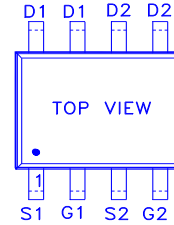
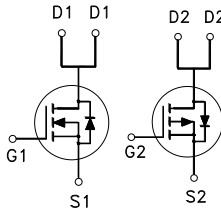




PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
N-Channel	30V	22m Ω	7A
P-Channel	-30V	28m Ω	-6.4A



G : GATE
D : DRAIN
S : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	N-Channel	P-Channel	UNITS
Drain-Source Voltage		V_{DS}	30	-30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	7	-6.4	A
	$T_A = 70^\circ\text{C}$		5.6	-5.1	
Pulsed Drain Current ¹		I_{DM}	25	-23	
Avalanche Current		I_{AS}	12	-19.9	
Avalanche Energy	L = 0.1mH	E_{AS}	7.2	19.8	mJ
Power Dissipation ³	$T_A = 25^\circ\text{C}$	P_D	2	2	W
	$T_A = 70^\circ\text{C}$		1.3	1.3	
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	$t \leq 10\text{s}$	$R_{\theta JA}$	N-ch		60	$^\circ\text{C} / \text{W}$
	Steady-State				77	
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$	P-ch		60	
	Steady-State				85	

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	N-Ch	30		V	
		V _{GS} = 0V, I _D = -250μA	P-Ch	-30			
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	N-Ch	1	1.75	2.5	V
		V _{DS} = V _{GS} , I _D = -250μA	P-Ch	-1	-1.5	-2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	N-Ch			±100	nA
		V _{DS} = 0V, V _{GS} = ±20V	P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	N-Ch			1	μA
		V _{DS} = -24V, V _{GS} = 0V	P-Ch			-1	
		V _{DS} = 20V, V _{GS} = 0V, T _J = 55 °C	N-Ch			10	
		V _{DS} = -20V, V _{GS} = 0V, T _J = 55 °C	P-Ch			-10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 6A	N-Ch		22	32	mΩ
		V _{GS} = -4.5V, I _D = -5A	P-Ch		32	45	
		V _{GS} = 10V, I _D = 7A	N-Ch		16	22	
		V _{GS} = -10V, I _D = -6A	P-Ch		22	28	
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 7A	N-Ch		30		S
		V _{DS} = -10V, I _D = -6A	P-Ch		17		

DYNAMIC						
Input Capacitance	C _{iss}		N-Ch P-Ch		300 817	
Output Capacitance	C _{oss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	N-Ch		65	pF
			P-Ch		138	
Reverse Transfer Capacitance	C _{rss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	N-Ch		43	
			P-Ch		113	
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz	N-Ch		2.3	Ω
			P-Ch		12	

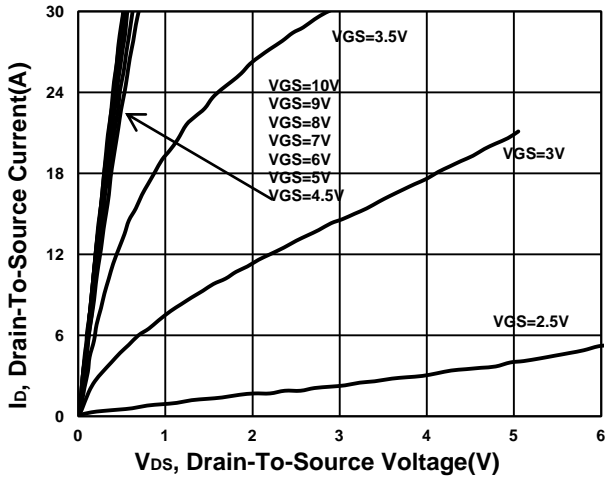
Total Gate Charge ²	Q_g	N-Channel $V_{DS} = 15V, V_{GS} = 10V,$ $I_D = 7A$ P-Channel $V_{DS} = -15V, V_{GS} = -10V,$ $I_D = -6A$	N-Ch		7.4		nC
Gate-Source Charge ²	Q_{gs}		P-Ch		20		
Gate-Drain Charge ²	Q_{gd}		N-Ch		0.8		
Turn-On Delay Time ²	$t_{d(on)}$	N-Channel $V_{DS} = 15V,$ $I_D \cong 7A, V_{GS} = 10V, R_{GEN} = 6\Omega$ P-Channel $V_{DS} = -15V,$ $I_D \cong -6A, V_{GS} = -10V,$ $R_{GEN} = 6\Omega$	N-Ch		15		nS
Rise Time ²	t_r		P-Ch		20.8		
Turn-Off Delay Time ²	$t_{d(off)}$		N-Ch		15		
Fall Time ²	t_f		P-Ch		16.6		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S		N-Ch			1.8	A
			P-Ch			-2	
Forward Voltage ¹	V_{SD}		N-Ch			1.1	V
			P-Ch			-1	
Reverse Recovery Time	t_{rr}	$I_F = 7A, di_F/dt = 100A / \mu S$	N-Ch		9.5		nS
			P-Ch		12.2		
Reverse Recovery Charge	Q_{rr}	$I_F = -6A, di_F/dt = 100A / \mu S$	N-Ch		3		nC
			P-Ch		3.5		

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

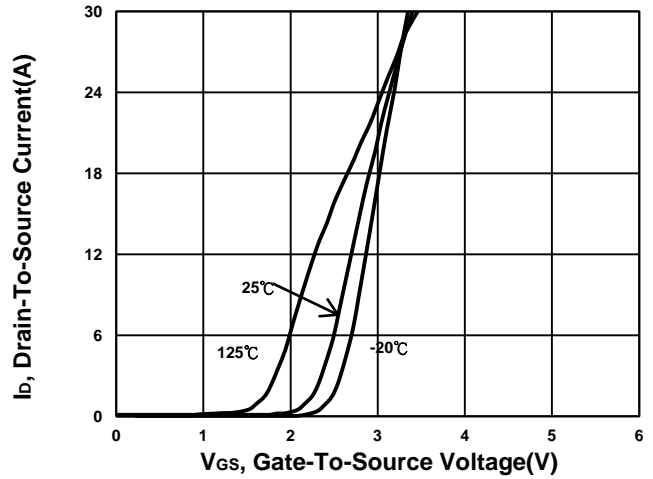
²Independent of operating temperature.

**TYPICAL PERFORMANCE CHARACTERISTICS
N-CHANNEL**

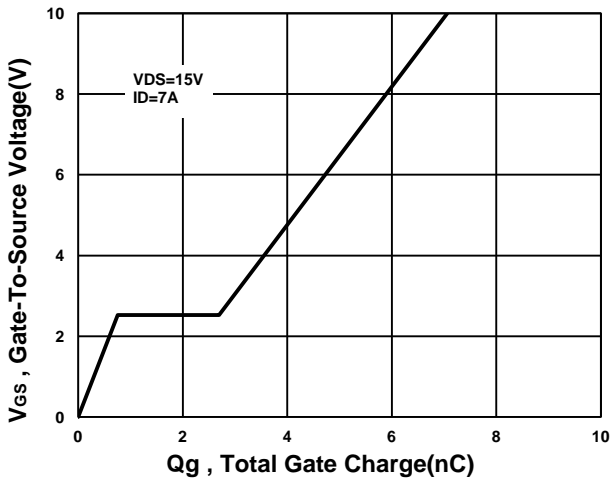
Output Characteristics



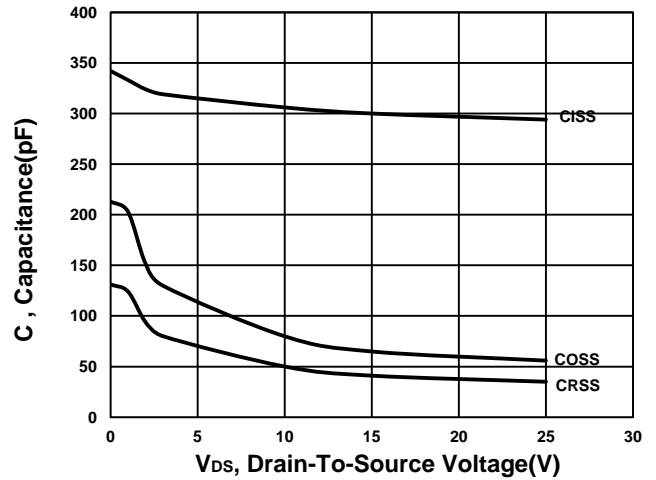
Transfer Characteristics



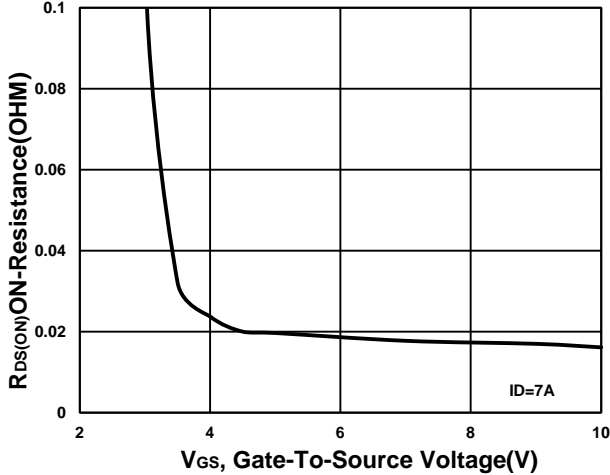
Gate charge Characteristics



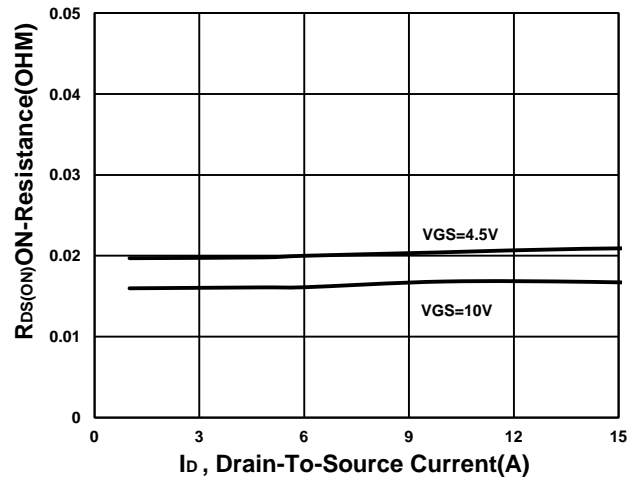
Capacitance Characteristic



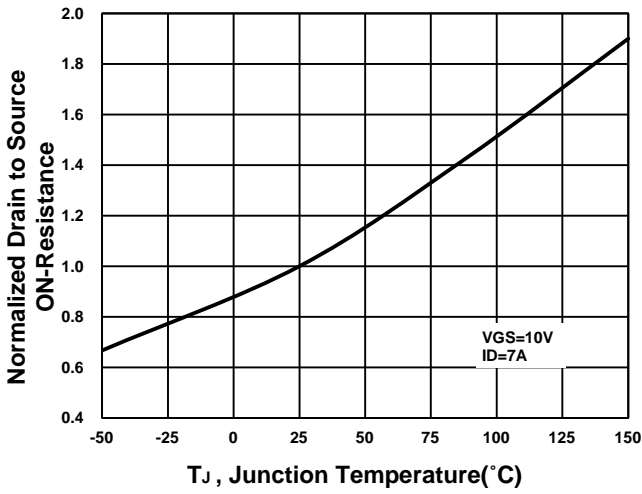
On-Resistance VS Gate-To-Source



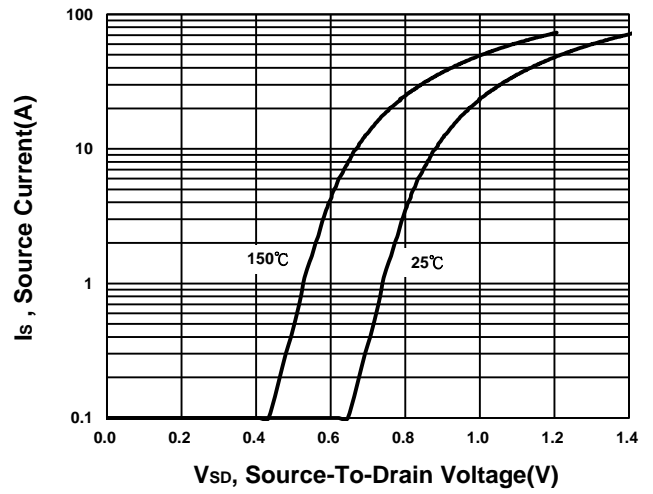
On-Resistance VS Drain Current



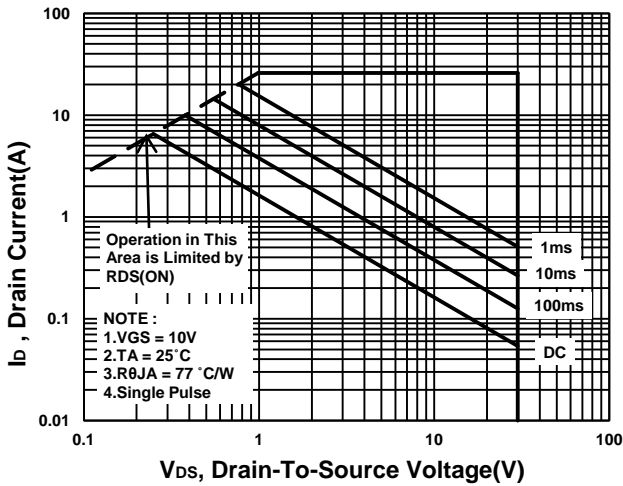
On-Resistance VS Temperature



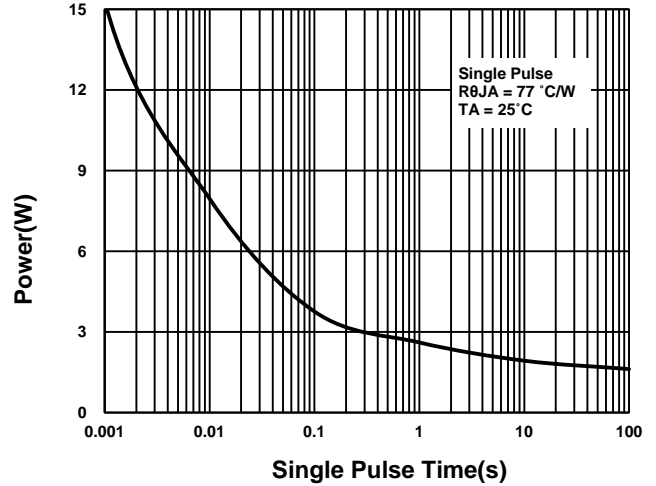
Source-Drain Diode Forward Voltage



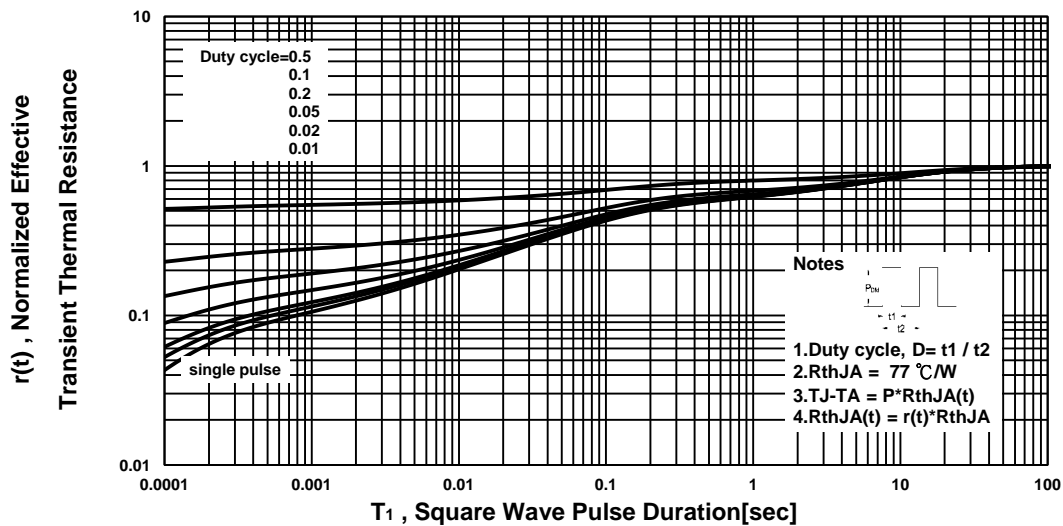
Safe Operating Area



Single Pulse Maximum Power Dissipation

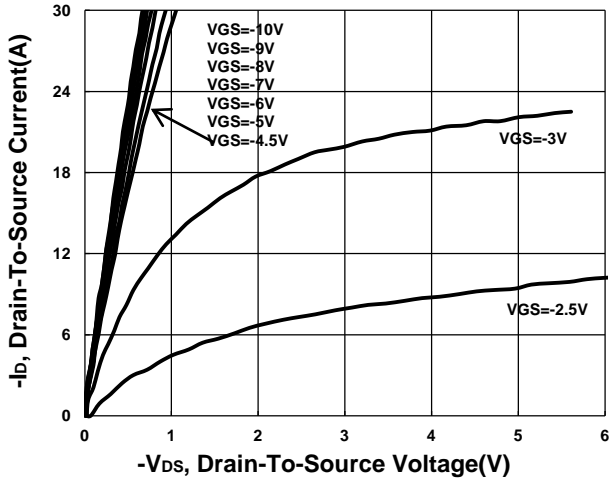


Transient Thermal Response Curve

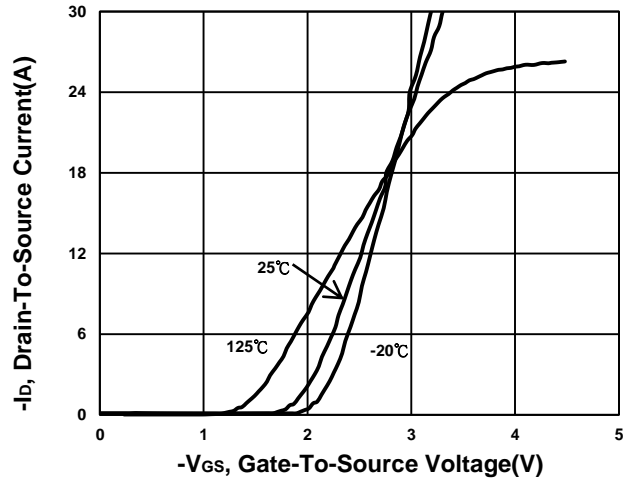


P-CHANNEL

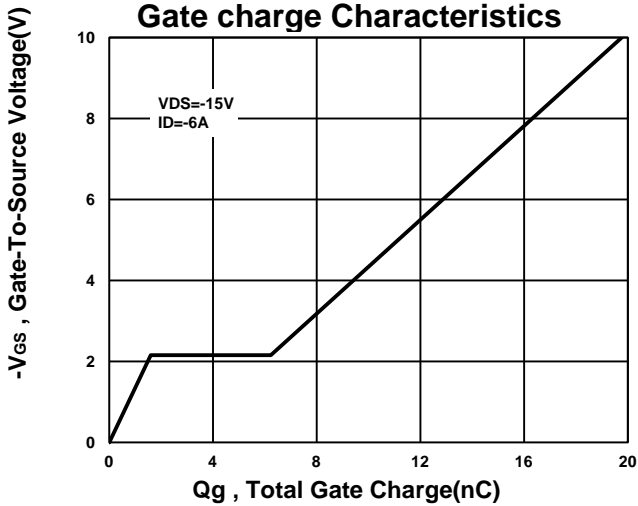
Output Characteristics



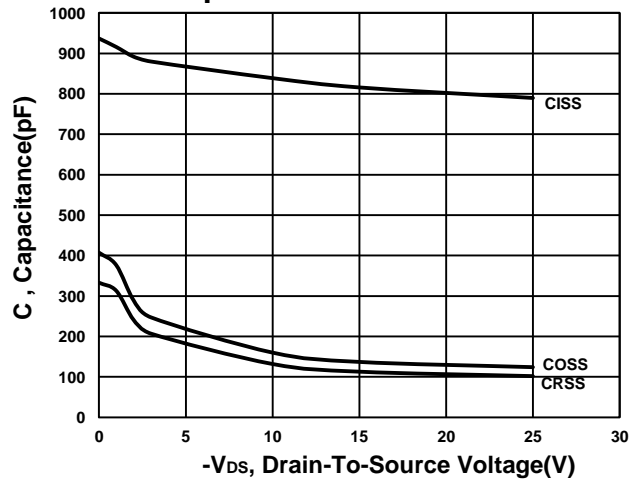
Transfer Characteristics



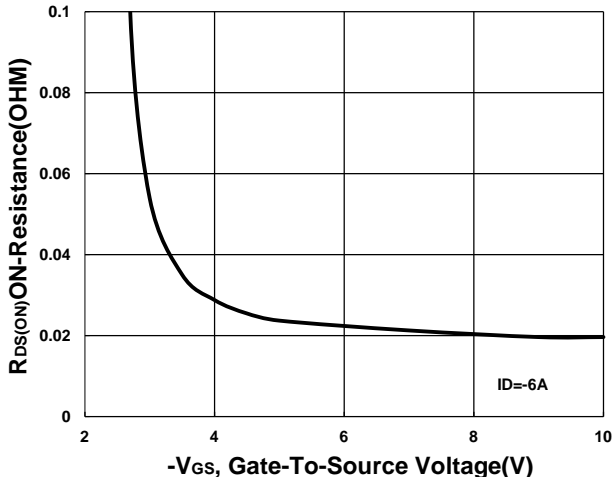
Gate charge Characteristics



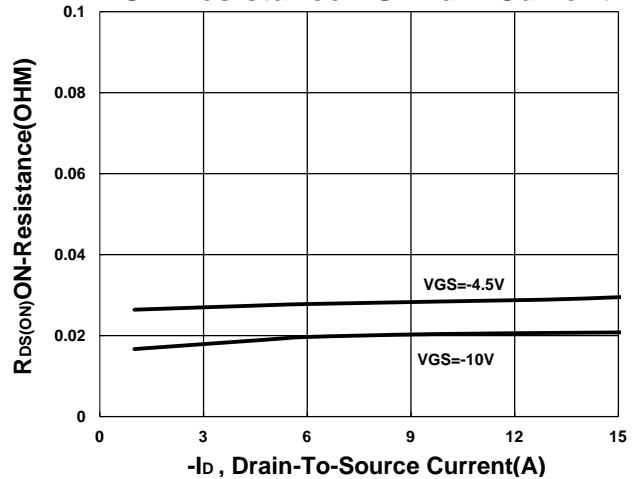
Capacitance Characteristic



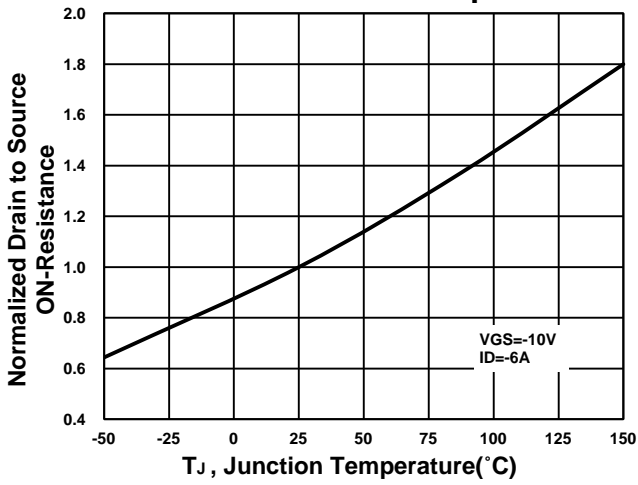
On-Resistance VS Gate-To-Source



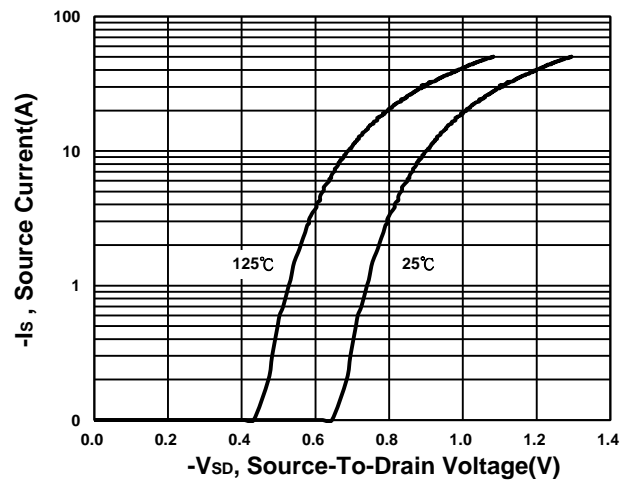
On-Resistance VS Drain Current



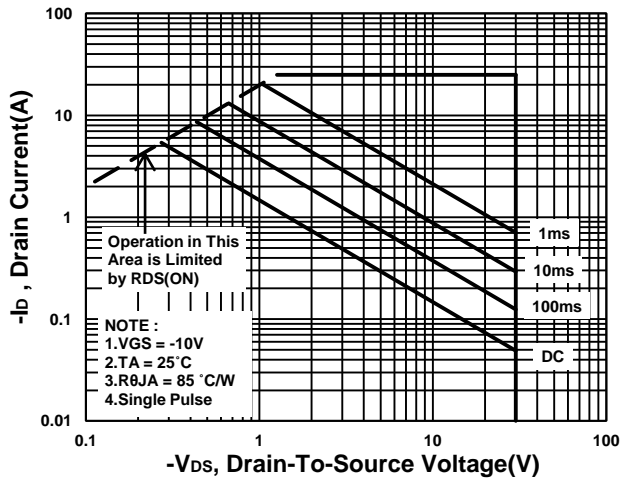
On-Resistance VS Temperature



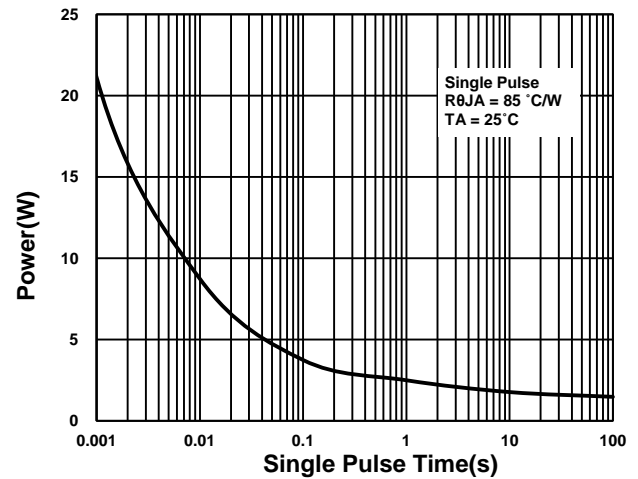
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

