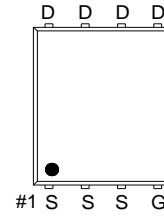
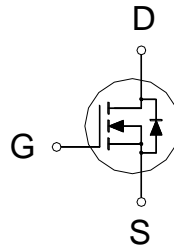




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	29.8m Ω	25A



G. GATE
D. DRAIN
S. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ 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	$T_C = 25\text{ }^\circ\text{C}$	I_D	25	A
	$T_C = 100\text{ }^\circ\text{C}$		16	
Pulsed Drain Current ¹		I_{DM}	58	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	6.1	
	$T_A = 70\text{ }^\circ\text{C}$		4.9	
Avalanche Current		I_{AS}	4	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	8	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	43	W
	$T_C = 100\text{ }^\circ\text{C}$		17	
Power Dissipation ³	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.4	W
	$T_A = 70\text{ }^\circ\text{C}$		1.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		52	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		72	
Junction-to-Case	Steady-State	$R_{\theta JC}$		2.9	

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 $T_A = 25^\circ\text{C}$.

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

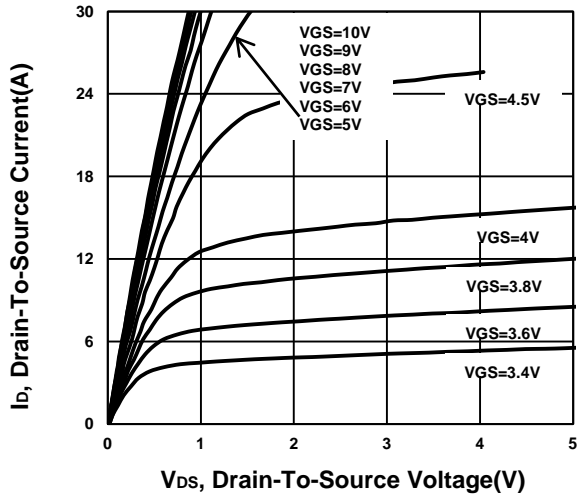
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.4	2	3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
		V _{DS} = 100V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 14A		24.7	29.8	mΩ
		V _{GS} = 4.5V, I _D = 10A		40.9	49.8	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 14A		20		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 50V, f = 1MHz		800		pF
Output Capacitance	C _{oss}			73		
Reverse Transfer Capacitance	C _{rss}			9.2		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1		Ω
Total Gate Charge ²	Q _g	V _{GS} = 10V	V _{DS} = 50V, V _{GS} = 10V, I _D = 14A	15.3		nC
		V _{GS} = 4.5V		8.8		
Gate-Source Charge ²	Q _{gs}	3.1				
Gate-Drain Charge ²	Q _{gd}	5.2				
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 50V , I _D ≅ 14A, V _{GS} = 10V, R _{GEN} = 6Ω		10		
Rise Time ²	t _r		43			
Turn-Off Delay Time ²	t _{d(off)}		21			
Fall Time ²	t _f		61			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				36	A
Forward Voltage ¹	V _{SD}	I _F = 14A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 14A, di _F /dt = 100A / μS		28		nS
Reverse Recovery Charge	Q _{rr}			15		nC

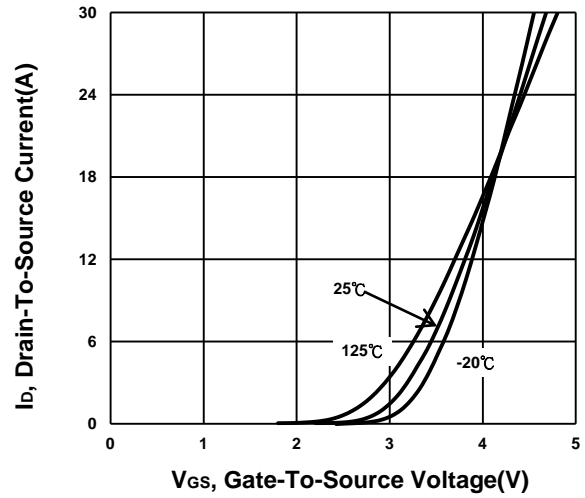
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

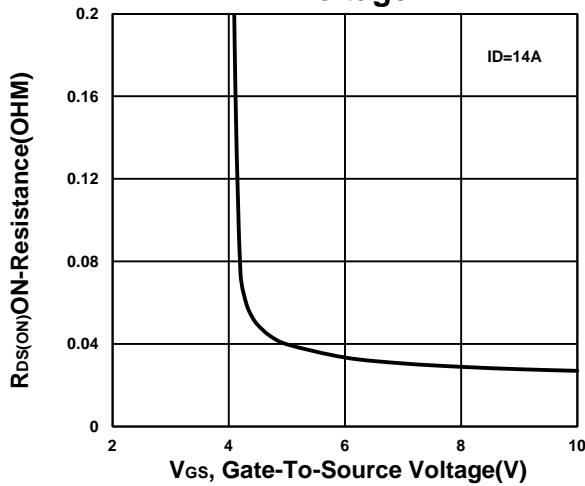
Output Characteristics



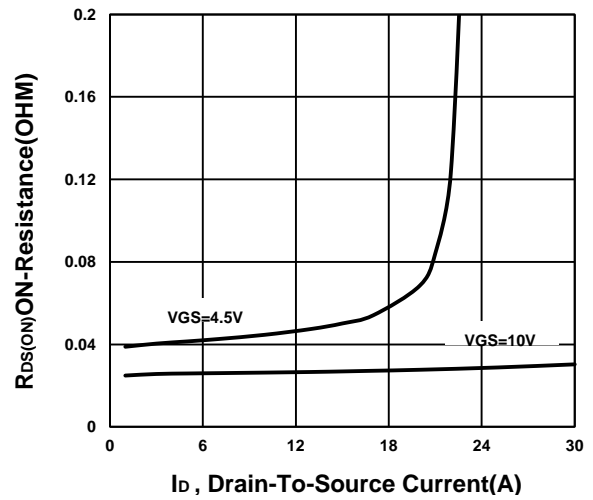
Transfer Characteristics



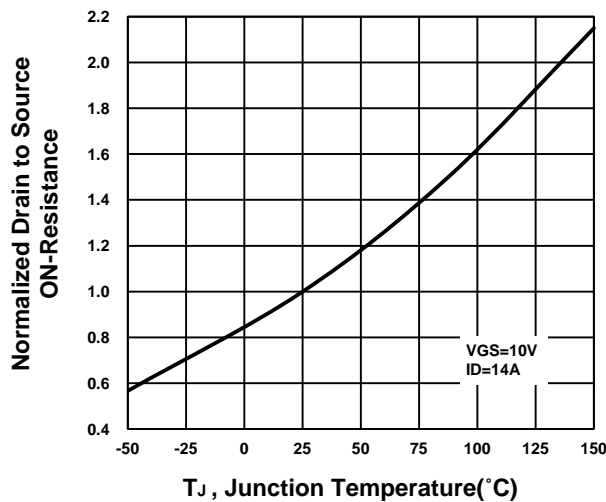
On-Resistance VS Gate-To-Source Voltage



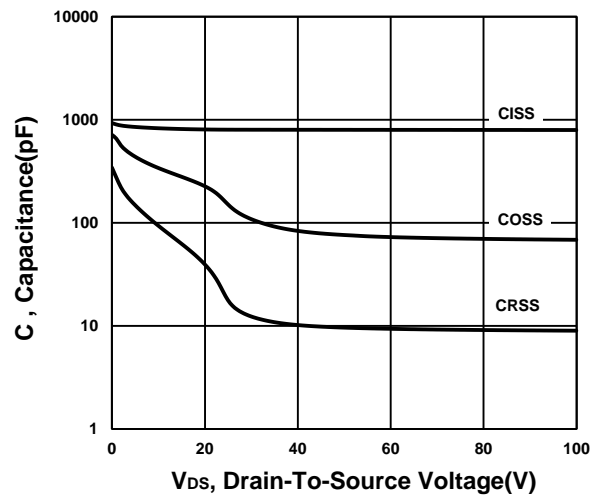
On-Resistance VS Drain Current



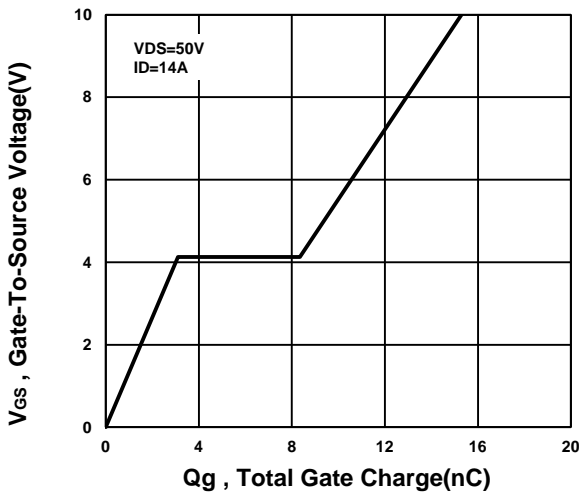
On-Resistance VS Temperature



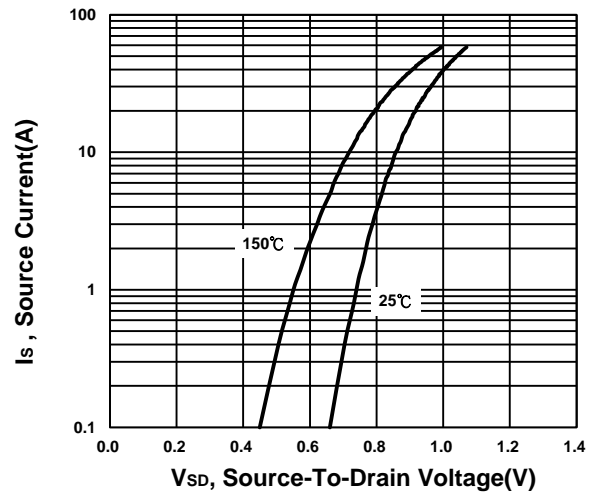
Capacitance Characteristic



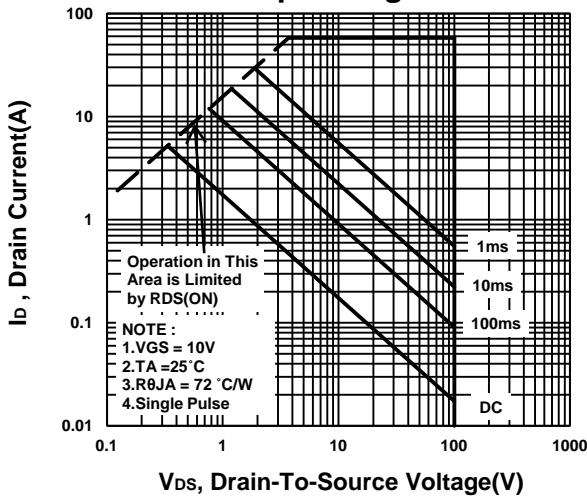
Gate charge Characteristics



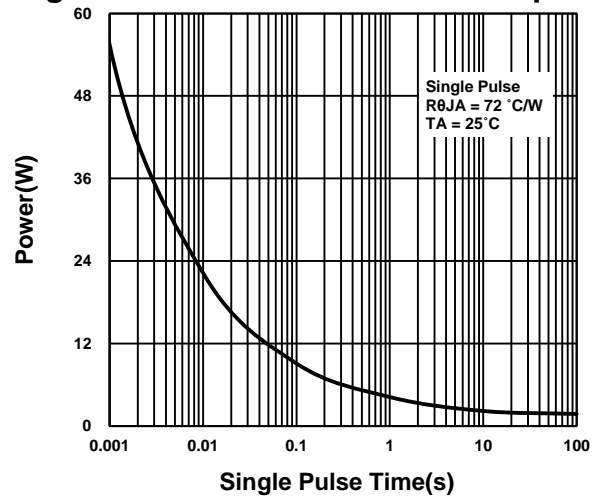
Source-Drain Diode Forward Voltage



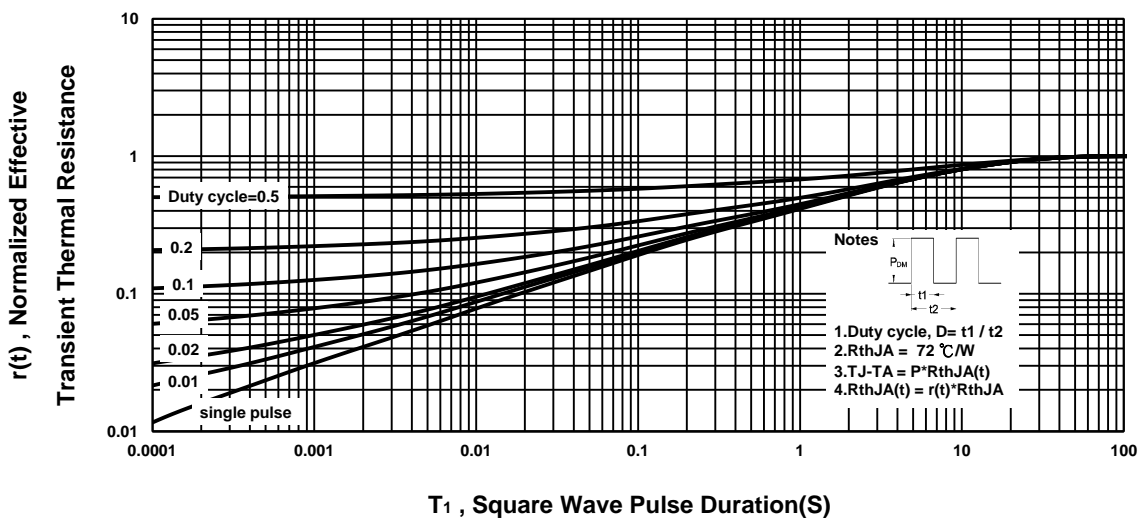
Safe Operating Area



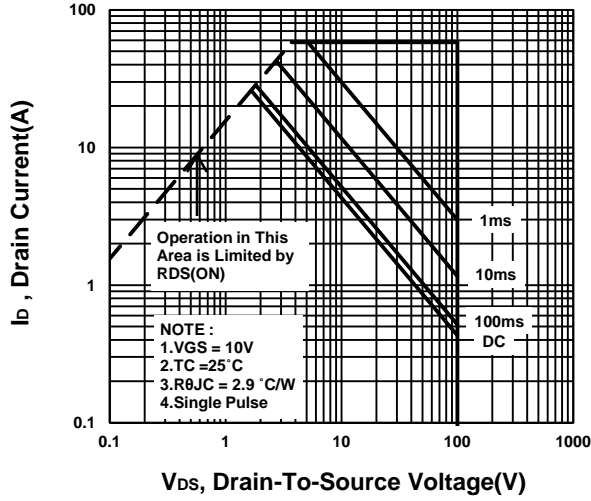
Single Pulse Maximum Power Dissipation



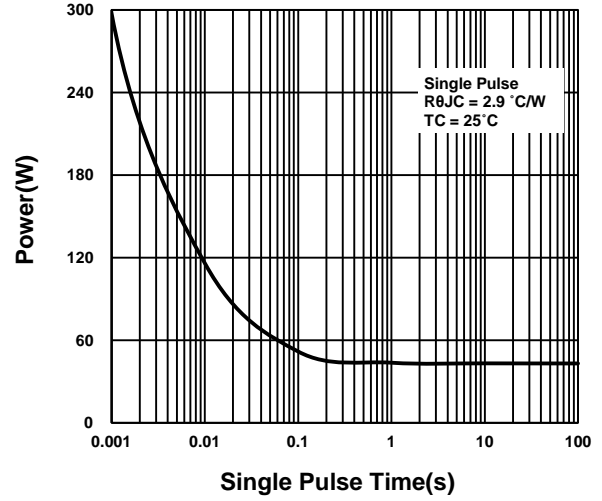
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

