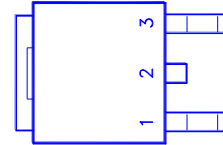
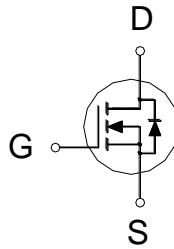




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	85mΩ	15A



- 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}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	15	A
	$T_C = 100\text{ °C}$		9	
Pulsed Drain Current ¹		I_{DM}	35	
Avalanche Current		I_{AS}	12	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	7.2	mJ
MOSFET dV/dt Ruggedness		dV/dt	16.2	V/nS
Peak Diode Recovery dV/dt ²			4.1	
Power Dissipation	$T_C = 25\text{ °C}$	P_D	46	W
	$T_C = 100\text{ °C}$		18	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.7	°C / W

¹Pulse width limited by maximum junction temperature.

² $I_D=15\text{A}, di/dt=100\text{A/uS}, V_{DD}<BV_{dss}, \text{Starting } T_j=25\text{ °C}$

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

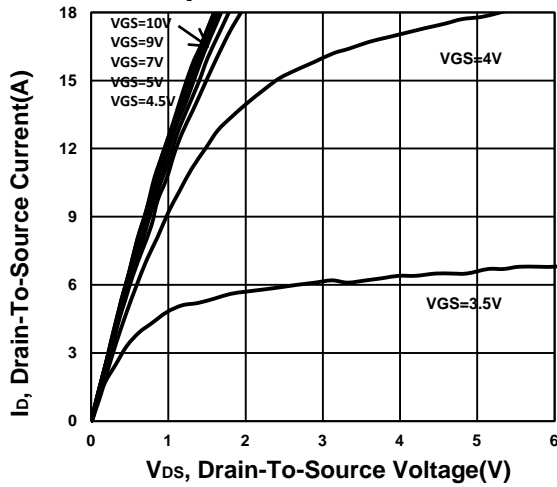
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	1.8	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ °C}$			10	

On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	35			A
Drain-Source On-State Resistance ₁	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		67	95	mΩ
		$V_{GS} = 10V, I_D = 15A$		61	85	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 15A$		25		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		527		pF
Output Capacitance	C_{oss}			68		
Reverse Transfer Capacitance	C_{rss}			37		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.5		Ω
Total Gate Charge ²	Q_g	$V_{GS} = 10V, V_{DS} = 0.5V_{(BR)DSS}, I_D = 15A$		18.5		nC
Gate-Source Charge ²	Q_{gs}			2.7		
Gate-Drain Charge ²	Q_{gd}			5.1		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 40V, I_D \cong 15A, V_{GS} = 10V, R_{GEN} = 6\Omega$		11		nS
Rise Time ²	t_r			48		
Turn-Off Delay Time ²	$t_{d(off)}$			80		
Fall Time ²	t_f			73		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				15	A
Forward Voltage ¹	V_{SD}	$I_F = 15A, V_{GS} = 0V$			1.1	V
Reverse Recovery Time	t_{rr}	$I_F = 15A, di_F/dt = 100A / \mu S$		33		nS
Reverse Recovery Charge	Q_{rr}				35	

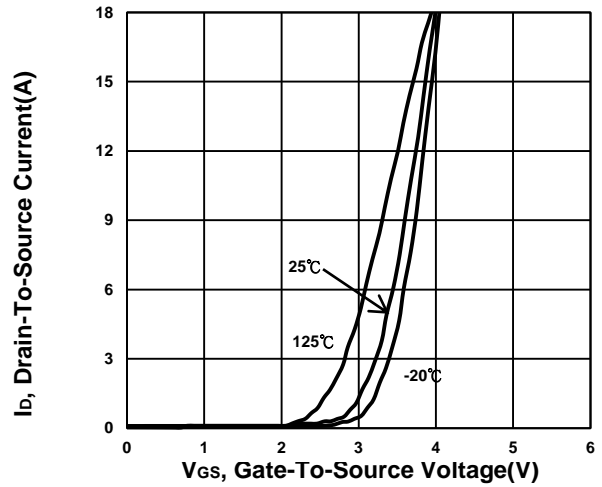
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

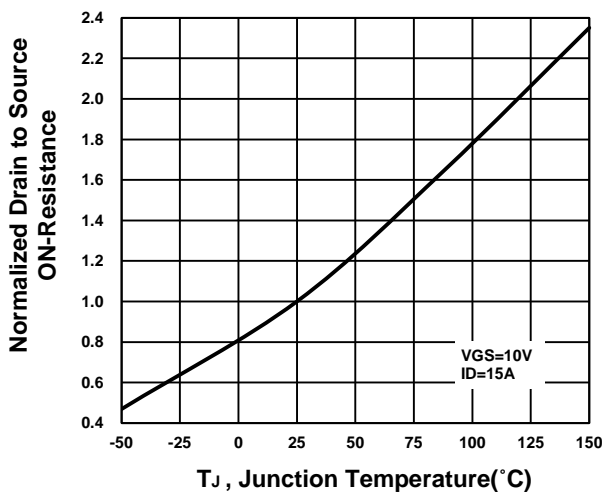
Output Characteristics



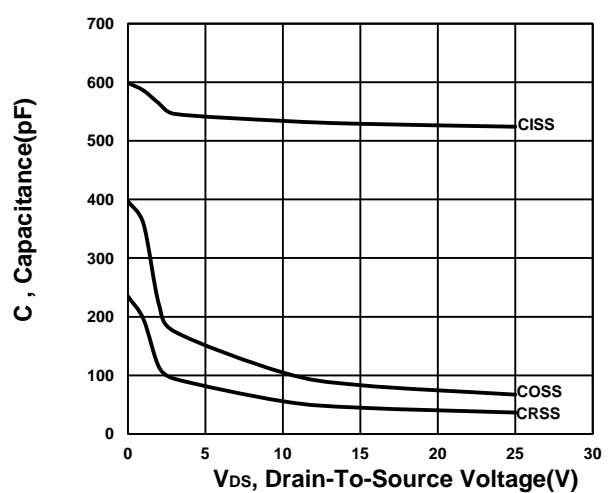
Transfer Characteristics



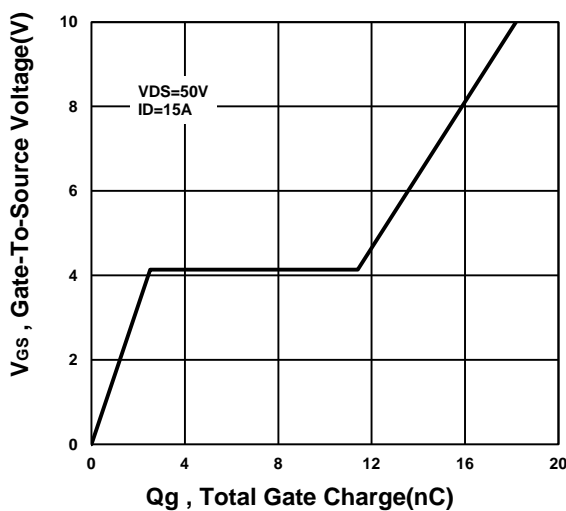
On-Resistance VS Temperature



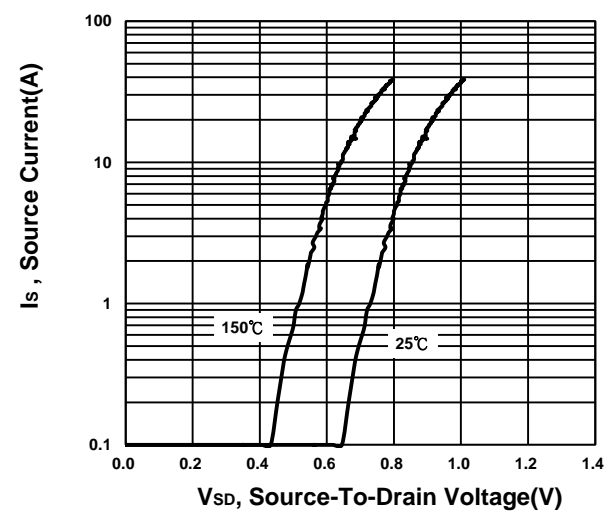
Capacitance Characteristic



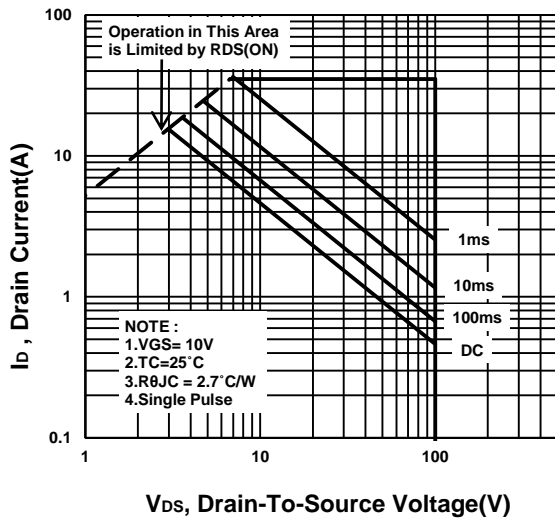
Gate charge Characteristics



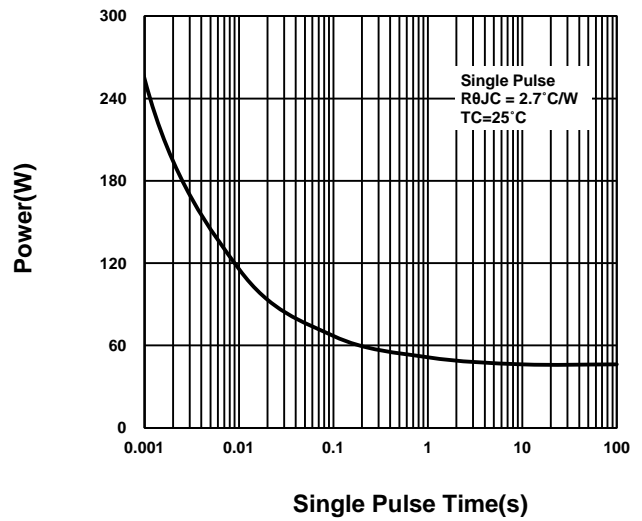
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

