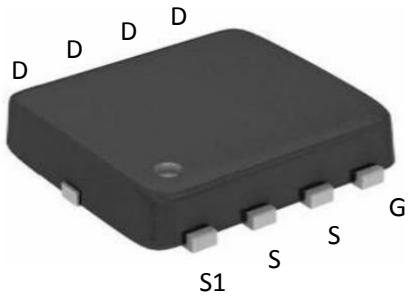
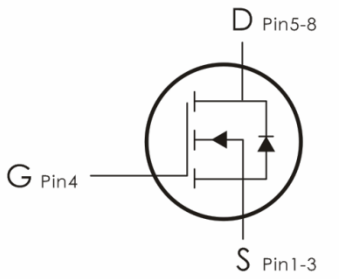
Description：

This N-Channel MOSFET uses advanced trench technology to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.





Features：

1) V_{DS}=30V,I_D=40A ,$R_{DS(ON)}$=10mΩ@V_{GS}=10V
2) Improved dv/dt capability
3) Fast switching
4) 100% EAS Guaranteed
5) Green Device Available.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current Continuous (T_C=25℃)[1]	40	A
	Continuous Drain Current-(T_C=100℃)[1]	24	
I_{DM}	Drain Current – Pulsed[2]	75	A
E_{AS}	Single Pulse Avalanche Energy[3]	24.2	mJ
I_{AS}	Avalanche Current	22	A
P_D	Power Dissipation (T_A=25℃)[4]	1.67	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case[1]	4.8	℃/W

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$R_{\theta JA}$	Thermal Resistance,Junction to Ambient[1]	75	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	30	---	---	V
I_{DSS}	Drain-Source Leakage Current	V_{GS}=0V, V_{DS}=30V, T_J=25℃	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{GS}=10V,I_D= 15A	---	8.5	10	mΩ
		V_{GS}=4.5V,I_D= 10A	---	11	17	
G_{FS}	Forward Transconductance	V_{DS}=5V, I_D=15A	---	24.4	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=1V, V_{GS}=0V, f=1MHz	---	896	---	pF
C_{oss}	Output Capacitance		---	126	---	
C_{rss}	Reverse Transfer Capacitance		---	108	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=10V , R_G=1.5Ω， I_D=20A	---	6.4	---	ns
t_r	Rise Time		---	39	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	21	---	ns
t_f	Fall Time		---	4.7	---	ns
Q_g	Total Gate Charge	V_{DS}=15V , V_{GS}=4.5V , I_D=12	---	9.82	---	nC
Q_{gs}	Gate-Source Charge		---	2.24	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	5.54	---	nC

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Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[2]	V_{GS}=0V , I_S=1A , T_J=25℃	---	---	1	V
I_S	Reverse Recovery Time[1.5]	V_G=V_D=0V , Force Current	---	37	---	nS
I_{SM}	Reverse Recovery Charge[2.5]		---	75	---	nC

Notes:

1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=25V,V_{GS}=10V,L=0.1mH,I_{AS}=22A
4.The power dissipation is limited by 175℃ junction temperature
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics： (T_C=25℃ unless otherwise noted)

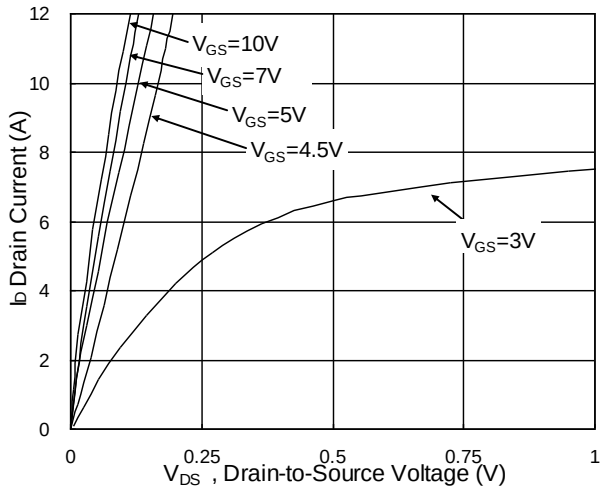


Fig.1 Typical Output Characteristics

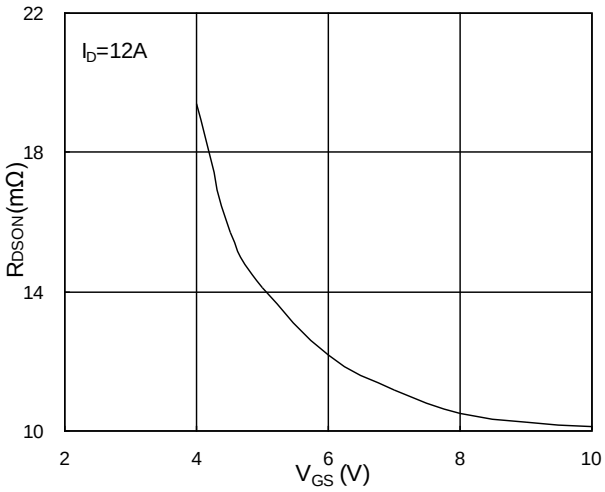


Fig.2 On-Resistance vs. G-S Voltage

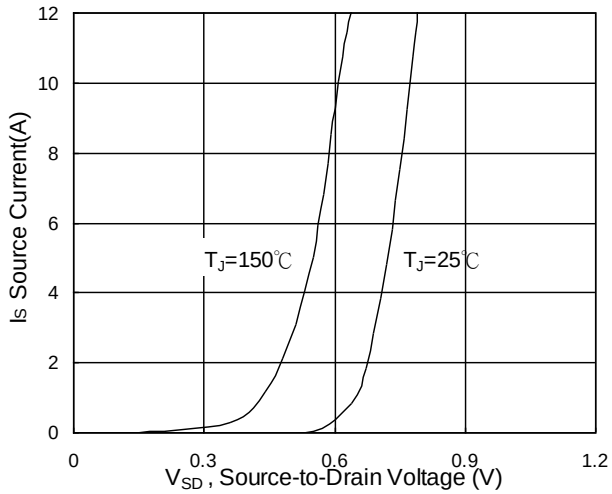


Fig.3 Forward Characteristics of Reverse

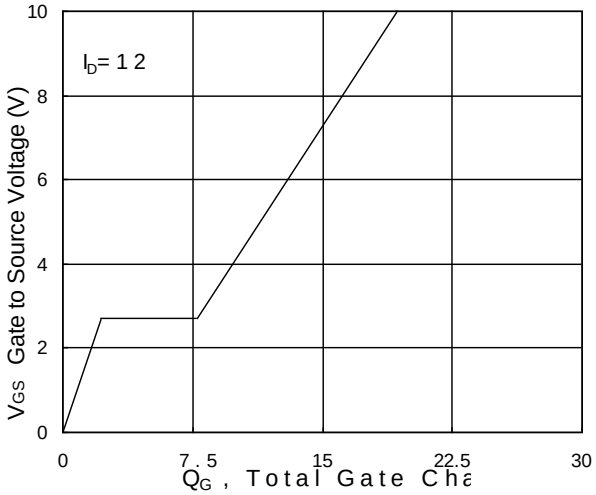


Fig.4 Gate-charge Characteristics

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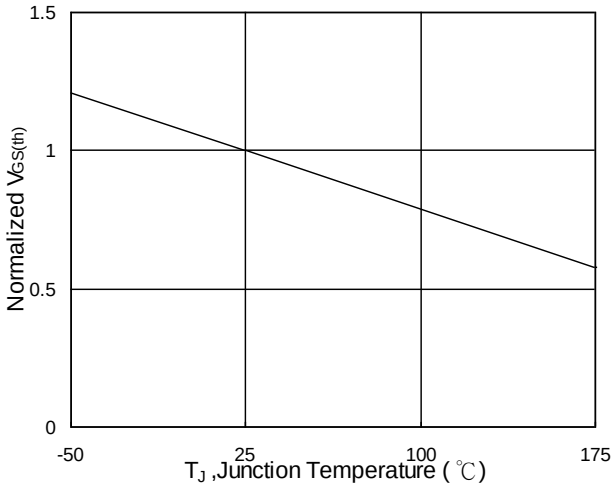


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

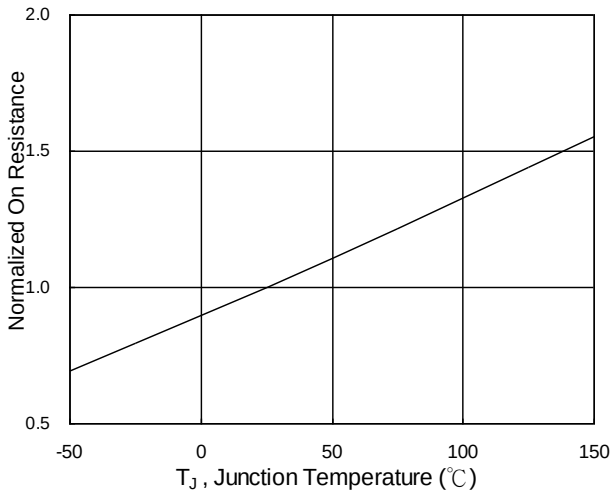


Fig.6 Normalized R_{DSON} vs. T_J

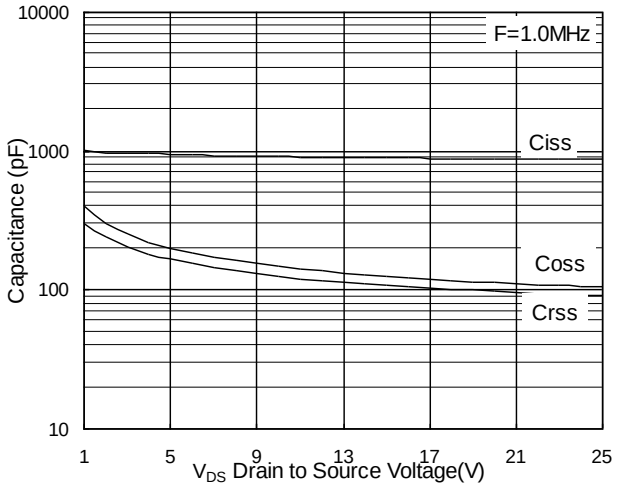


Fig.7 Capacitance

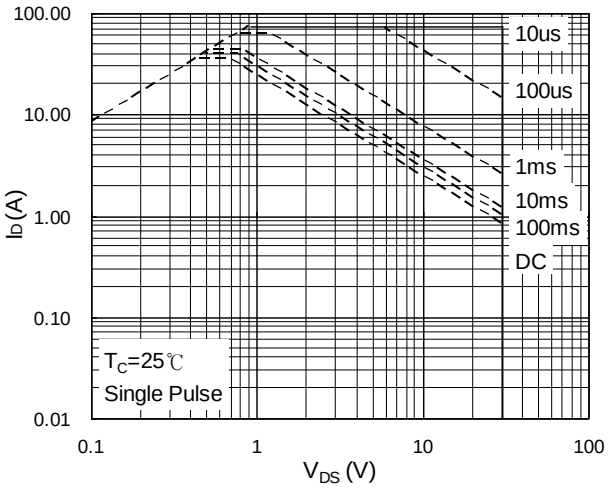


Fig.8 Safe Operating Area

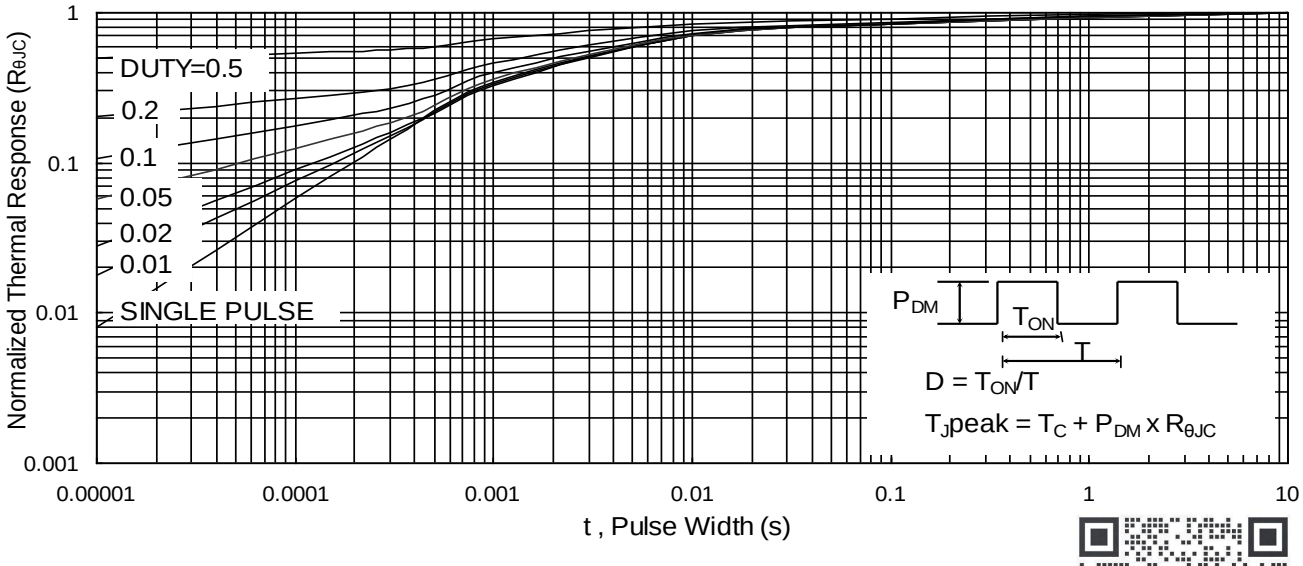


Fig.9 Normalized Maximum Transient Thermal Impedance

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