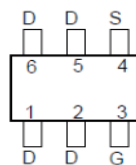
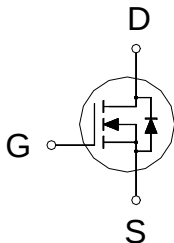


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	20m Ω	6A



G: GATE
D: DRAIN
S: SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	6	A
	$T_A = 70^\circ\text{C}$		4.7	
Pulsed Drain Current ¹		I_{DM}	30	
Avalanche Current		I_{AS}	17	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	15	mJ
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	1.1	W
	$T_A = 70^\circ\text{C}$		0.7	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATING

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		40	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ²	$R_{\theta JA}$		110	

¹ Pulse width limited by maximum junction temperature.

² The 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 $T_A = 25^\circ\text{C}$.

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$, Unless Otherwise Noted)

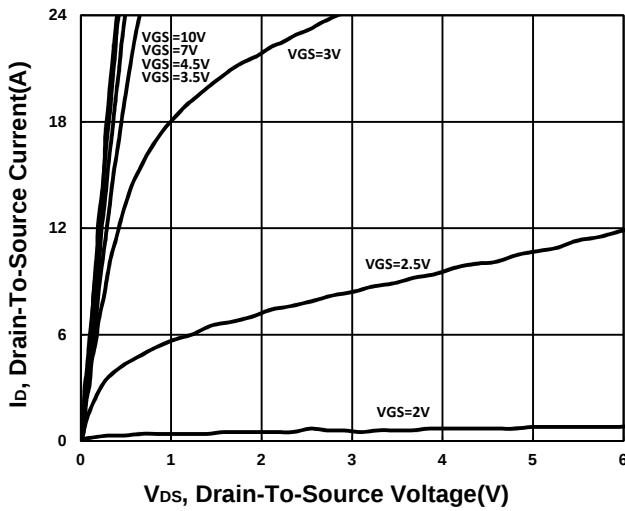
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.4	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 6A$		15.3	20	m Ω
		$V_{GS} = 4.5V, I_D = 6A$		18.2	25	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 6A$		41		S

DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		496		pF
Output Capacitance	C _{oss}			81		
Reverse Transfer Capacitance	C _{rss}			73		
Total Gate Charge ²	Q _{g(VGS=10V)}	V _{DS} =15V, I _D = 6A		14.4		nC
	Q _{g(VGS=4.5V)}			8		
Gate-Source Charge ²	Q _{gs}			1.6		
Gate-Drain Charge ²	Q _{gd}			3.9		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 15V, I _D ≅ 6A, V _{GS} = 10V, R _{GEN} = 6Ω		12		nS
Rise Time ²	t _r			10		
Turn-Off Delay Time ²	t _{d(off)}			27		
Fall Time ²	t _f			10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current ²	I _S				6	A
Forward Voltage ¹	V _{SD}	I _F = 6A, V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F = 6A, dI _F /dt = 100A / μS V _{GS} = 0V		10.7		nS
Reverse Recovery Charge	Q _{rr}			2.6		nC

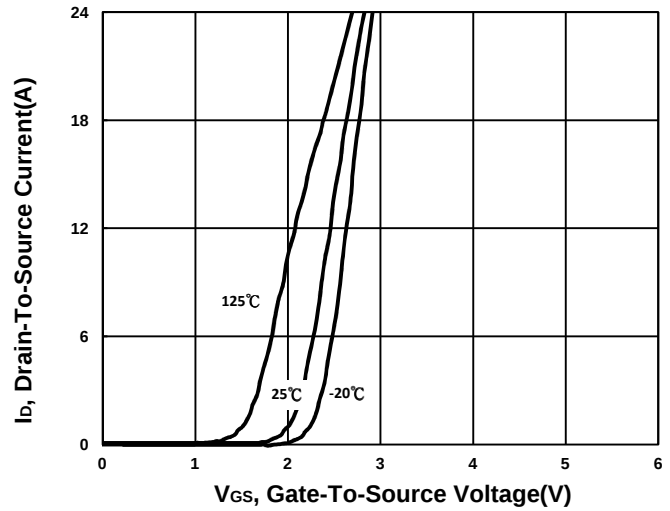
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

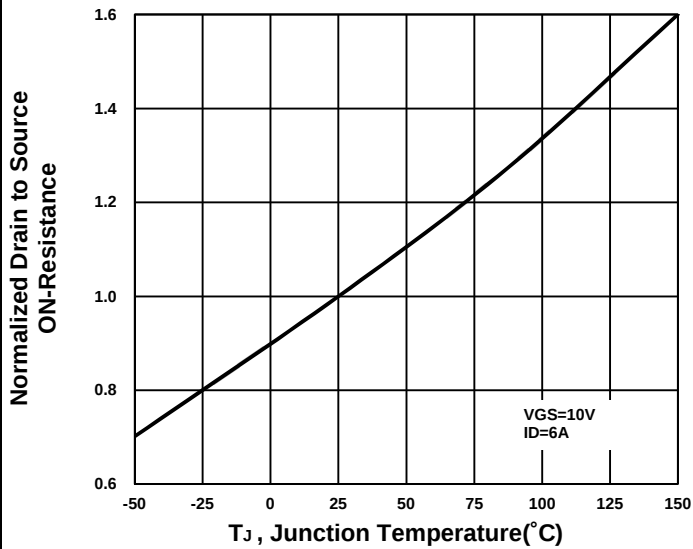
Output Characteristics



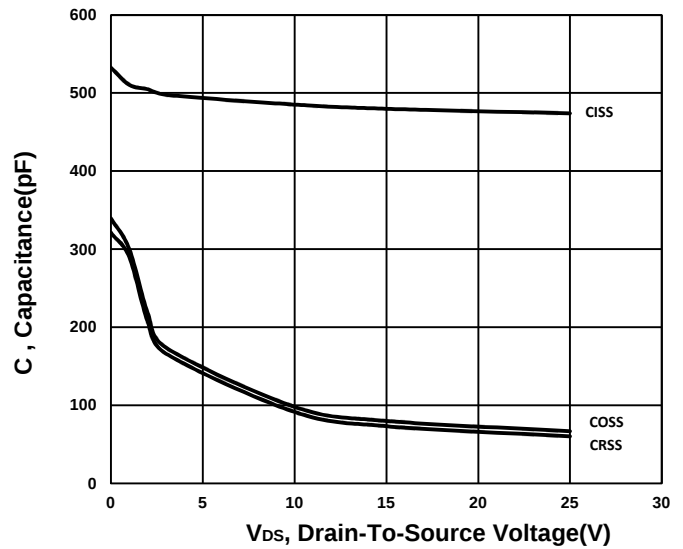
Transfer Characteristics



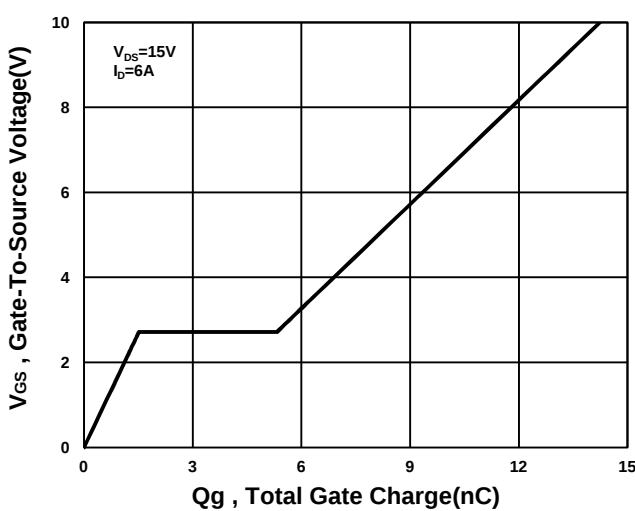
On-Resistance VS Temperature



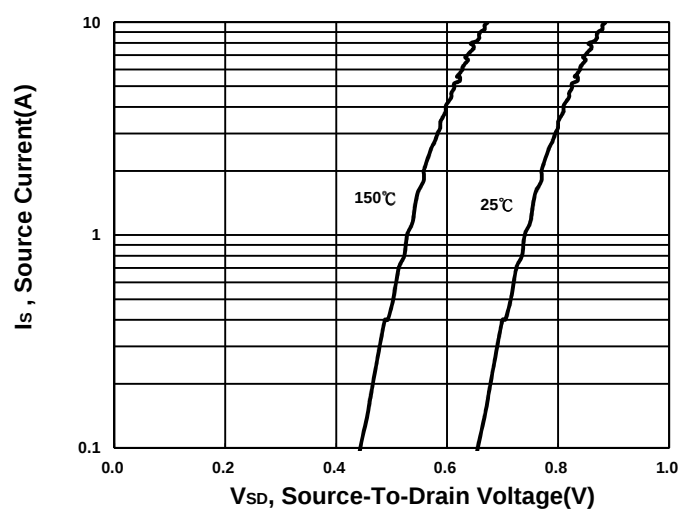
Capacitance Characteristic



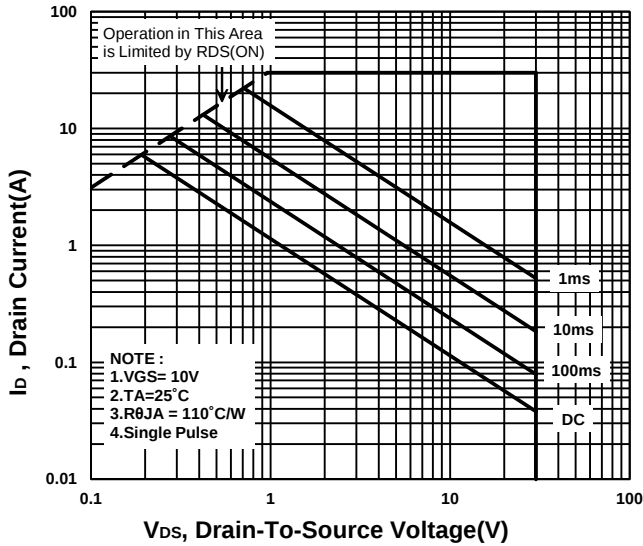
Gate charge Characteristics



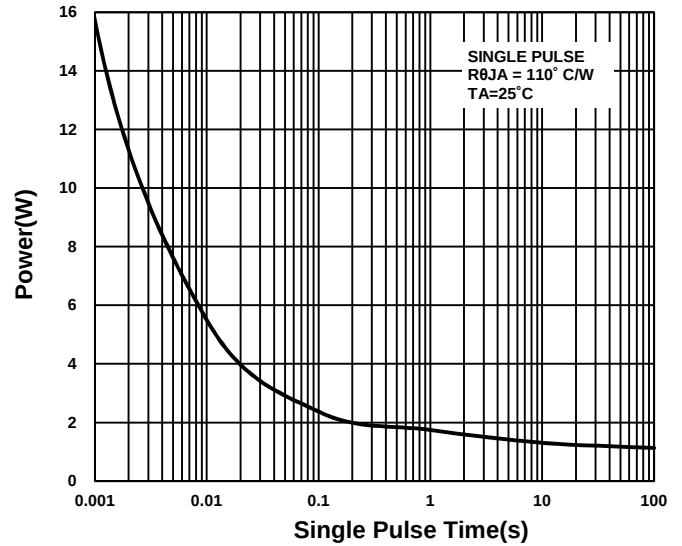
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

