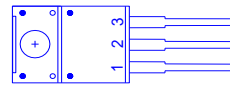
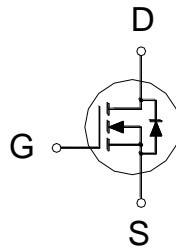




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	10.5mΩ	40A



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	40	A
	$T_C = 100\text{ °C}$		28.5	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	12.5	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	78.1	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	39	W
	$T_C = 100\text{ °C}$		19	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.8	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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

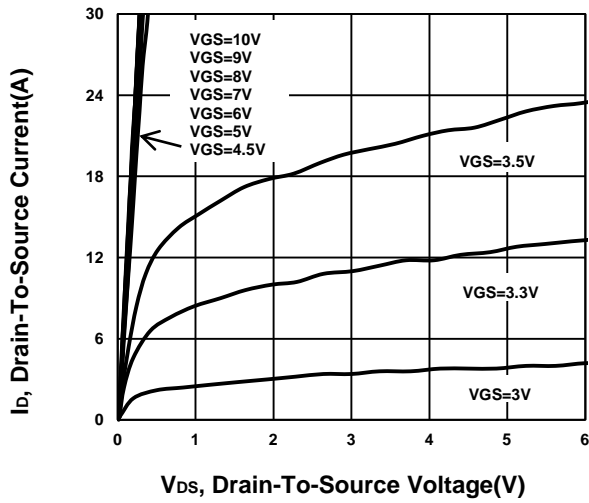
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.4	2	3	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA

Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA	
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 125^\circ C$			100		
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		11	15	$m\Omega$	
		$V_{GS} = 10V, I_D = 12A$		7.8	10.5		
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 12A$		60		S	
DYNAMIC							
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$		2172		pF	
Output Capacitance	C_{oss}			196			
Reverse Transfer Capacitance	C_{rss}			15			
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.6		Ω	
Total Gate Charge ²	Q_g	$V_{GS} = 10V$	$V_{DS} = 50V, I_D = 12A$		40	nC	
		$V_{GS} = 4.5V$			22		
Gate-Source Charge ²	Q_{gs}			7.1			
Gate-Drain Charge ²	Q_{gd}			12			
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 50V,$ $I_D \cong 12A, V_{GS} = 10V, R_{GEN} = 6\Omega$			12		nS
Rise Time ²	t_r				28		
Turn-Off Delay Time ²	$t_{d(off)}$			50			
Fall Time ²	t_f			49			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S				32	A	
Forward Voltage ¹	V_{SD}	$I_F = 12A, V_{GS} = 0V$			1.2	V	
Reverse Recovery Time	t_{rr}	$I_F = 12A, di_F/dt = 100A/\mu s$		33		nS	
Reverse Recovery Charge	Q_{rr}			41		nC	

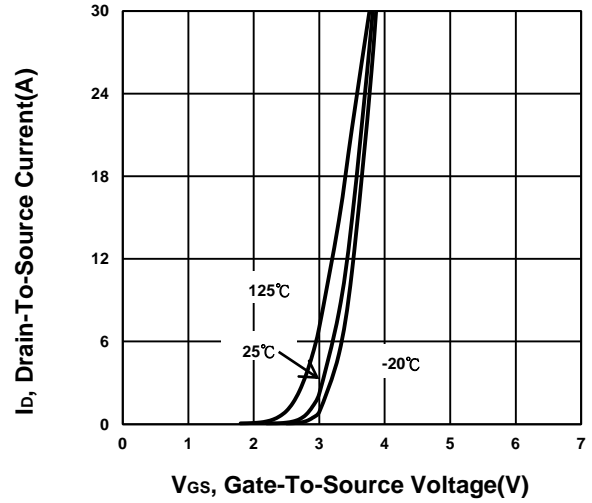
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

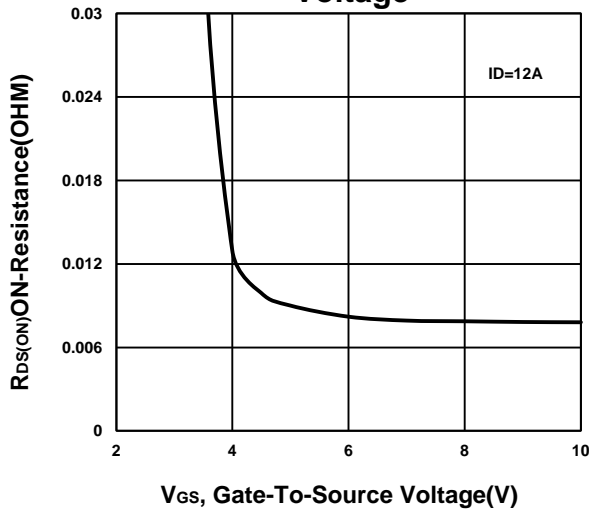
Output Characteristics



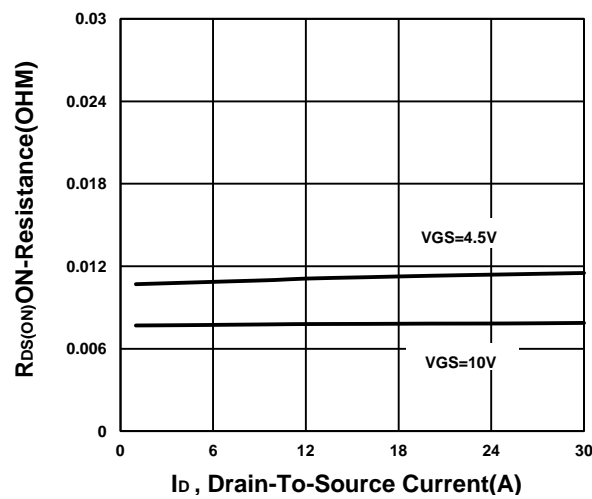
Transfer Characteristics



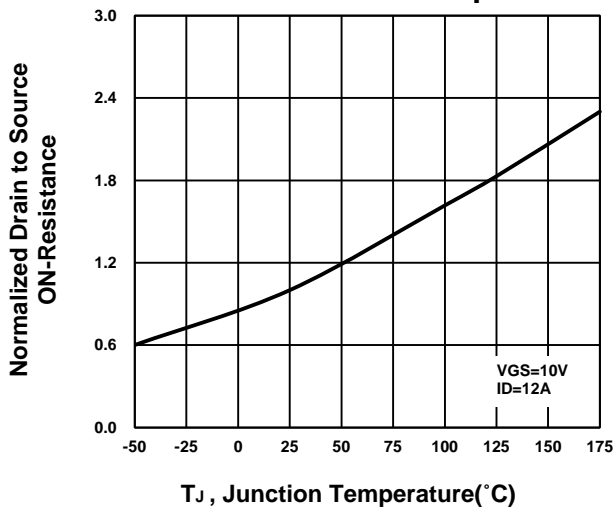
On-Resistance VS Gate-To-Source Voltage



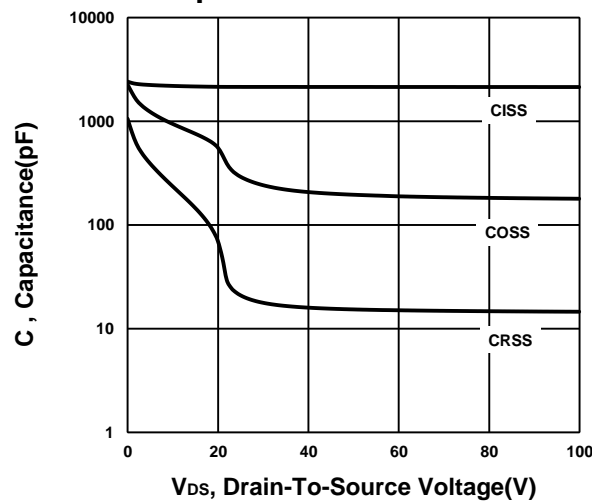
On-Resistance VS Drain Current



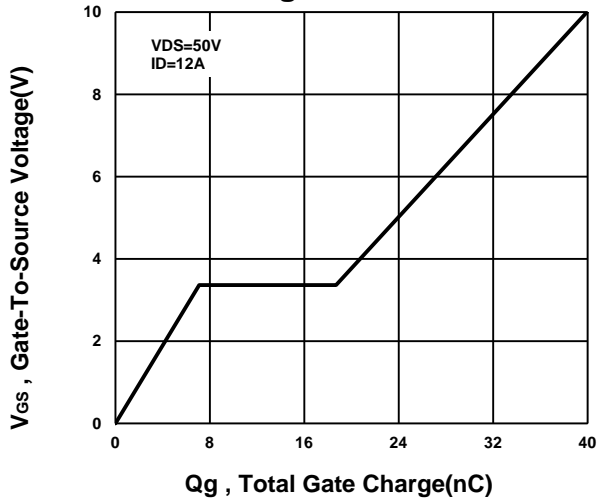
On-Resistance VS Temperature



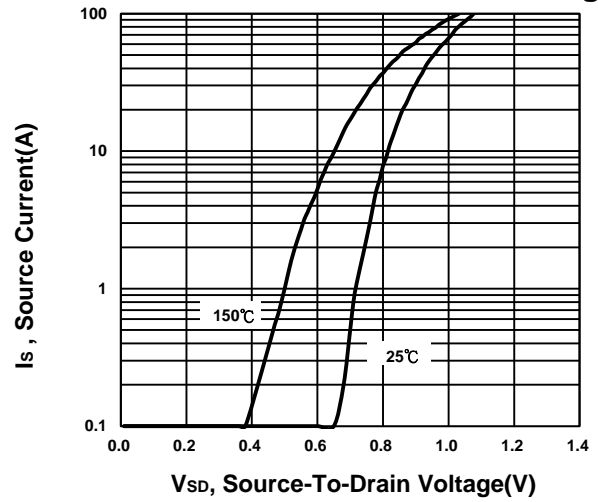
Capacitance Characteristic



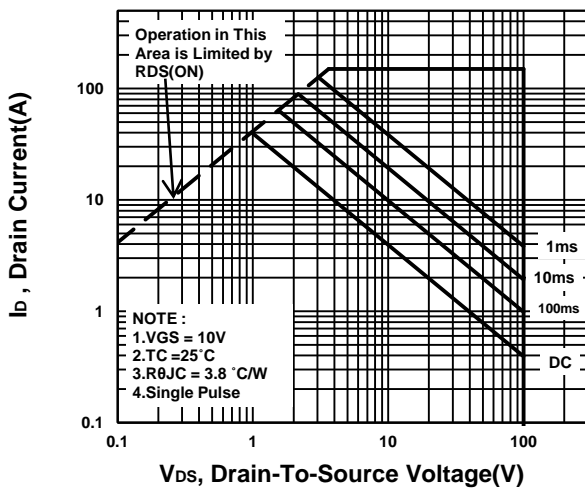
Gate charge Characteristics



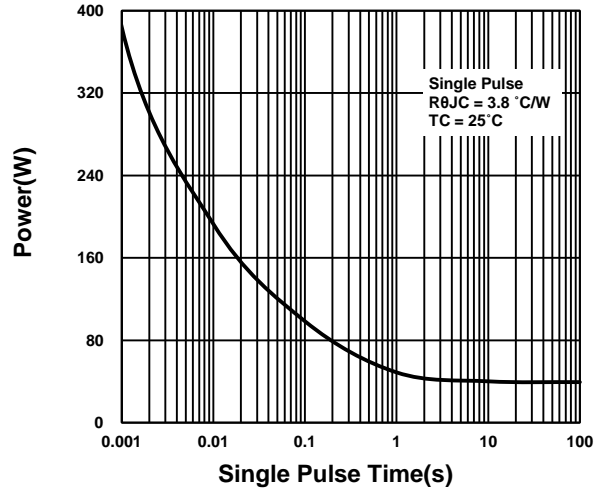
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

