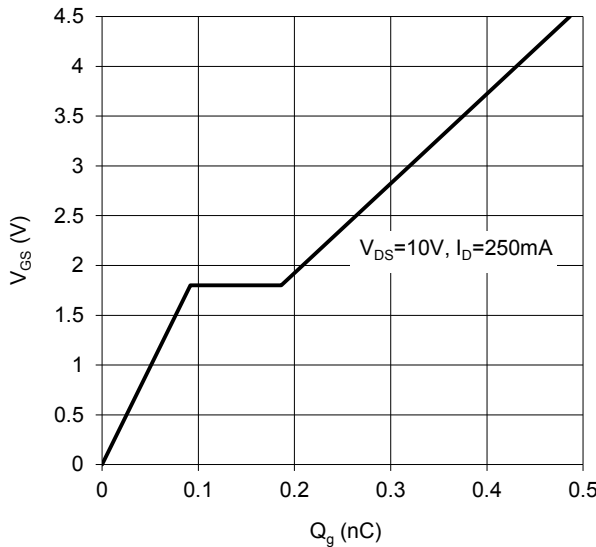


Figure 11. Gate Charge

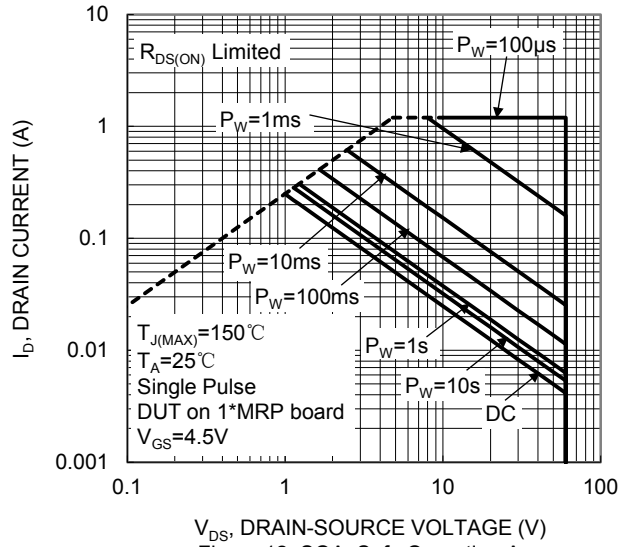
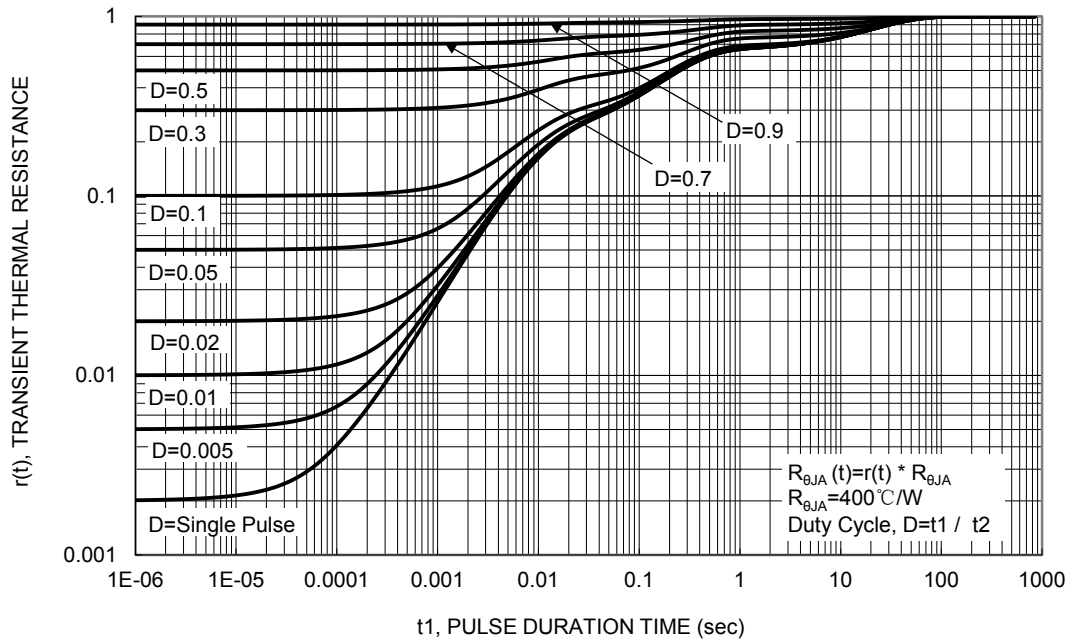


Figure 12. SOA, Safe Operation Area



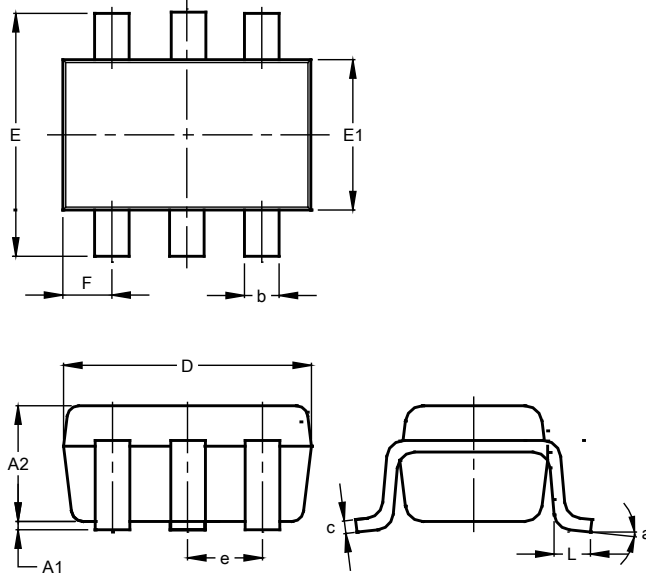
DMN62D0UDW



Package Outline Dimensions

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

SOT363 (Standard)

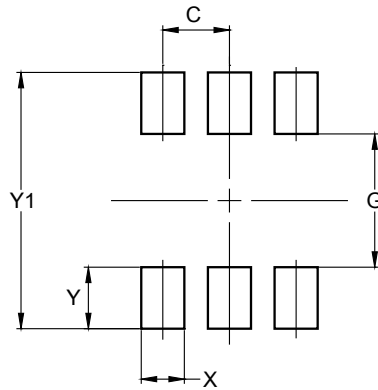


SOT363 (Standard)			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.80	1.00	0.90
b	0.10	0.35	0.225
c	0.08	0.22	0.15
D	1.80	2.20	2.00
E	2.00	2.45	2.225
E1	1.15	1.35	1.25
e	--	--	0.65
F	0.25	0.45	0.35
L	0.25	0.46	0.355
a	0°	8°	--
All Dimensions in mm			

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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