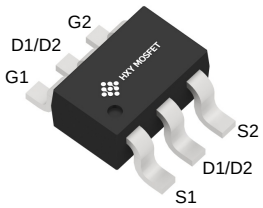
DMG6968UDM

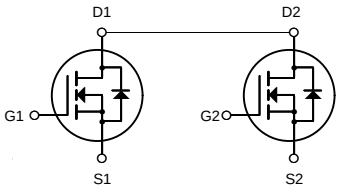
Dual N-Channel Enhancement Mode MOSFET

Description

The DMG6968UDM uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.



SOT-23-6L
(SOT-26)



Dual N-Channel MOSFET

General Features

V_{DS} = 20V,I_D = 7A

$R_{DS(ON)}$ <20mΩ@ V_{GS}=4.5V

Application

Battery protection

Load switch

Power management

Ordering Information

Product ID	Pack	Brand	Qty(PCS)
DMG6968UDM	SOT-23-6L(SOT-26)	HXY MOSFET	3000

Absolute Maximum Ratings@T_j=25ºC(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D@T_A=25℃	Drain Current, V_{GS} @ 4.5V[3]	7	A
I_{DM}	Pulsed Drain Current[1]	25	A
P_D@T_A=25℃	Total Power Dissipation	1.25	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃
Rthj-a	Maximum Thermal Resistance, Junction-ambient[3]	100	℃/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

Gate-Body Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.5	0.7	1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=4.5A	-	14	20	mΩ
		V_{GS}=2.5V, I_D=3.5A	-	19	25	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=4.5A	-	10	-	S
Dynamic Characteristics						
Input Capacitance	C_{lss}	V_{DS}=10V,V_{GS}=0V, F=1.0MHz	-	900	-	PF
Output Capacitance	C_{oss}		-	220	-	PF
Reverse Transfer Capacitance	C_{rss}		-	100	-	PF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V,I_D=1A V_{GS}=4.5V,R_{GEN}=6Ω	-	10	20	nS
Turn-on Rise Time	t_r		-	11	25	nS
Turn-Off Delay Time	$t_{d(off)}$		-	35	70	nS
Turn-Off Fall Time	t_f		-	30	60	nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=6A, V_{GS}=4.5V	-	12	15	nC
Gate-Source Charge	Q_{gs}		-	2.3	-	nC
Gate-Drain Charge	Q_{gd}		-	1	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=1.7A	-	0.75	1.2	V
Diode Forward Current (Note 2)	I_S		-	-	6.5	A

Typical Electrical and Thermal Characteristics

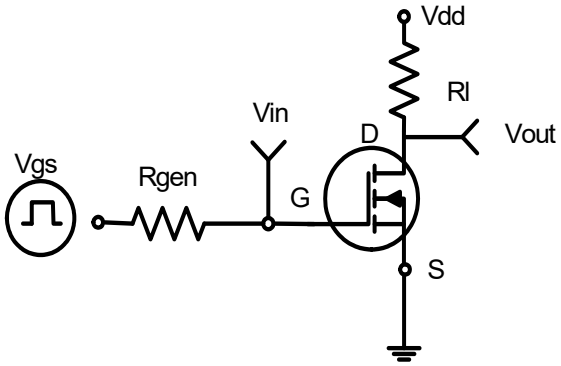


Figure 1:Switching Test Circuit

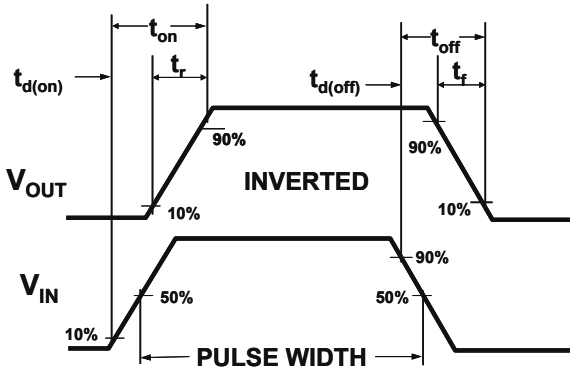


Figure 2:Switching Waveforms

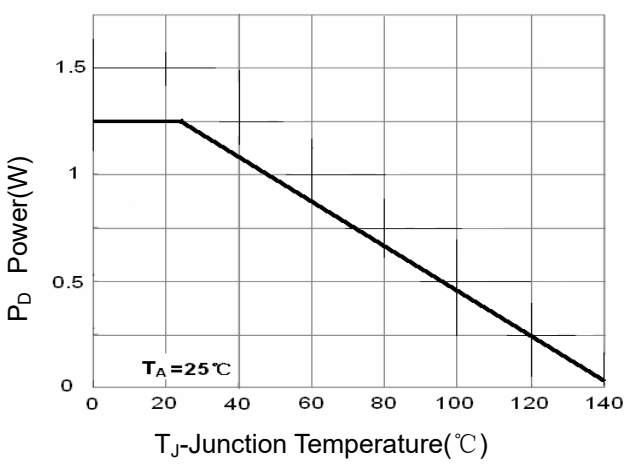


Figure 3 Power Dissipation

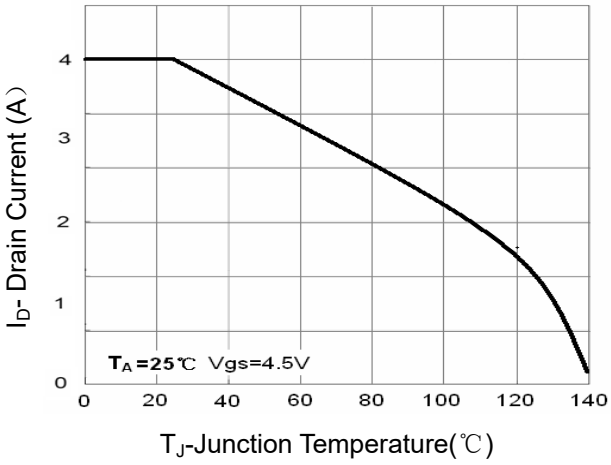


Figure 4 Drain Current

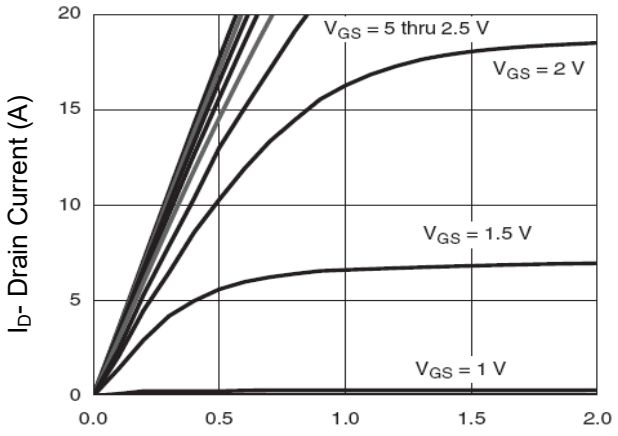


Figure 5 Output Characteristics

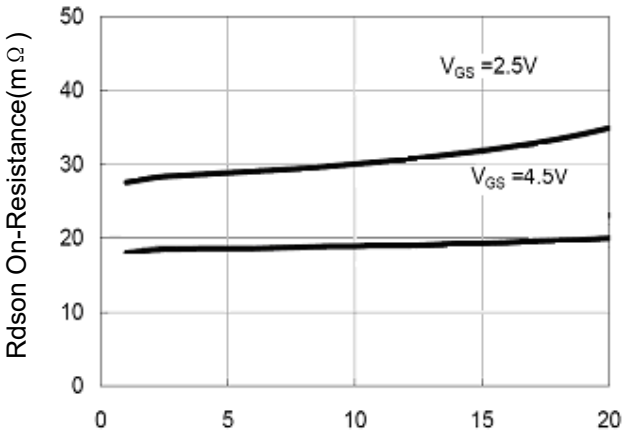


Figure 6 Drain-Source On-Resistance

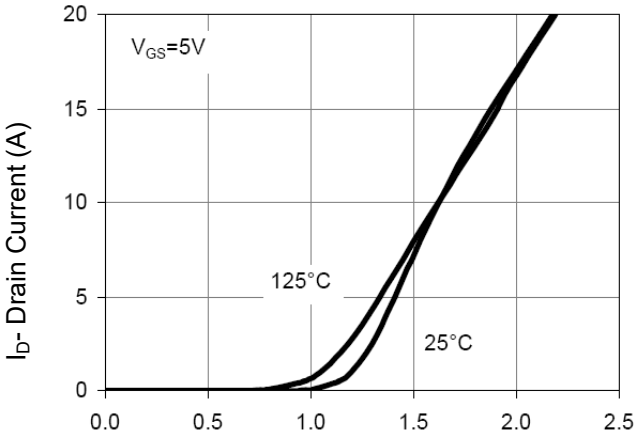


Figure 7 Transfer Characteristics

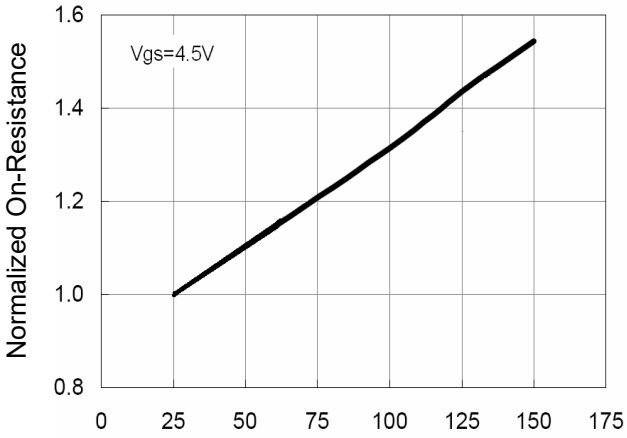


Figure 8 Drain-Source On-Resistance

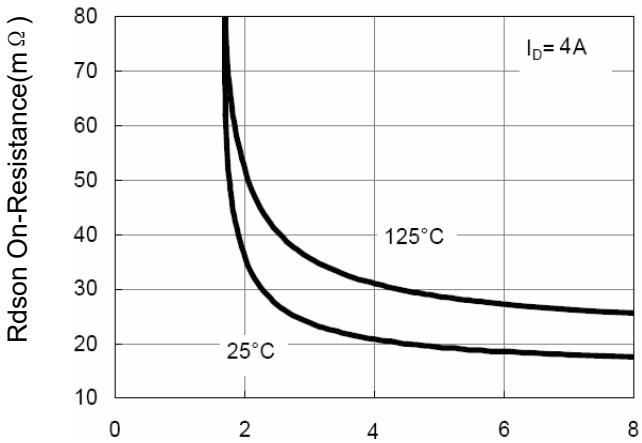


Figure 9 Rdson vs Vgs

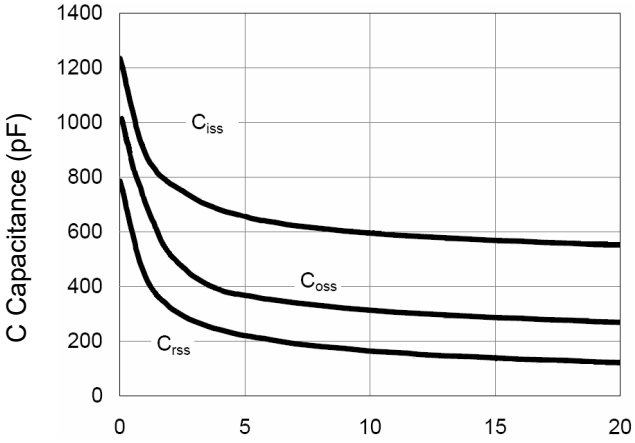


Figure 10 Capacitance vs Vds

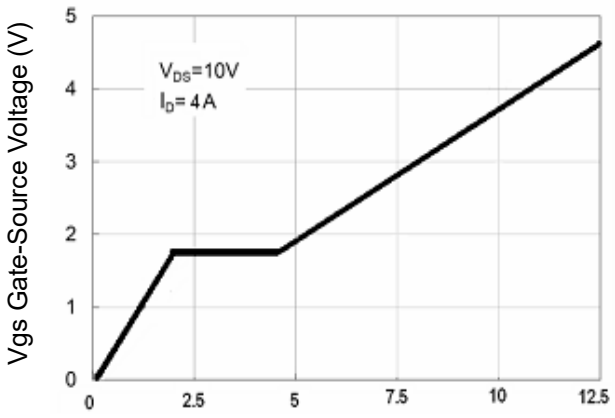


Figure 11 Gate Charge

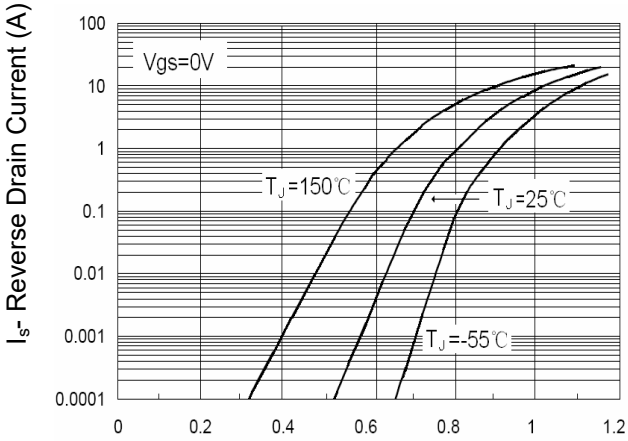


Figure 12 Source- Drain Diode Forward

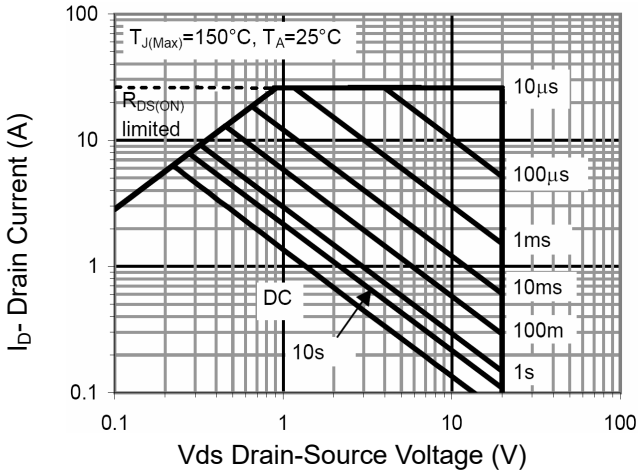


Figure 13 Safe Operation Area

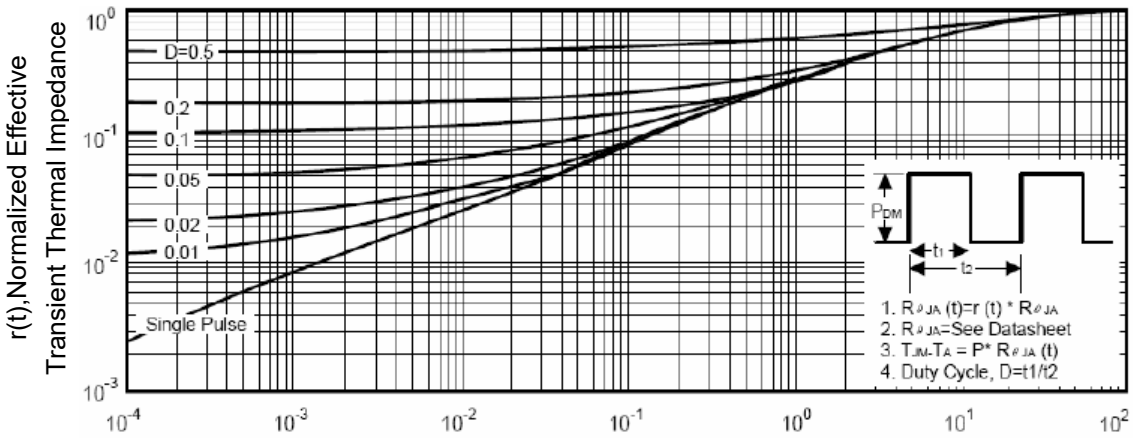
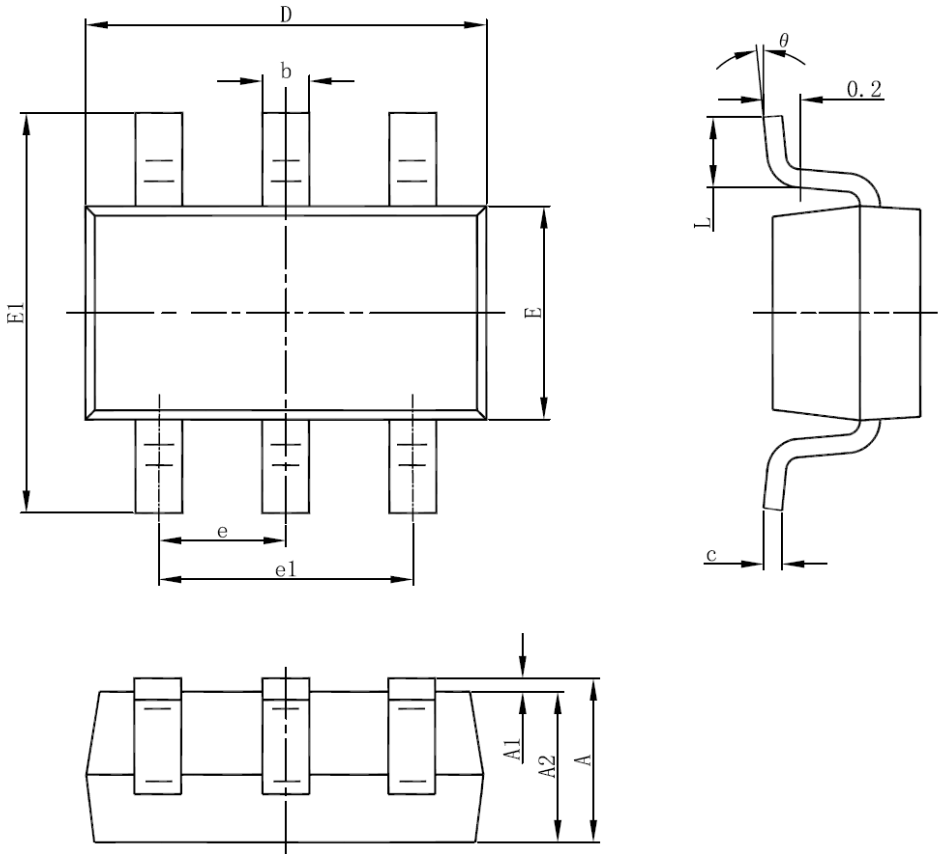


Figure 14 Normalized Maximum Transient Thermal Impedance

SOT-23-6L(SOT-26) Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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