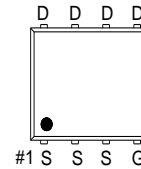
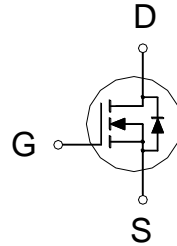




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	9mΩ	33A



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 ³	$T_C = 25\text{ °C}$	I_D	33	A
	$T_C = 100\text{ °C}$		21	
	$T_A = 25\text{ °C}$		10	
	$T_A = 70\text{ °C}$		8	
Pulsed Drain Current ¹		I_{DM}	100	
Avalanche Current		I_{AS}	20	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	20	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	17.8	W
	$T_C = 100\text{ °C}$		7	
	$T_A = 25\text{ °C}$		1.7	
	$T_A = 70\text{ °C}$		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 $T_A = 25\text{ °C}$.

³Package limitation current is 13A

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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.8	2.3	

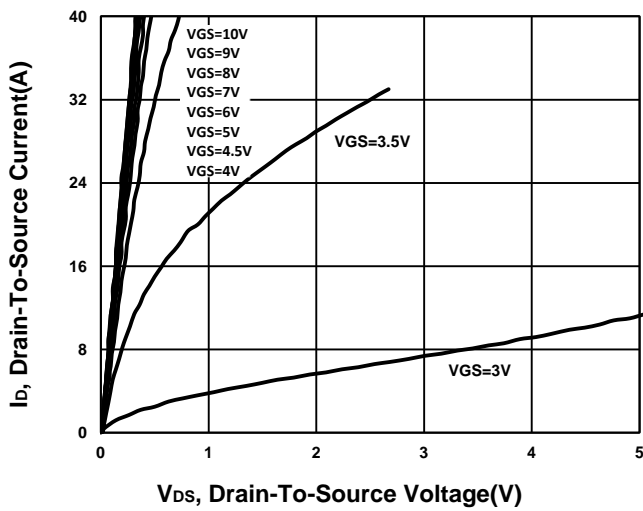
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ }^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		9.9	12	m Ω
		$V_{GS} = 10V, I_D = 10A$		7.4	9	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 10A$		34		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		774		μF
Output Capacitance	C_{oss}			139		
Reverse Transfer Capacitance	C_{rss}			81		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		3.1		Ω
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 15V, I_D = 10A$		15.5		nC
	$Q_{g(VGS=4.5V)}$			8.3		
Gate-Source Charge ²	Q_{gs}			2.2		
Gate-Drain Charge ²	Q_{gd}			4.4		
Turn-On Delay Time ²	$t_{d(on)}$		$V_{DD} = 15V$ $I_D \cong 10A, V_{GEN} = 10V, R_G = 6\Omega$		23	
Rise Time ²	t_r			20		
Turn-Off Delay Time ²	$t_{d(off)}$			40		
Fall Time ²	t_f			20		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^\circ C$)						
Continuous Current ³	I_S				14.8	A
Forward Voltage ¹	V_{SD}	$I_F = 10A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 10A, di_F/dt = 100A / \mu S$		9.5		nS
Reverse Recovery Charge	Q_{rr}			1.4		nC

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

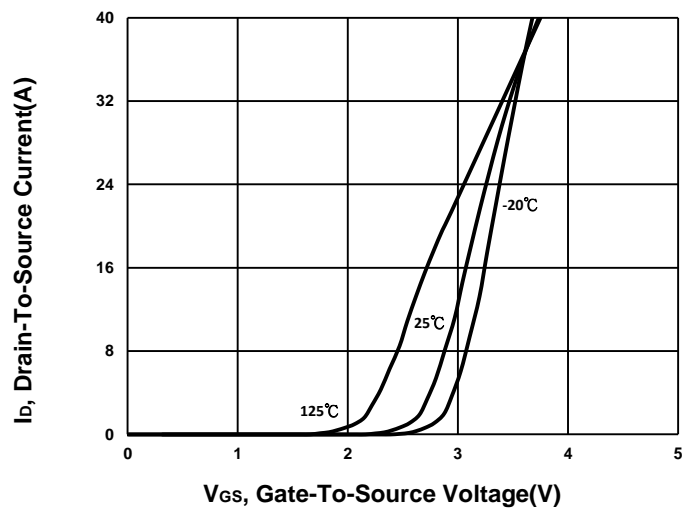
²Independent of operating temperature.

³Package limitation current is 13A

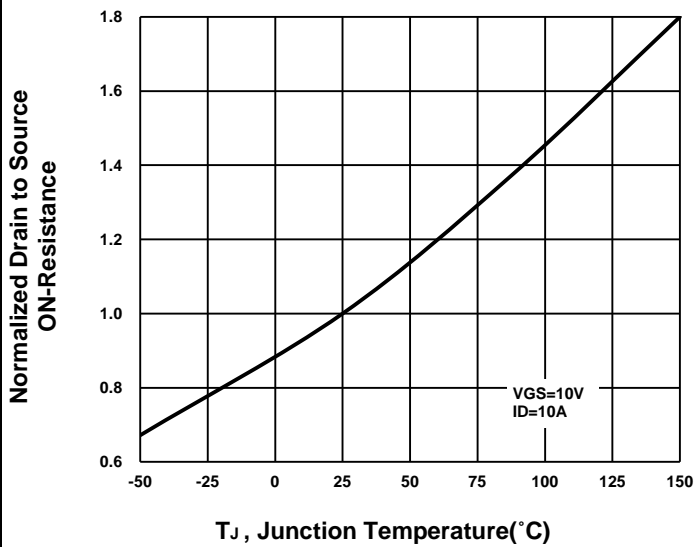
Output Characteristics



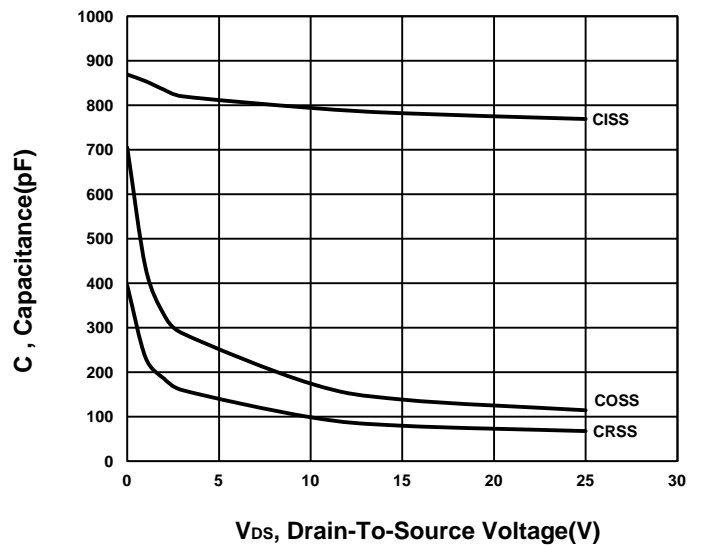
Transfer Characteristics



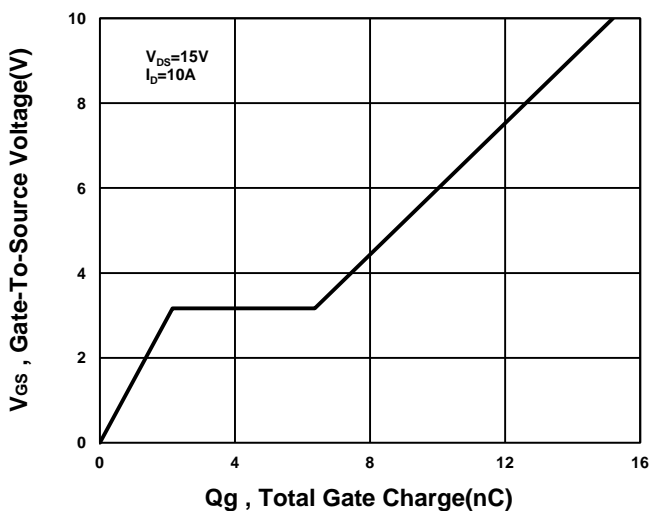
On-Resistance VS Temperature



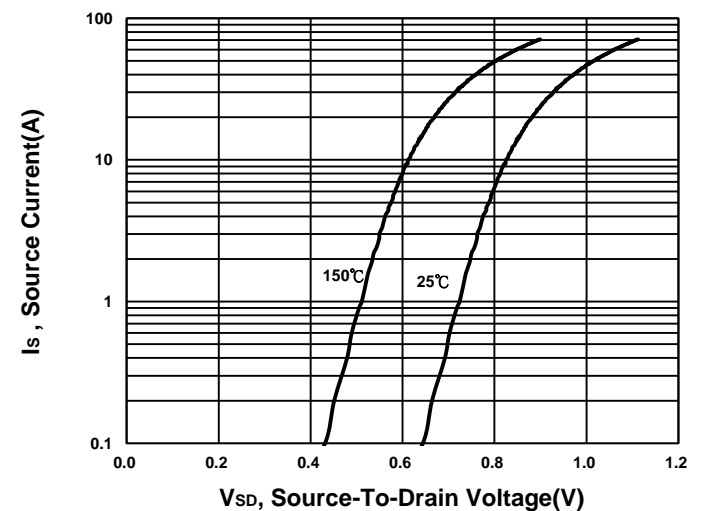
Capacitance Characteristic



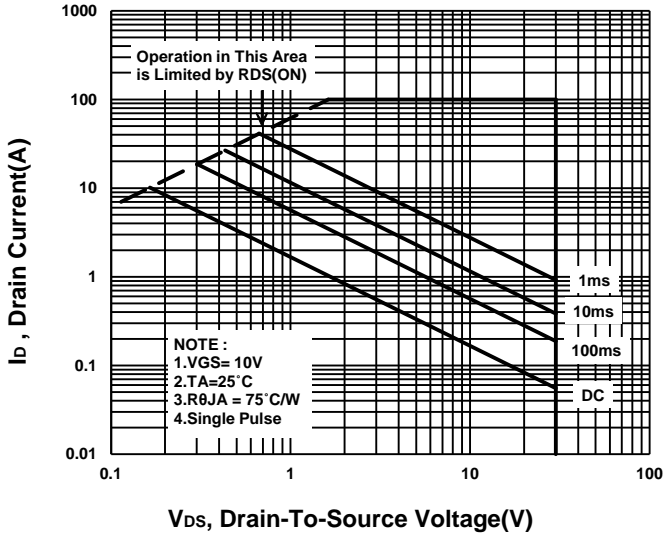
Gate charge Characteristics



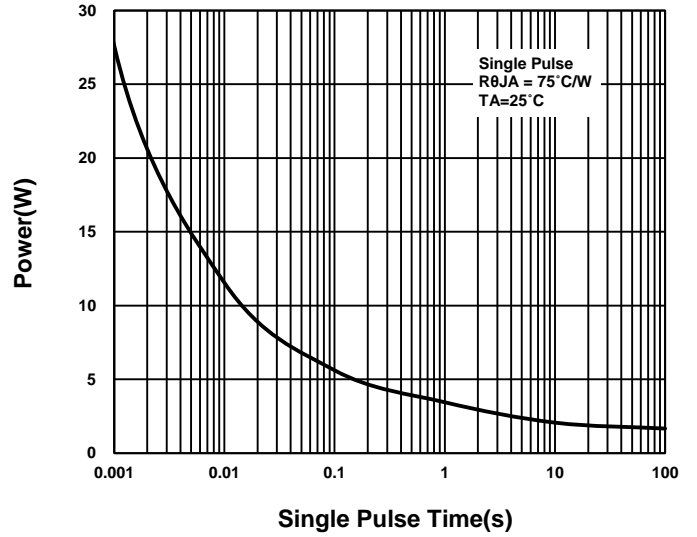
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

