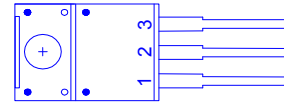
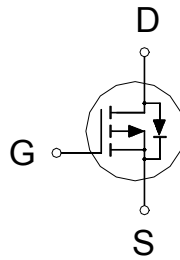




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	16mΩ	-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}	-40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	-40	A
	$T_C = 100\text{ °C}$		-25	
Pulsed Drain Current ¹		I_{DM}	-120	
Avalanche Current		I_{AS}	-40	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	78	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	42	W
	$T_C = 100\text{ °C}$		17	
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	$R_{\theta Jc}$		3	°C / W
Junction-to-Ambient	$R_{\theta JA}$		60	

¹Pulse width limited by maximum junction temperature.

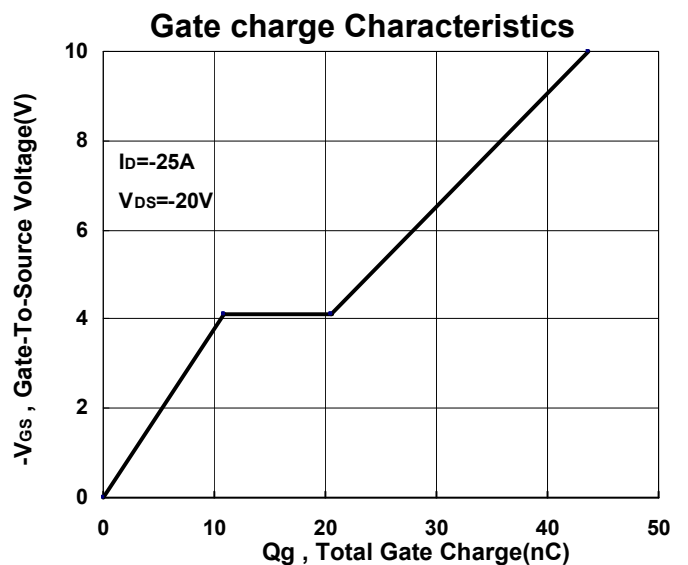
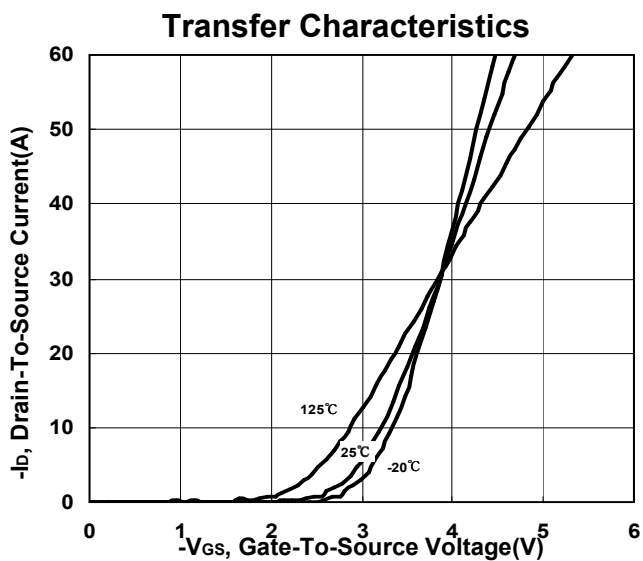
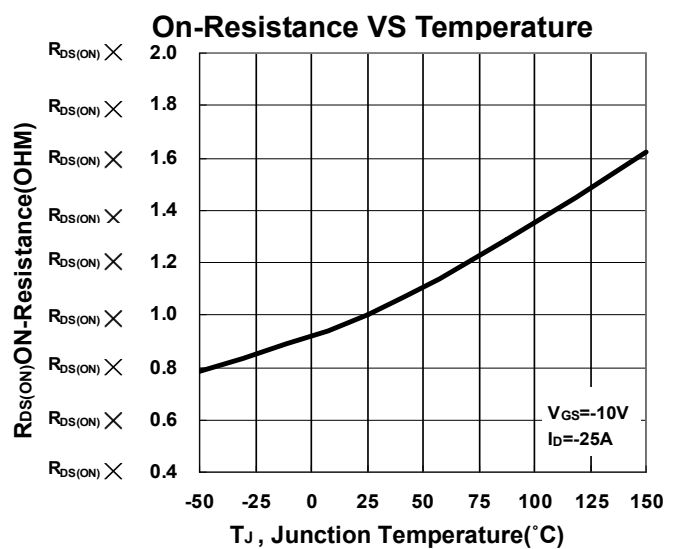
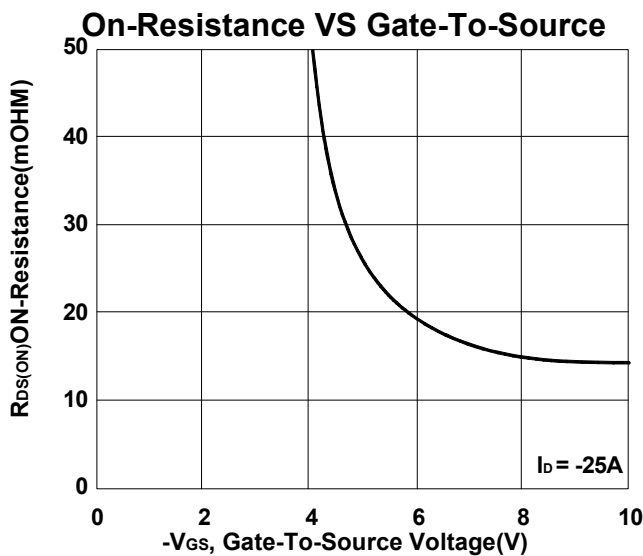
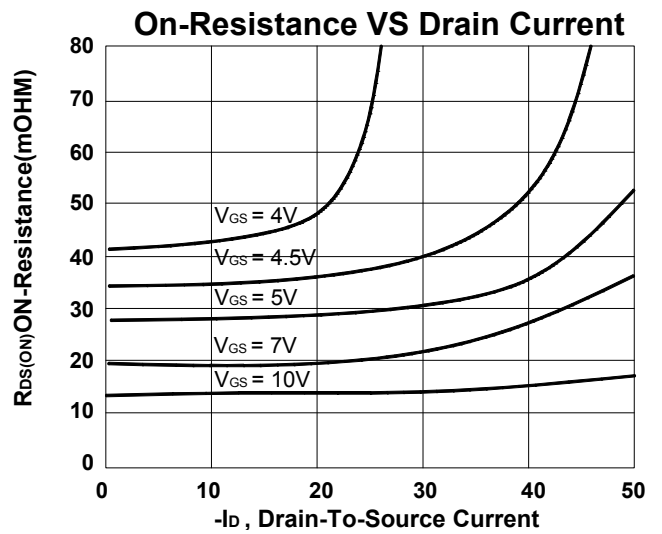
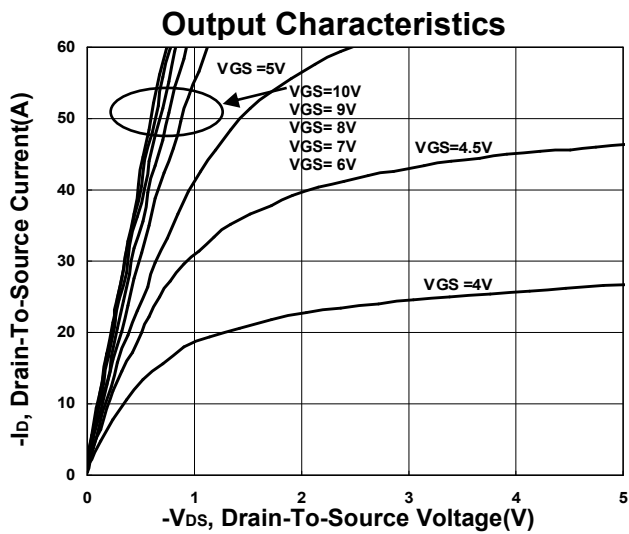
ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ °C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.5	-2.2	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -32V, V_{GS} = 0V$			1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 125\text{ °C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-120			A

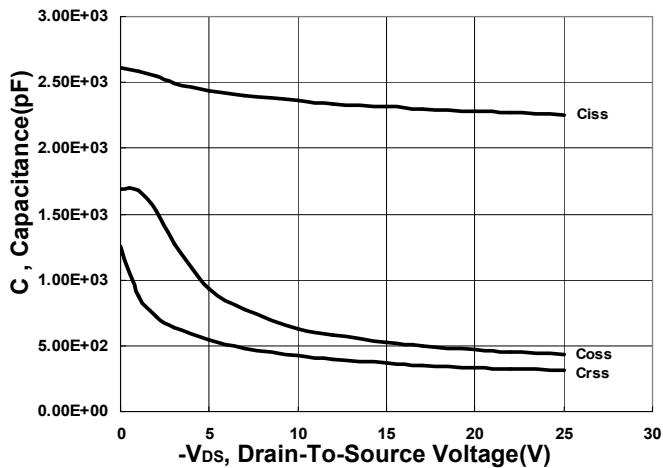
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -7V, I_D = -15A$	16	20	m Ω
		$V_{GS} = -10V, I_D = -25A$	13	16	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -25A$	38		S
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -20V, f = 1MHz$	2310		pF
Output Capacitance	C_{oss}		438		
Reverse Transfer Capacitance	C_{rss}		320		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	4.3		Ω
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V, I_D = -25A$	45		nC
Gate-Source Charge ²	Q_{gs}		12		
Gate-Drain Charge ²	Q_{gd}		11		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -20V$ $I_D \cong -25A, V_{GS} = -10V, R_{GS} = 6\Omega$	15		nS
Rise Time ²	t_r		43		
Turn-Off Delay Time ²	$t_{d(off)}$		62		
Fall Time ²	t_f		50		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)					
Continuous Current	I_S			-40	A
Forward Voltage ¹	V_{SD}	$I_F = -25A, V_{GS} = 0V$		1.3	V
Reverse Recovery Time	t_{rr}	$I_F = -25A, di_F/dt = 100A / \mu S$	43		nS
Reverse Recovery Charge	Q_{rr}		31		nC

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

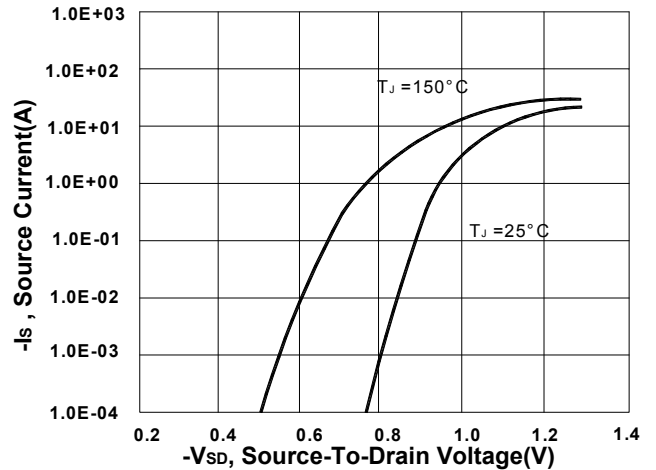
²Independent of operating temperature.



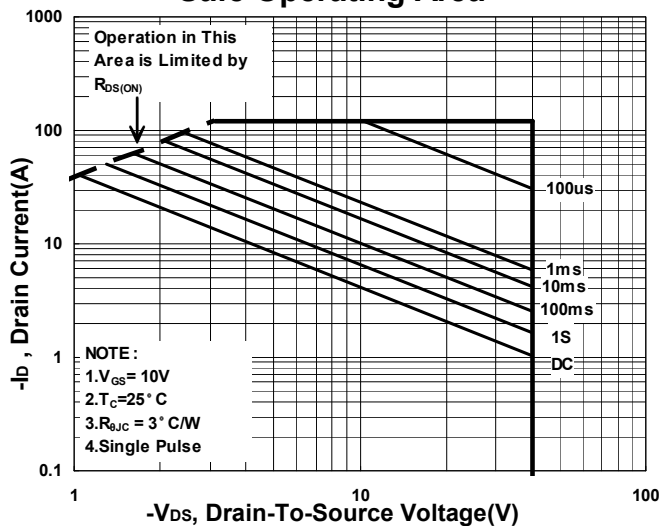
Capacitance Characteristic



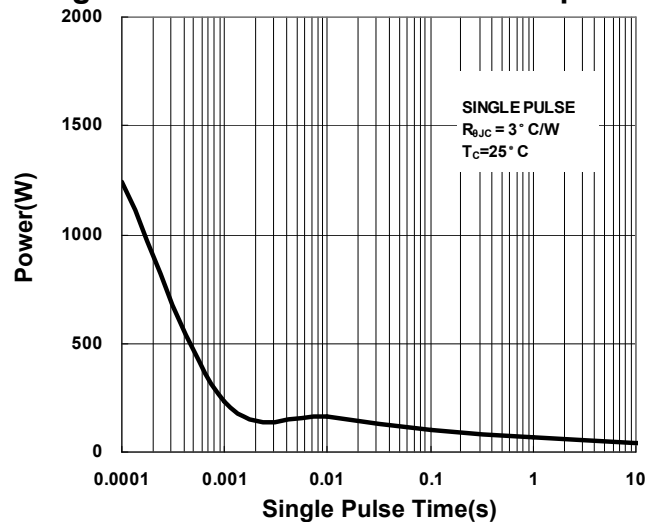
Body Diode Forward Voltage VS Source current



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

