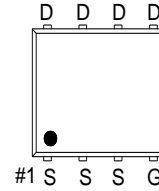
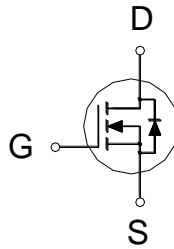




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	7mΩ	36A



G. GATE
D. DRAIN
S. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	36	A
	$T_C = 100\text{ °C}$		23	
Pulsed Drain Current ¹		I_{DM}	100	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	12	
	$T_A = 70\text{ °C}$		9.2	
Avalanche Current		I_{AS}	23	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	26.4	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	16.7	W
	$T_C = 100\text{ °C}$		6.7	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.7	W
	$T_A = 70\text{ °C}$		1	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		75	°C / W
Junction-to-Case	$R_{\theta JC}$		7	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$.

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ °C}$, Unless Otherwise Noted)

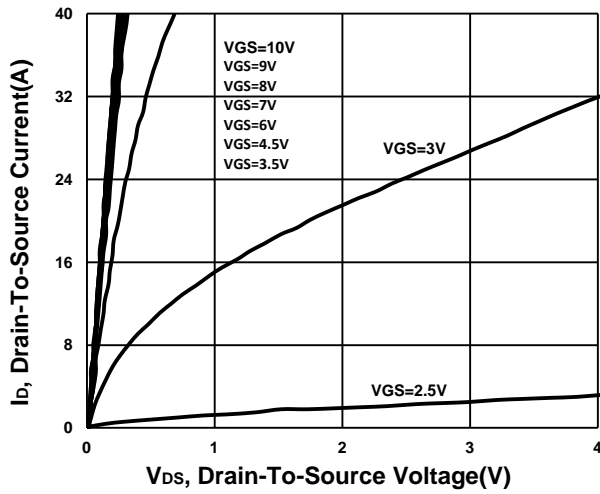
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.35	1.8	3	

Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA	
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$			10		
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 12A$		7	9.5	m Ω	
		$V_{GS} = 10V, I_D = 12A$		5.4	7		
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 12A$		55		S	
DYNAMIC							
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		835		μF	
Output Capacitance	C_{oss}			158			
Reverse Transfer Capacitance	C_{rss}			96			
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		2.4		Ω	
Total Gate Charge ²	Q_g	$V_{GS} = 10V$	$V_{DS} = 15V, I_D = 12A$		17.7	nC	
		$V_{GS} = 4.5V$			9.5		
Gate-Source Charge ²	Q_{gs}			2.3			
Gate-Drain Charge ²	Q_{gd}			5.1			
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V, I_D \cong 12A, V_{GS} = 10V, R_{GEN} = 6\Omega$			27		nS
Rise Time ²	t_r				23		
Turn-Off Delay Time ²	$t_{d(off)}$				51		
Fall Time ²	t_f			24			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S				14	A	
Forward Voltage ¹	V_{SD}	$I_F = 12A, V_{GS} = 0V$			1.2	V	
Reverse Recovery Time	t_{rr}	$I_F = 12A, di_F/dt = 100A / \mu S$		13.3		nS	
Reverse Recovery Charge	Q_{rr}			5.2		nC	

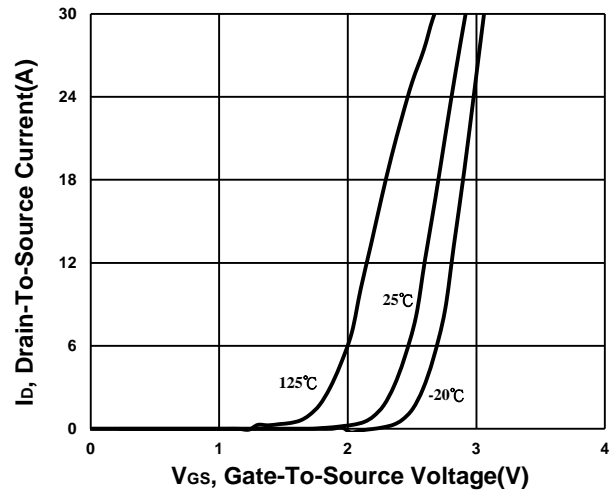
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

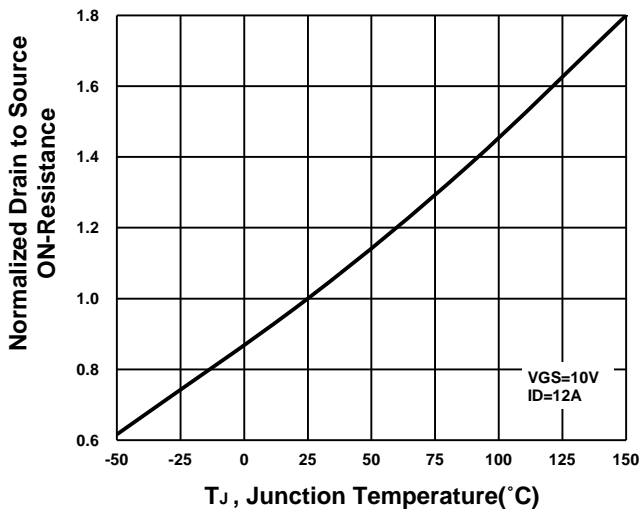
Output Characteristics



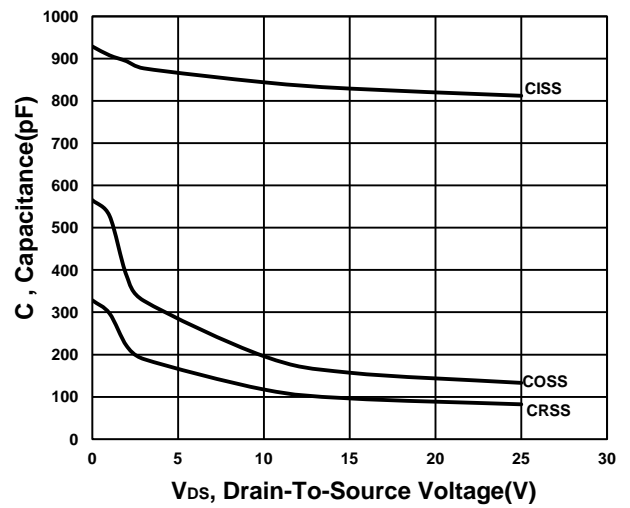
Transfer Characteristics



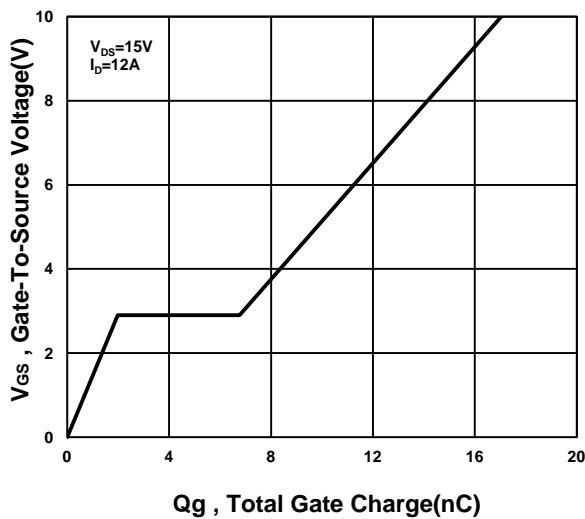
On-Resistance VS Temperature



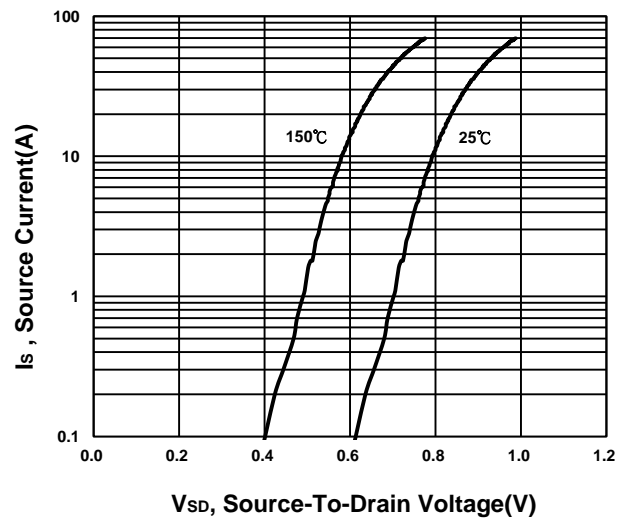
Capacitance Characteristic



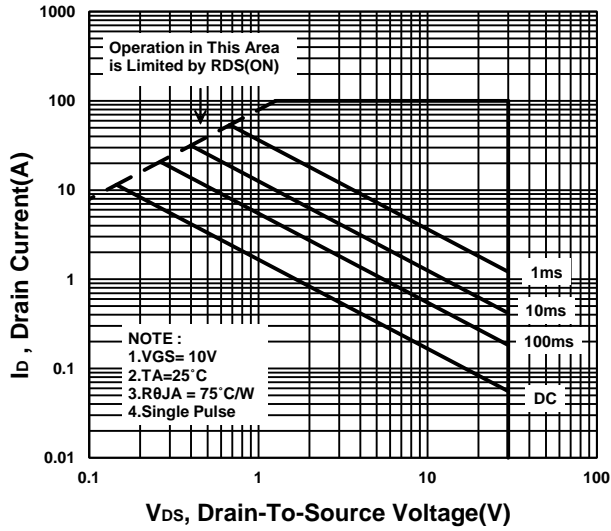
Gate charge Characteristics



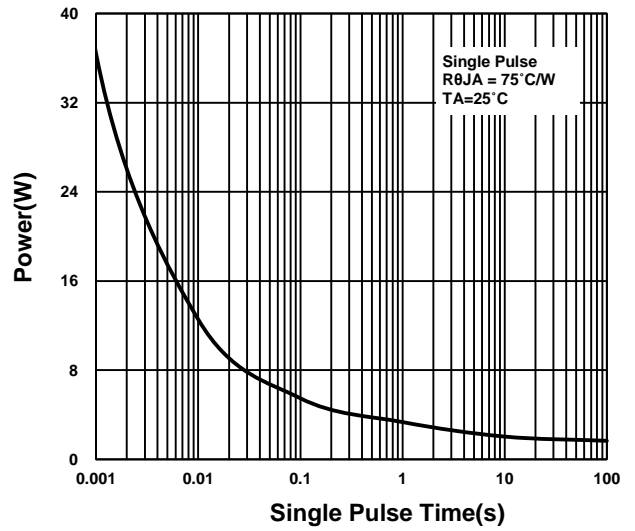
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

