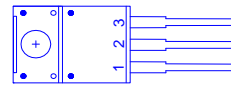
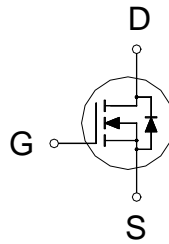




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
600V	190mΩ	20A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

ABSOLUTE MAXIMUM RATINGS(T_A=25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current ²	$T_C = 25\text{ °C}$	I_D	20	A
	$T_C = 100\text{ °C}$		12	
Pulsed Drain Current ¹		I_{DM}	59	
Avalanche Current ³		I_{AS}	4	A
Avalanche Energy ³		E_{AS}	320	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	48	W
	$T_C = 100\text{ °C}$		19	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.6	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	°C / W

¹Pulse width limited by maximum junction temperature.

²Ensure that the channel temperature does not exceed 150°C.

³ $V_{DD} = 50V$, $L = 40mH$,starting $T_j = 25\text{ °C}$.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3.1	4	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 30V$			±100	nA
Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V, T_C = 25\text{ °C}$			1	μA
		$V_{DS} = 480V, V_{GS} = 0V, T_C = 100\text{ °C}$			100	

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 10A$		160	190	$m\Omega$
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 10A$		15		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		1728		pF
Output Capacitance	C_{oss}			1096		
Reverse Transfer Capacitance	C_{rss}			25		
Effective Output Capacitance ⁴	$C_{o(er)}$	$V_{GS} = 0V, V_{DS} = 0 \text{ to } 480V$		82		
Total Gate Charge ²	Q_g	$V_{DD} = 480V, I_D = 10A, V_{GS} = 10V$		60		nC
Gate-Source Charge ²	Q_{gs}			10		
Gate-Drain Charge ²	Q_{gd}			29		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 300V, I_D = 10A, R_G = 10\Omega$		39		nS
Rise Time ²	t_r			94		
Turn-Off Delay Time ²	$t_{d(off)}$			105		
Fall Time ²	t_f			54		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current ³	I_S				20	A
Forward Voltage ¹	V_{SD}	$I_F = 10A, V_{GS} = 0V$			1.5	V
Reverse Recovery Time	t_{rr}	$I_F = 10A, dI_F/dt = 100A / \mu S$		395		nS
Reverse Recovery Charge	Q_{rr}			4.3		μC

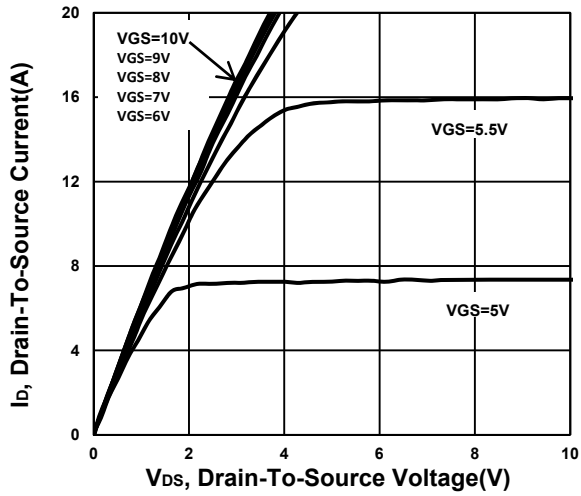
¹Pulse test : Pulse Width $\leq 380 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

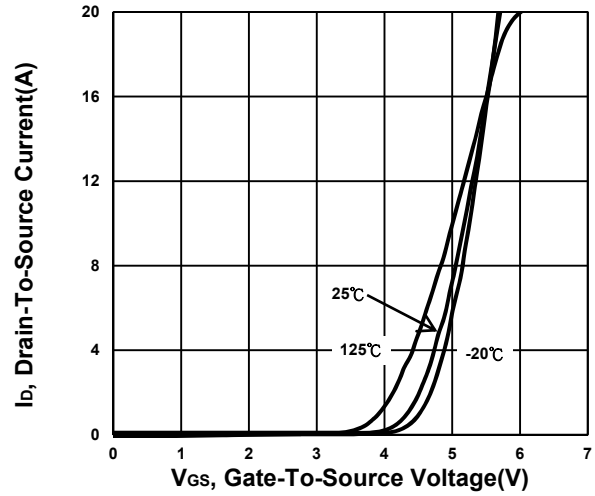
³Pulse width limited by maximum junction temperature.

⁴ $C_{o(er)}$ is a fixed capacitance that gives the same stored energy as C_{oss} while V_{DS} is rising from 0 to 80% $V_{(BR)DSS}$.

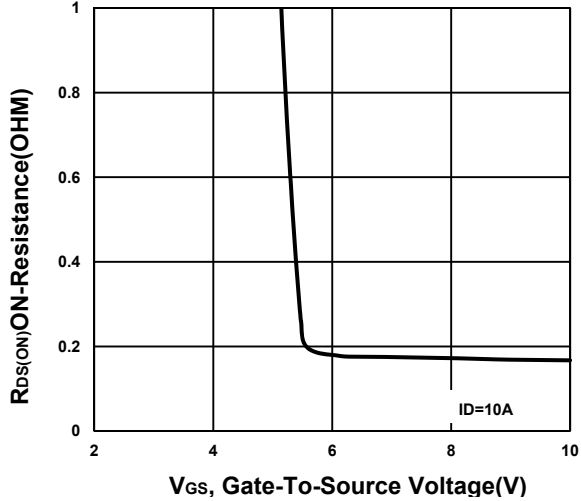
Output Characteristics



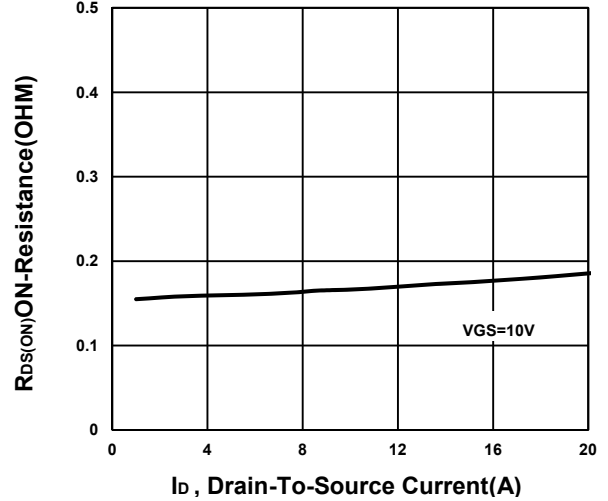
Transfer Characteristics



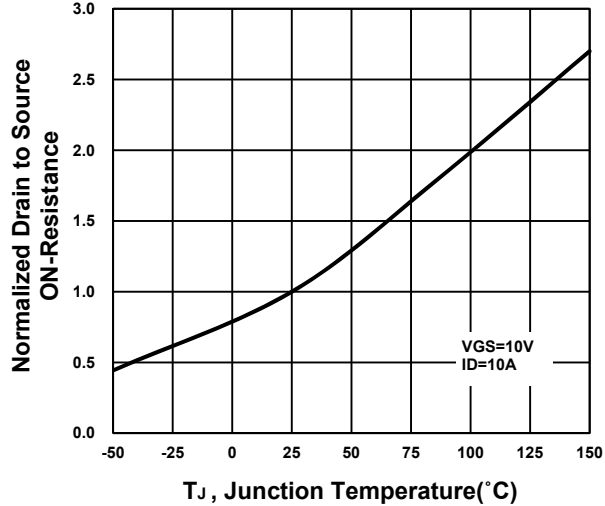
On-Resistance VS Gate-To-Source



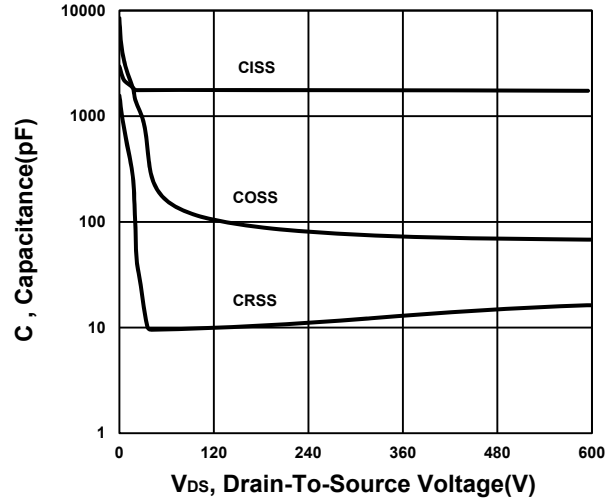
On-Resistance VS Drain Current



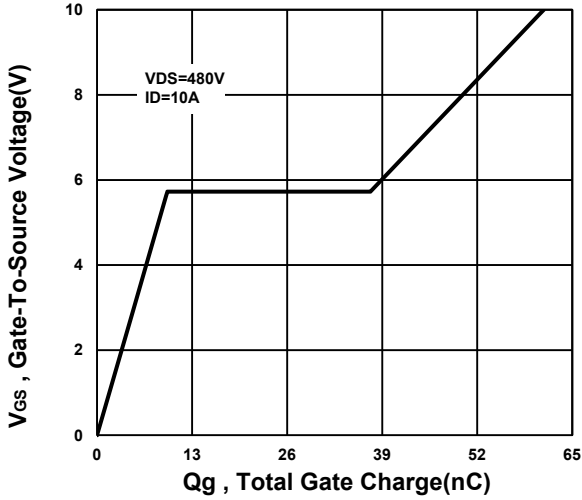
On-Resistance VS Temperature



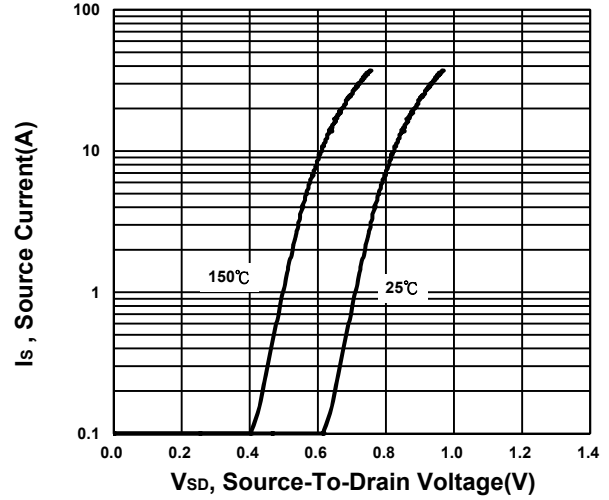
Capacitance Characteristic



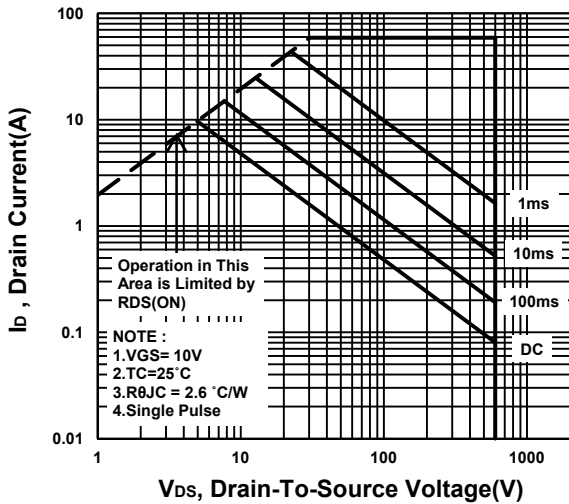
Gate charge Characteristics



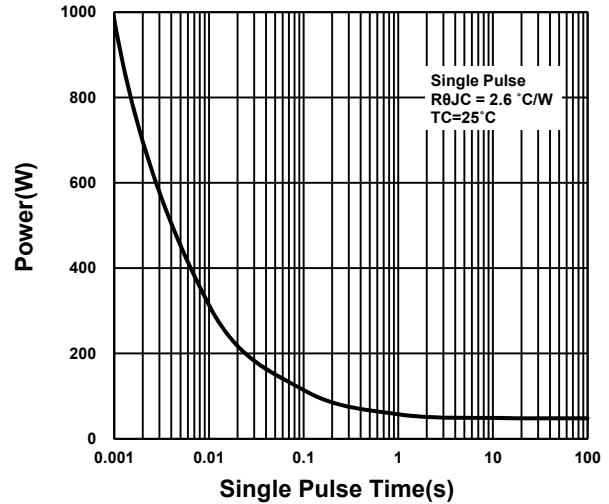
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

