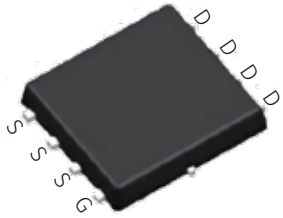
FEATURES

- V_{DS}=60V,I_D=50A
- $R_{DS(ON)\ Typ}$ = 12.5mΩ @ V_{GS} = 10V
- $R_{DS(ON)\ Typ}$ = 15.5mΩ @ V_{GS} = 4.5V
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔVds TESTED!



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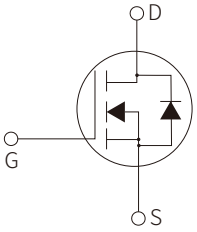


Schematic Symbol

APPLICATION

- Load Switch
- PWM Application
- Power Management

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-to-Source Voltage		V_{DS}	60	V
Pulsed Drain Current [1]		I_{DM}	200	A
Continuous Drain Current	T_C = 25°C	I_D	50	A
	T_C = 100°C		30	A
Power Dissipation T_C = 25°C		P_D	48	W
Gate-to-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy [2]		E_{AS}	36	mJ
Junction & Storage Temperature Range		T_J,T_{STG}	-55 to 150	°C
Thermal Resistance, Junction to Case		$R_{θJC}$	2.6	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	60			V
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V			1.0	μA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1.0	1.3	1.8	V
Static Drain-Source ON-Resistance[2]	$R_{DS(on)}$	V_{GS}=10V,I_D=20A		12.5	15	mΩ
		V_{GS}=4.5V,I_D=10A		15.5	19	mΩ
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{GS}=0V,V_{DS}=30V, f = 1MHz		590		pF
Output capacitance	C_{oss}			210		pF
Reverse transfer capacitance	C_{rss}			10		pF
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=0 to 10V I_D=20A		13.9		nC
Gate-Source Charge	Q_{gs}			1.6		nC
Gate Drain("Miller") Charge	Q_{gd}			3.1		nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,V_{GS}=10V R_{GEN}=6Ω, I_D=20A		3.7		nS
Turn-on Rise Time	t_r			4.3		nS
Turn-Off Delay Time	$t_{d(off)}$			16.2		nS
Turn-Off Fall Time	t_f			6.5		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V_{SD}	I_S=20A,V_{GS}=0V			1.2	V
Body Diode Reverse Recovery Time	t_{rr}	I_F=15A di/dt = 100A/us		24		nS
Body Diode Reverse Recovery Charge	Q_{rr}			9.3		nC
Maximum Continuous Drain to Source Diode Forward Current	I_S				50	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}				200	A

Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. E_{AS} condition: Starting T_J=25°C, V_{DD}=30V, V_G=10V, R_G=25ohm, L=0.5mH, I_{AS}=12A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

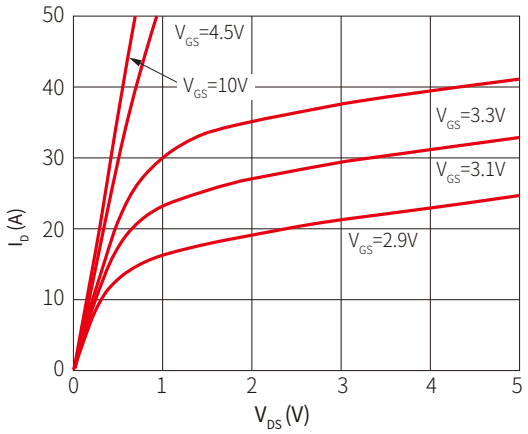


Figure 2: Typical Transfer Characteristics

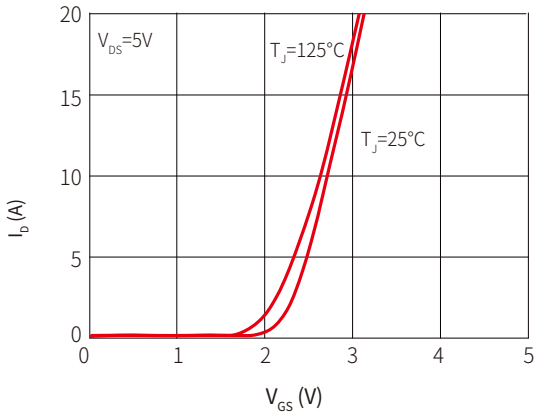


Figure 3: On-Resistance vs. Drain Current

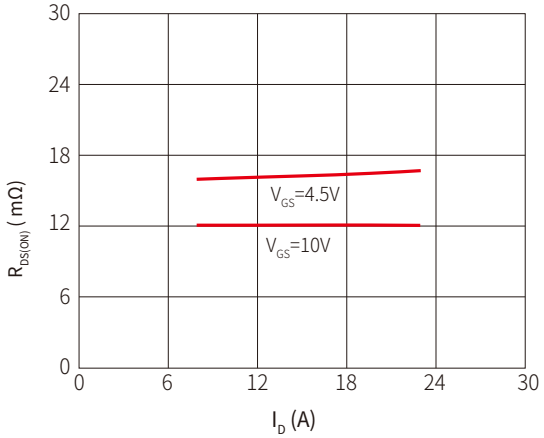


Figure 4: Body Diode Characteristics

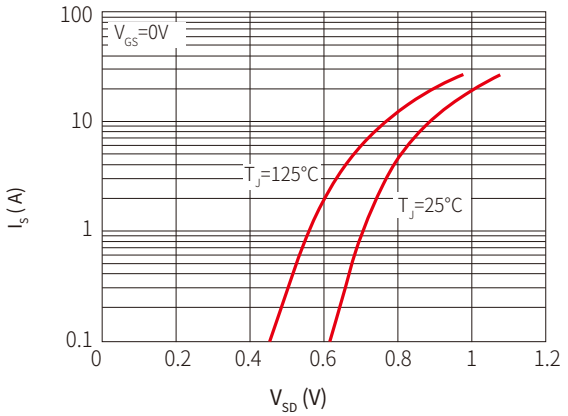


Figure 5: Gate Charge Characteristics

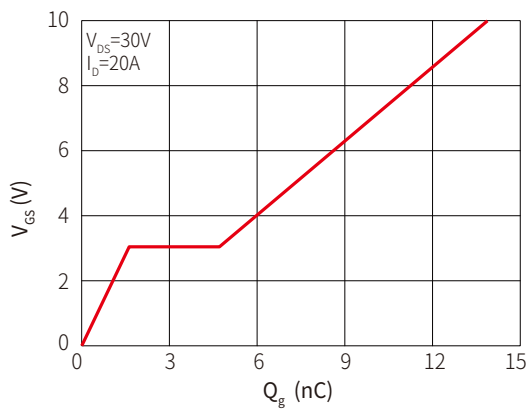


Figure 6: Capacitance Characteristics

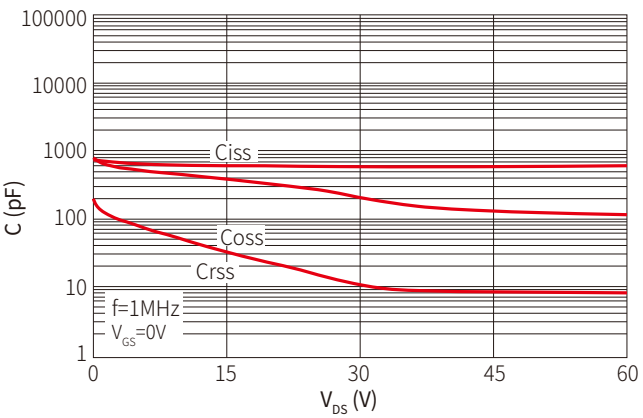


Figure 7: Normalized Breakdown Voltage vs.Junction Temperature

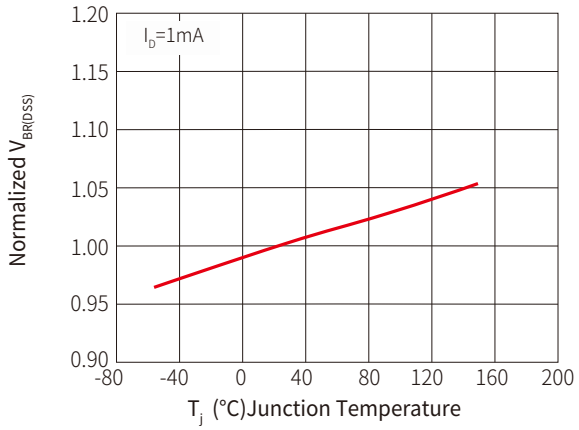


Figure 8: Normalized on Resistance vs.Junction Temperature

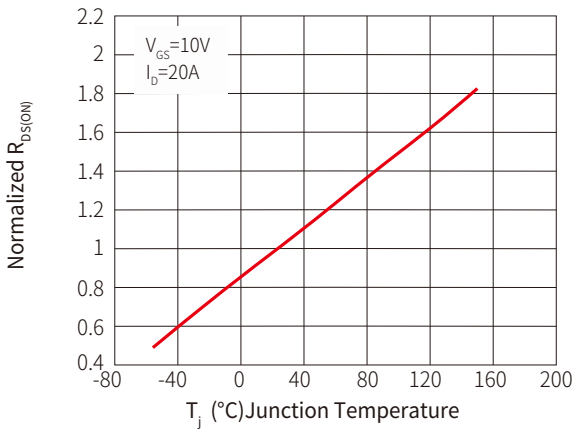


Figure 9: Maximum Safe Operating Area

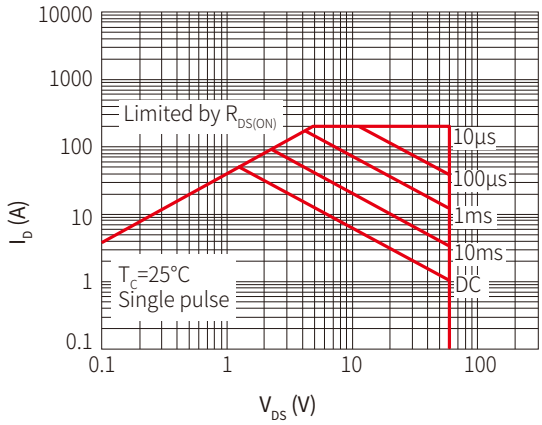


Figure 10: Maximum Continuous Drain Current vs.Ambient Temperature

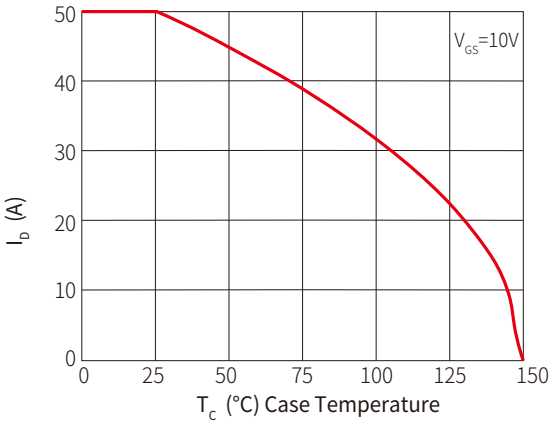
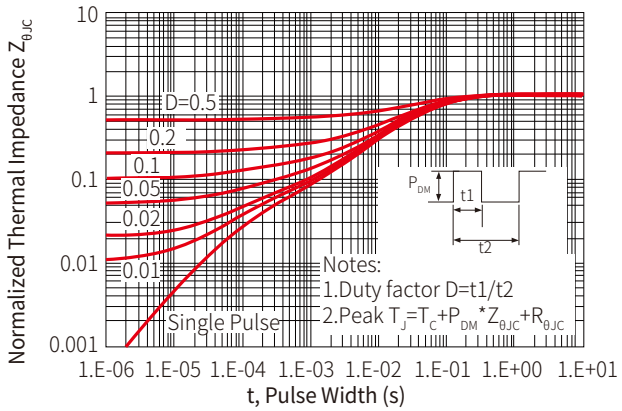


Figure 11: Normalized Maximum Transient Thermal Impedance



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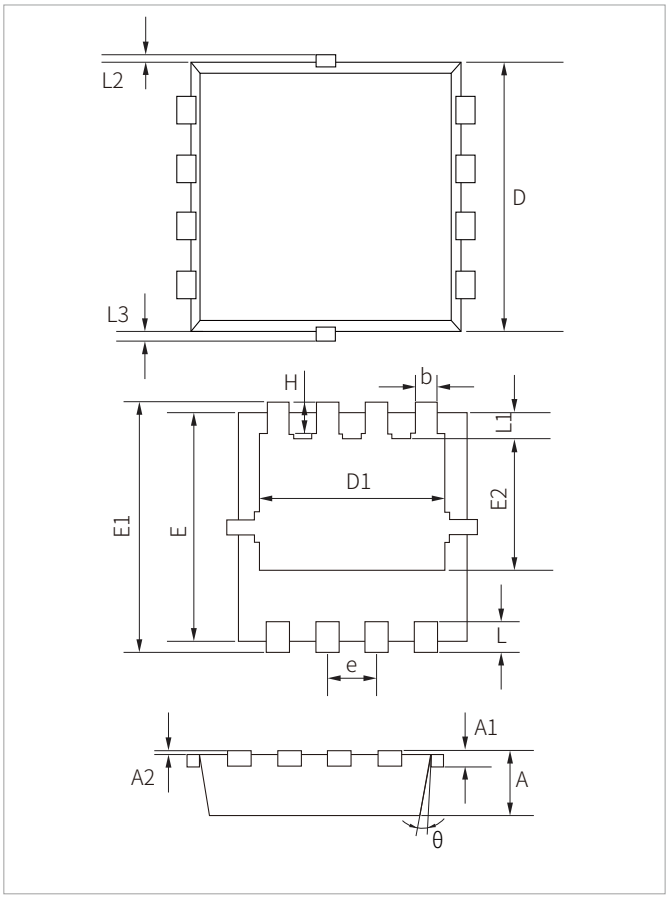

Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152REF		0.006REF	
A2	0~0.05		0~0.002	
D	2.900	3.300	0.114	0.130
D1	2.250	2.650	0.089	0.104
E	2.900	3.300	0.114	0.130
E1	3.150	3.550	0.124	0.140
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM0612Q	PDFN3×3-8L	0612 XXXX	5000PCS	13”

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