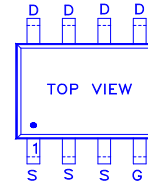
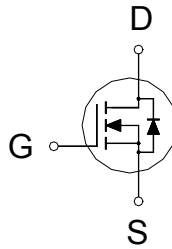




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	7.5mΩ	16A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	16	A
	$T_A = 70\text{ °C}$		13	
Pulsed Drain Current ¹		I_{DM}	80	
Avalanche Current		I_{AS}	57	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	162	mJ
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	4.1	W
	$T_A = 70\text{ °C}$		2.6	
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	$t \leq 10\text{s}$	$R_{\theta JA}$		30	°C / W
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		51	
Junction-to-Case	Steady-State	$R_{\theta JC}$		25	

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 $T_A = 25\text{ °C}$.

³The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	1.8	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			±100	nA

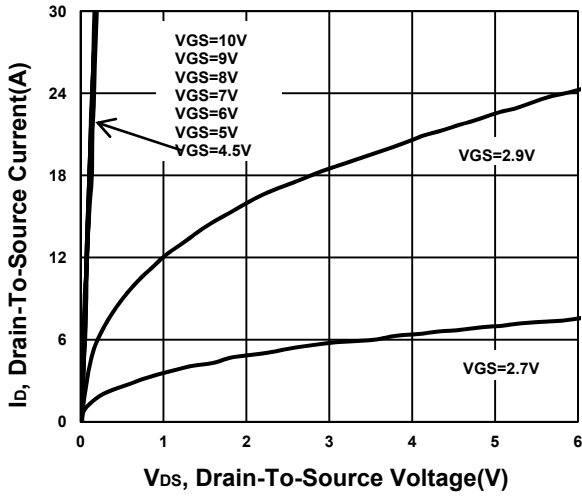
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
		$V_{DS} = 40V, V_{GS} = 0V, T_J = 125\text{ }^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$	4	5.8	8.5	$m\Omega$
		$V_{GS} = 10V, I_D = 15A$	3.5	5	7.5	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 15A$		54		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		3891		pF
Output Capacitance	C_{oss}			423		
Reverse Transfer Capacitance	C_{rss}			340		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		0.7		Ω
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 30V, I_D = 15A$		100		nC
	$Q_{g(VGS=4.5V)}$			54		
Gate-Source Charge ²	Q_{gs}			11		
Gate-Drain Charge ²	Q_{gd}			31		
Turn-On Delay Time ²	$t_{d(on)}$		$V_{DS} = 30V$ $I_D \cong 15A, V_{GS} = 10V, R_{GEN} = 6\Omega$		28	
Rise Time ²	t_r			50		
Turn-Off Delay Time ²	$t_{d(off)}$			136		
Fall Time ²	t_f			81		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^\circ C$)						
Continuous Current ³	I_S				3.4	A
Forward Voltage ¹	V_{SD}	$I_F = 15A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 15A, dI_F/dt = 100A / \mu S$		34		nS
Reverse Recovery Charge	Q_{rr}			25		nC

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

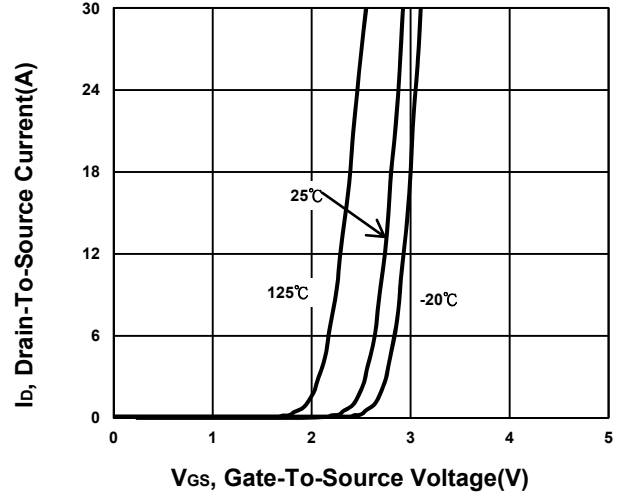
²Independent of operating temperature.

³Package limitation current is 37A

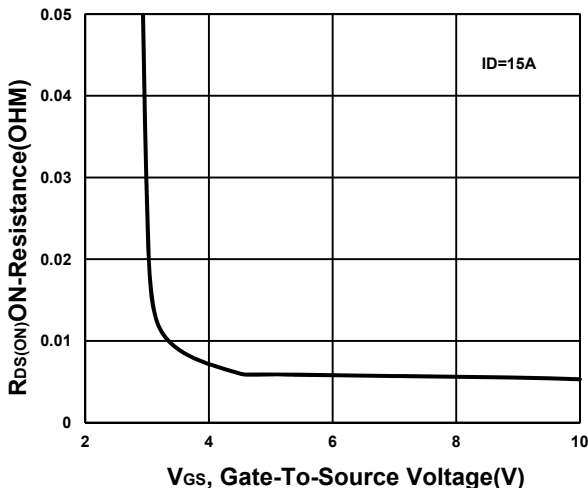
Output Characteristics



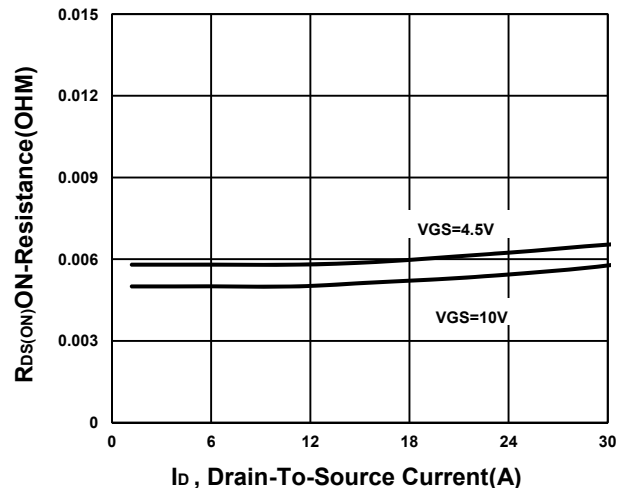
Transfer Characteristics



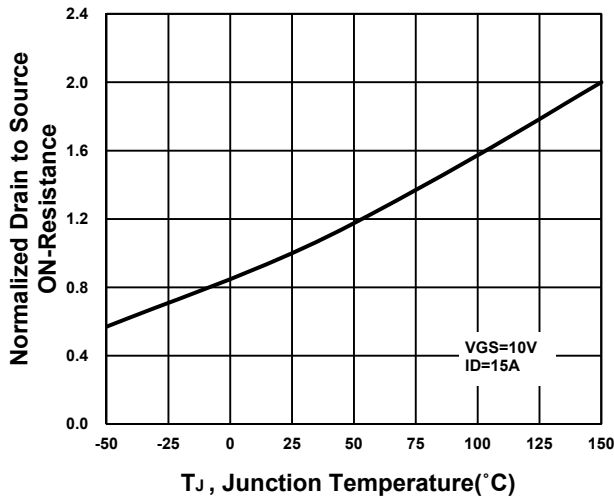
On-Resistance VS Gate-To-Source



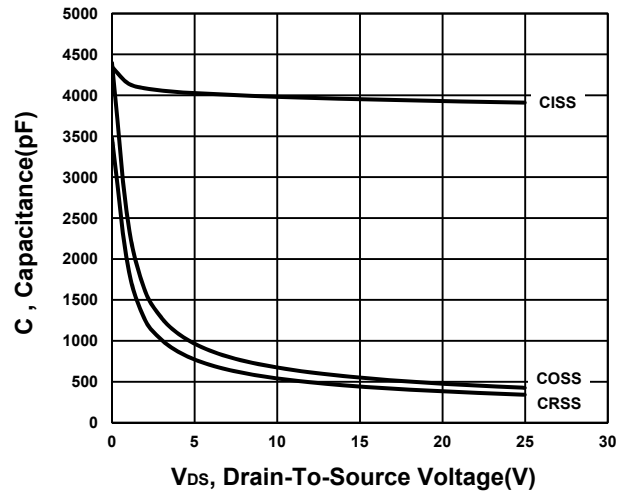
On-Resistance VS Drain Current



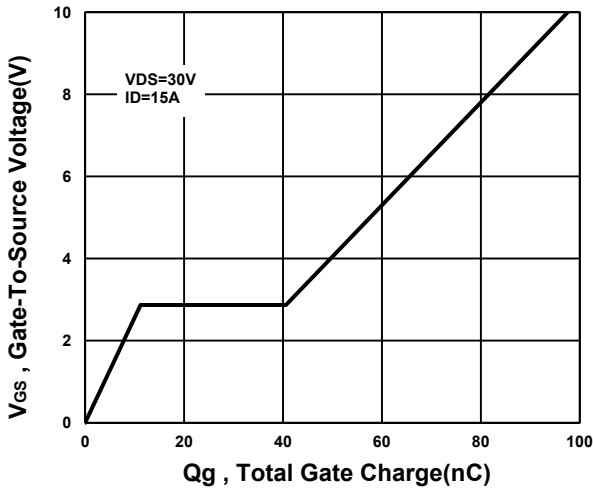
On-Resistance VS Temperature



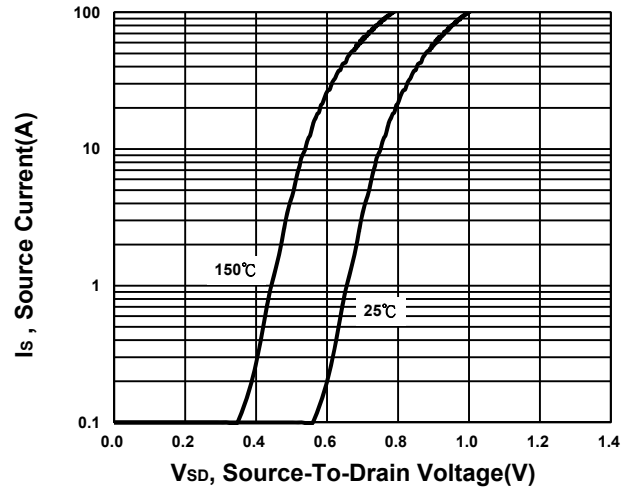
Capacitance Characteristic



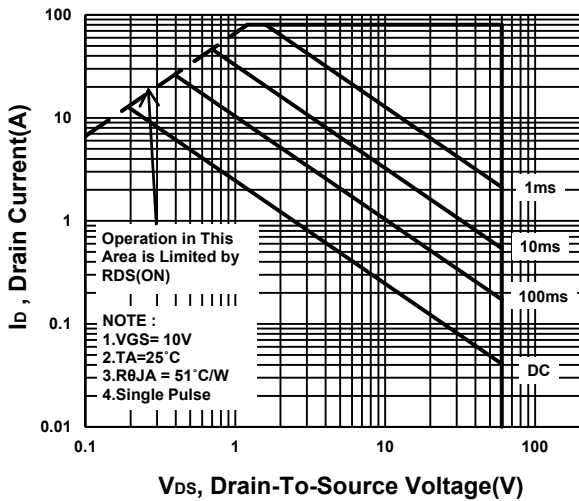
Gate charge Characteristics



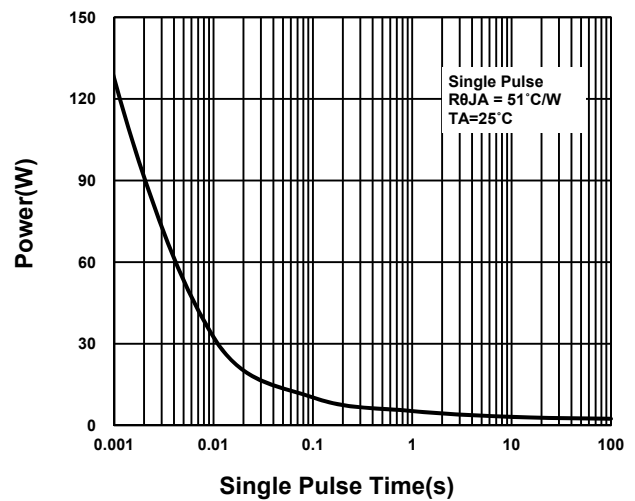
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

