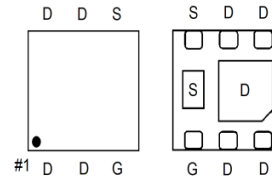
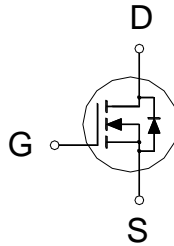


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	12mΩ	9A



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	$T_A = 25\text{ °C}$	I_D	9	A
	$T_A = 70\text{ °C}$		7.2	
Pulsed Drain Current ¹		I_{DM}	27	
Avalanche Current		I_{AS}	12.6	
Avalanche Energy	L = 0.1mH	E_{AS}	7.9	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.7	W
	$T_A = 70\text{ °C}$		1.1	
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	$R_{\theta JA}$		71.7	°C/W

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. Coppe.

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

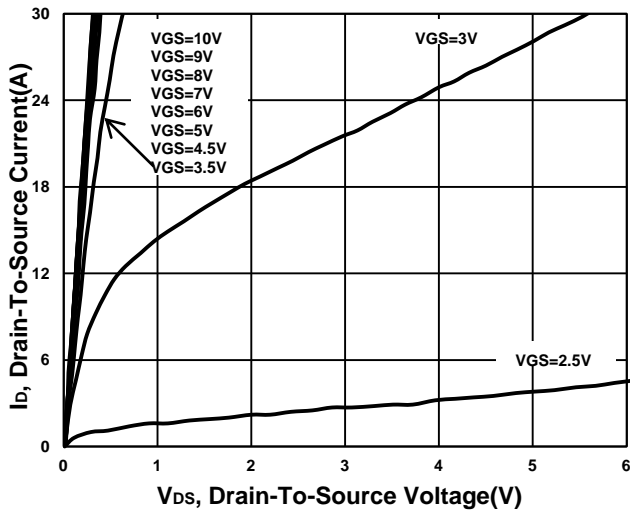
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.7	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ °C}$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 9A$		11	17.5	mΩ
		$V_{GS} = 10V, I_D = 9A$		9	12	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 9A$		45		S

DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		706		pF
Output Capacitance	C_{oss}			103		
Reverse Transfer Capacitance	C_{rss}			74		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		3.1		Ω
Total Gate Charge ²	$Q_g(V_{GS}=10V)$	$V_{DS} = 15V, I_D = 9A$		15		nC
	$Q_g(V_{GS}=4.5V)$			8		
Gate-Source Charge ²	Q_{gs}			2.6		
Gate-Drain Charge ²	Q_{gd}			3.6		
Turn-On Delay Time ²	$t_{d(on)}$		$V_{DD} = 15V$ $I_D \cong 9A, V_{GEN} = 10V, R_G = 6\Omega$		13	
Rise Time ²	t_r			37		
Turn-Off Delay Time ²	$t_{d(off)}$			48		
Fall Time ²	t_f			25		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^\circ\text{C}$)						
Continuous Current	I_S				1.5	A
Forward Voltage ¹	V_{SD}	$I_F = 9A, V_{GS} = 0V$			1.1	V
Reverse Recovery Time	t_{rr}	$I_F = 9A, di_F/dt = 100A / \mu S$		11		nS
Reverse Recovery Charge	Q_{rr}			3		nC

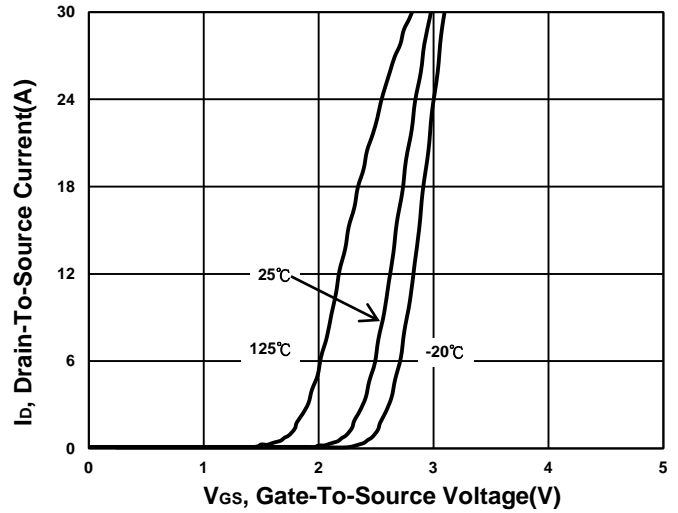
¹Pulse test : Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

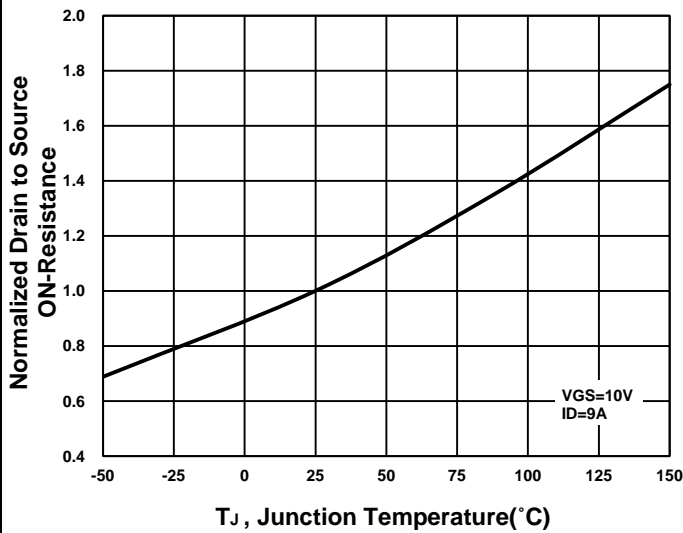
Output Characteristics



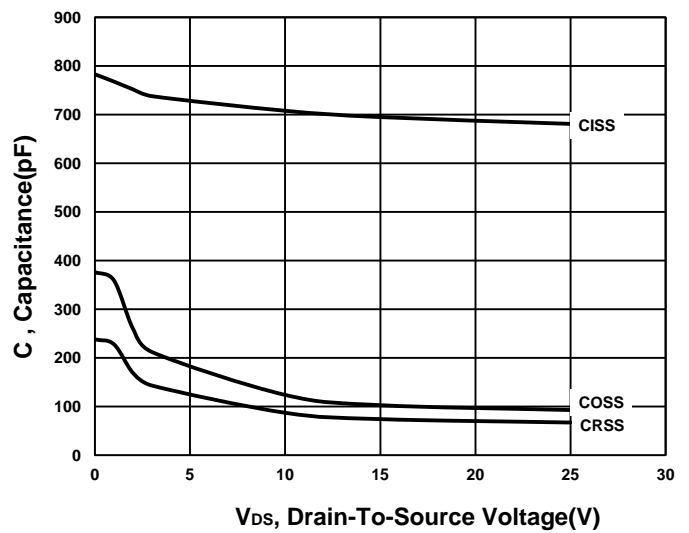
Transfer Characteristics



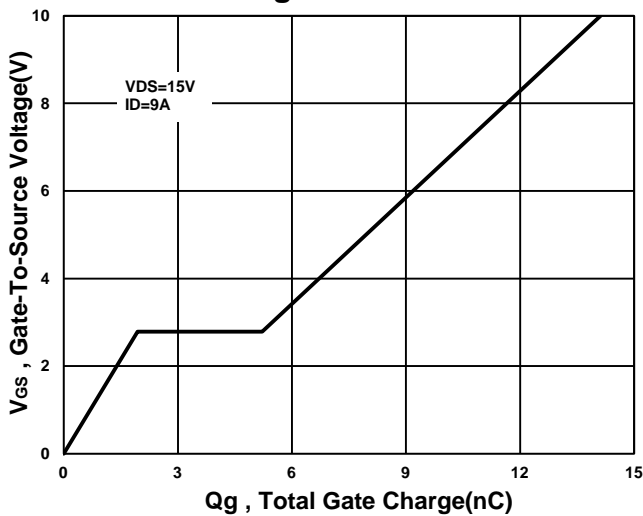
On-Resistance VS Temperature



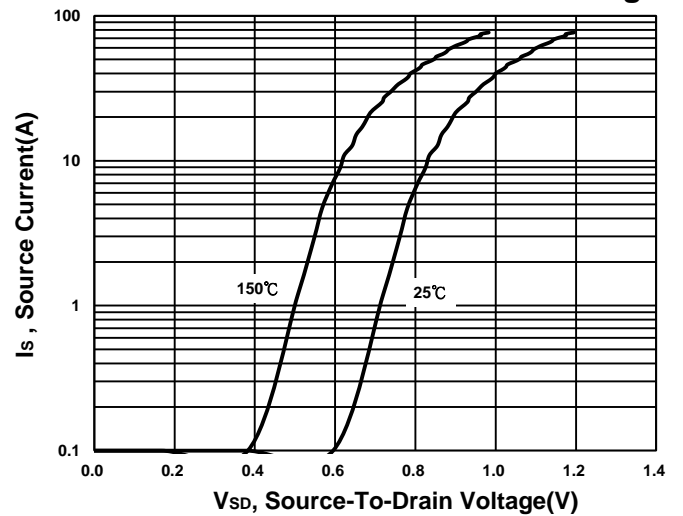
Capacitance Characteristic



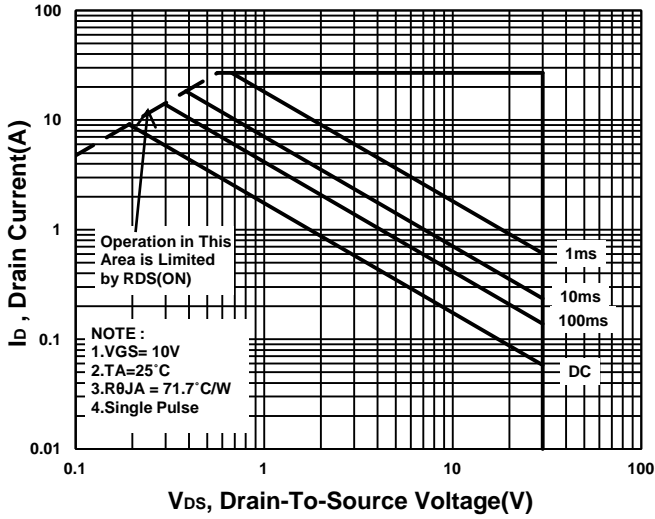
Gate charge Characteristics



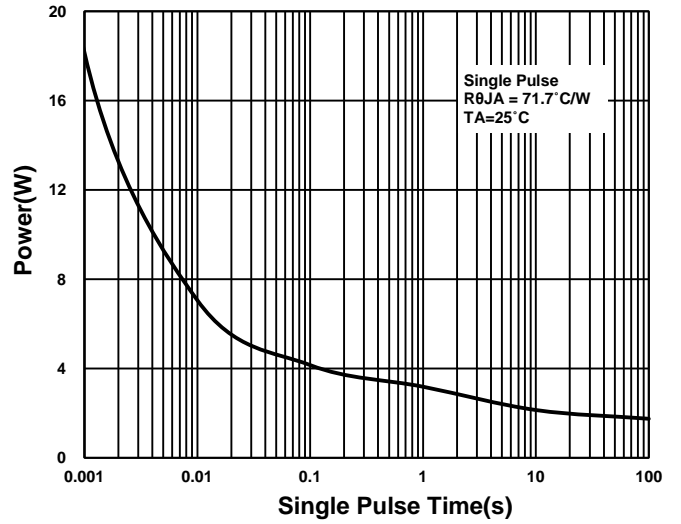
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

