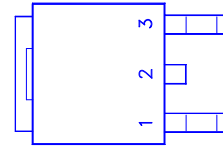
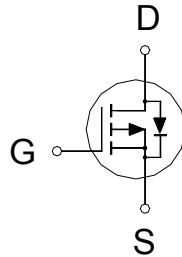




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	25.8m Ω	-18A



1. GATE
2. DRAIN
3. SOURCE

100% UIS tested
100% Rg tested

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	-18	A
	$T_C = 70\text{ }^{\circ}\text{C}$		-13.5	
Pulsed Drain Current ¹		I_{DM}	-40	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	42	W
	$T_C = 70\text{ }^{\circ}\text{C}$		27	
Operating 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-Case	$R_{\theta JC}$		3	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		75	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

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

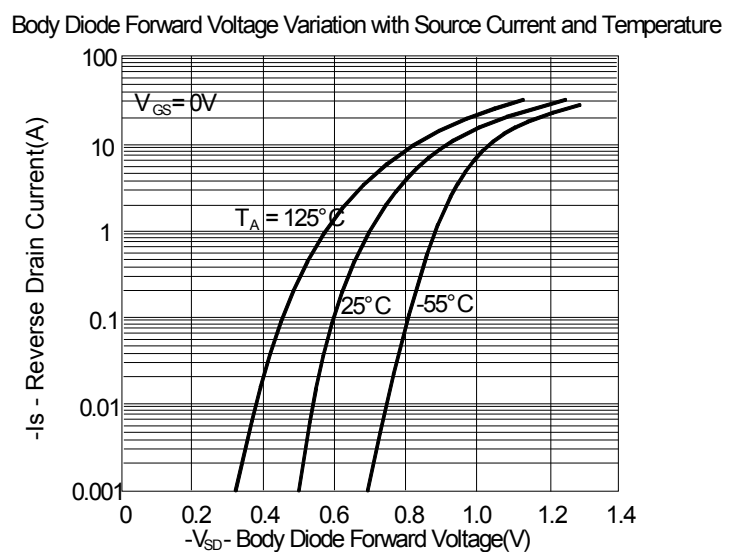
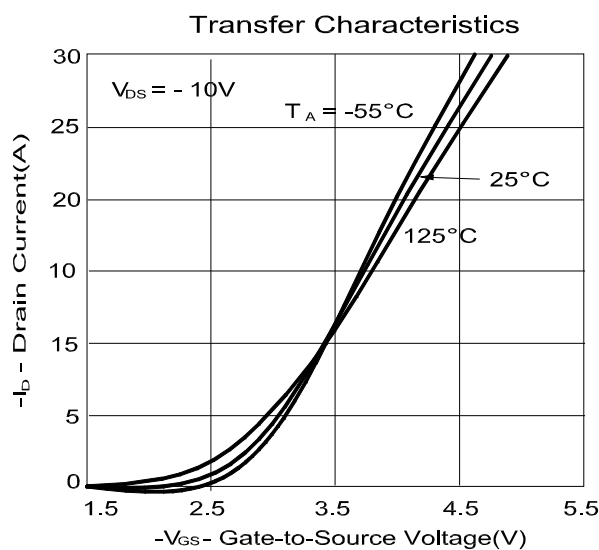
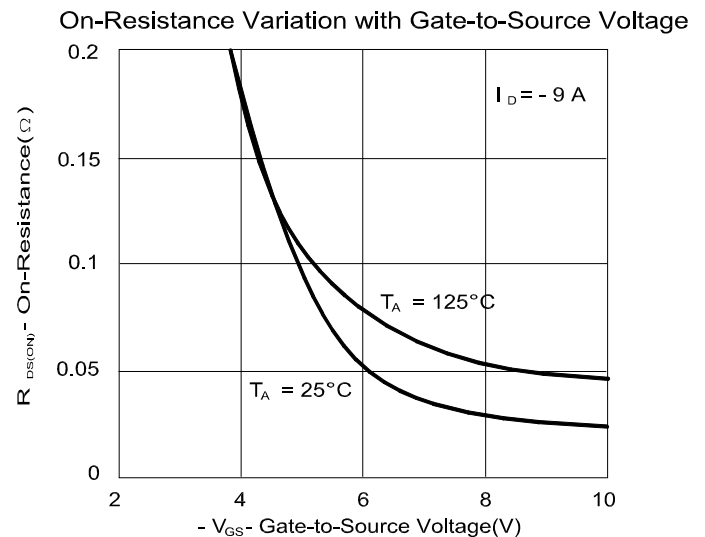
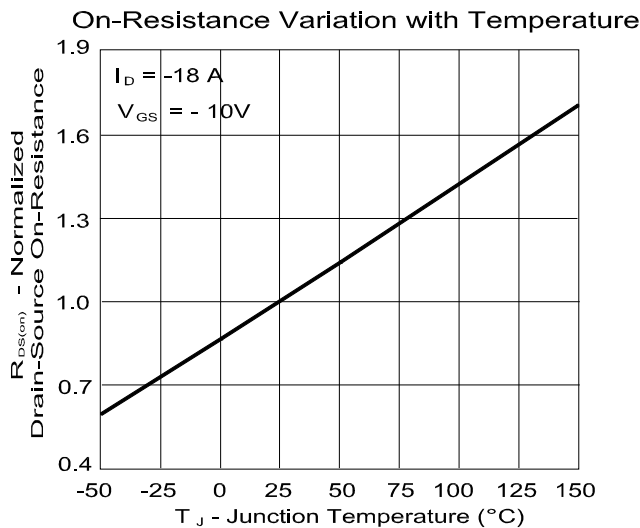
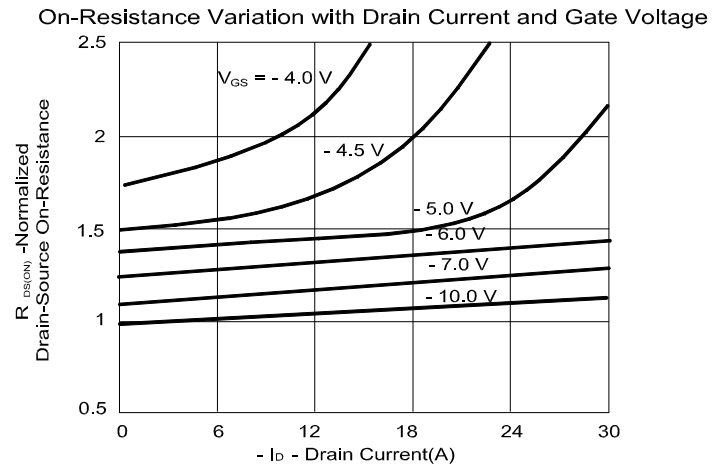
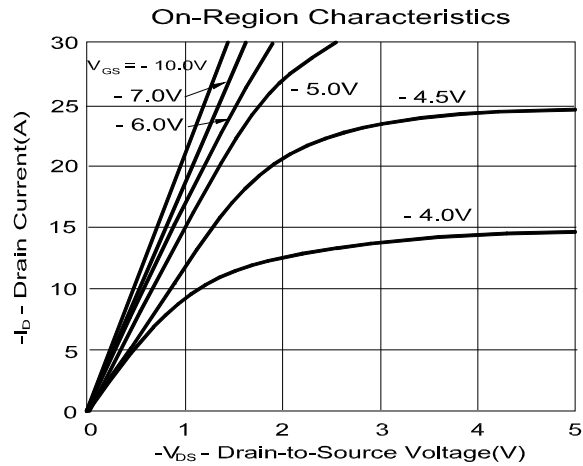
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.5	-2.2	-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -32V, V_{GS} = 0V$			1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-40			A

Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -7V, I _D = -10A		30	40	mΩ
		V _{GS} = -10V, I _D = -18A		22	25.8	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -18A		20		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		1570		pF
Output Capacitance	C _{oss}			320		
Reverse Transfer Capacitance	C _{rss}			210		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = -10V, I _D = -18A		29		nC
Gate-Source Charge ²	Q _{gs}			6		
Gate-Drain Charge ²	Q _{gd}			7		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -20V, R _L = 1Ω I _D ≅ -1A, V _{GS} = -10V, R _{GS} = 6Ω		12		nS
Rise Time ²	t _r			29		
Turn-Off Delay Time ²	t _{d(off)}			42		
Fall Time ²	t _f			33		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				-18	A
Forward Voltage ¹	V _{SD}	I _F = -18A , V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -18 A, dI _F /dt = 100A / μS		29		nS
Reverse Recovery Charge	Q _{rr}			21		nC

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

²Independent of operating temperature.

TYPICAL PERFORMANCE CHARACTERISTICS



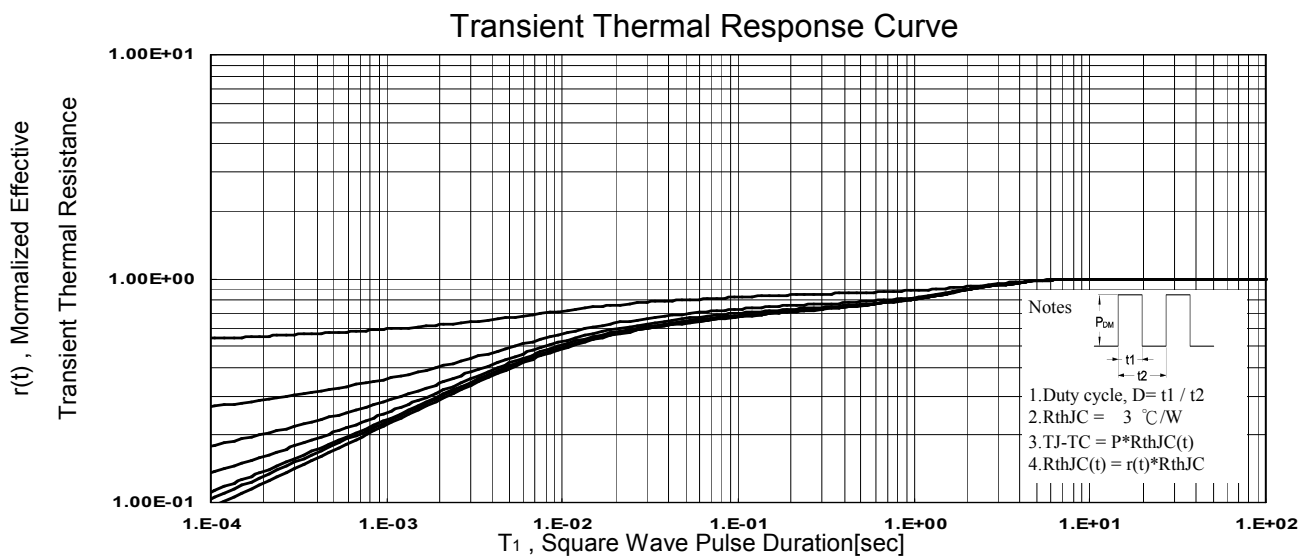
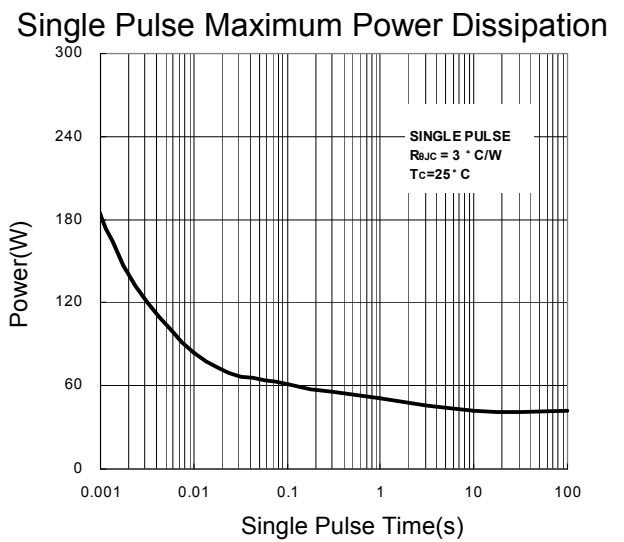
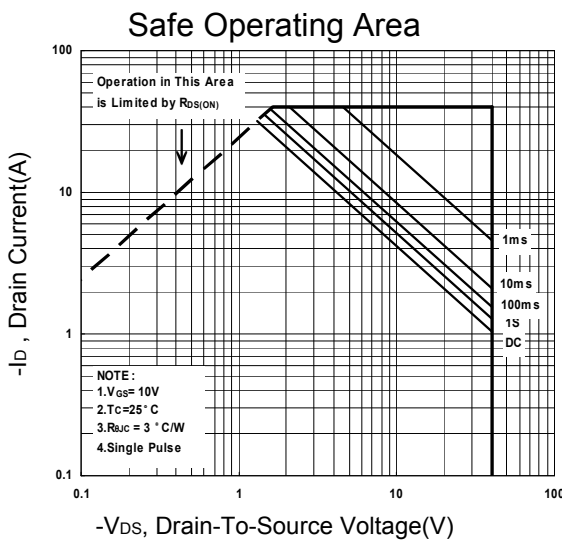
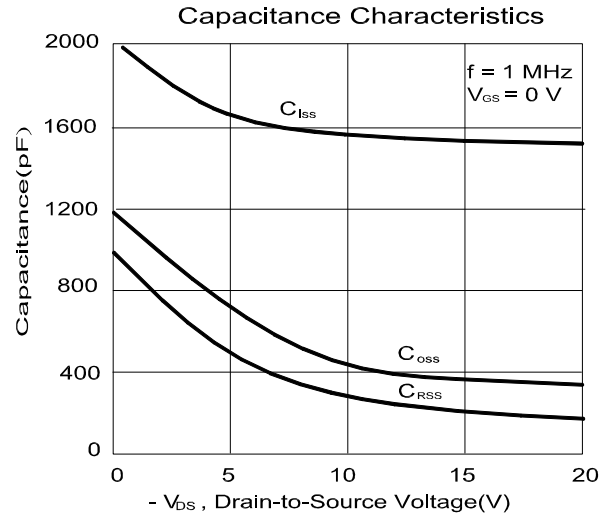
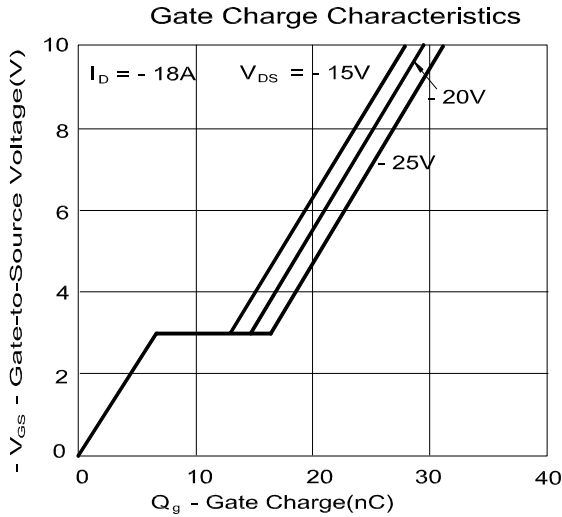


Figure 1

Gate Charge Test Circuit

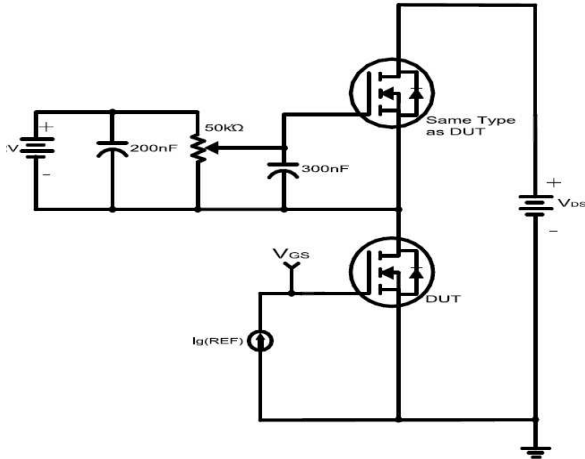


Figure 2

Gate Charge Waveforms

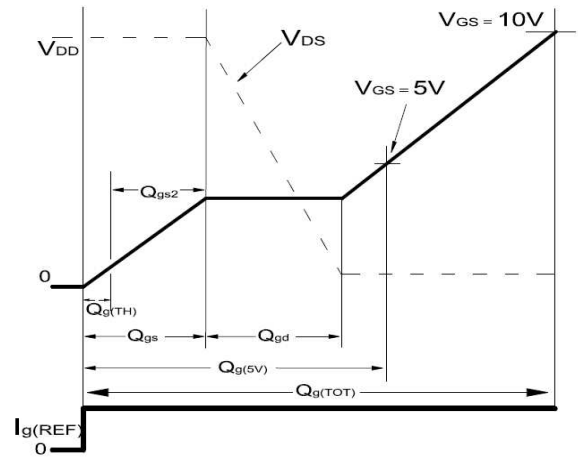


Figure 3

Switching Time Test Circuit

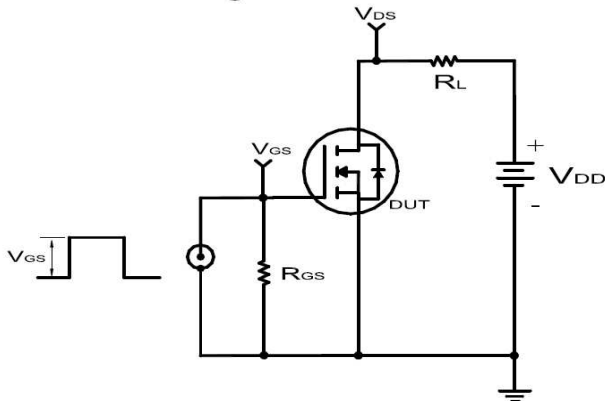


Figure 4

Switching Time Waveforms

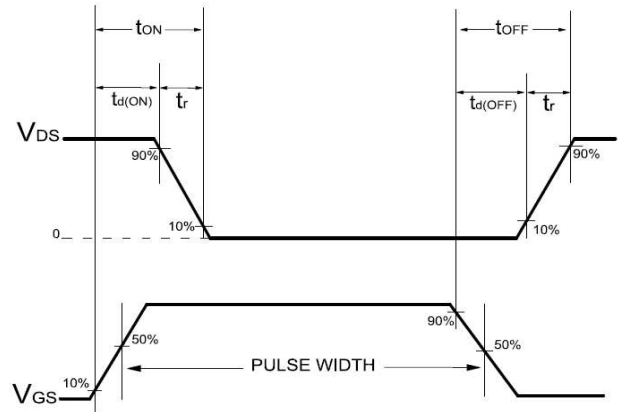


Figure 5

Unclamped Energy Test Circuit

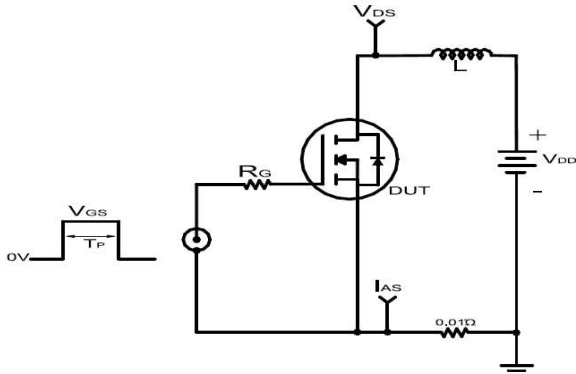


Figure 6

Unclamped Energy Waveforms

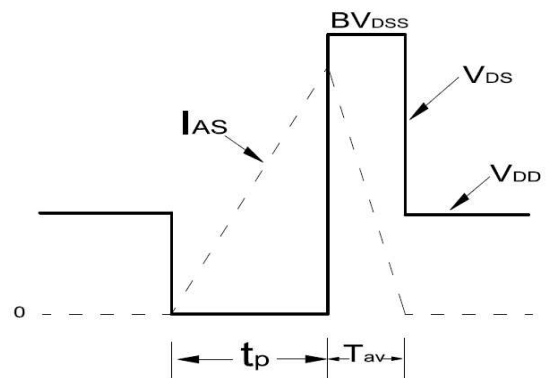


Figure 7
Diode Recovery Test Circuit

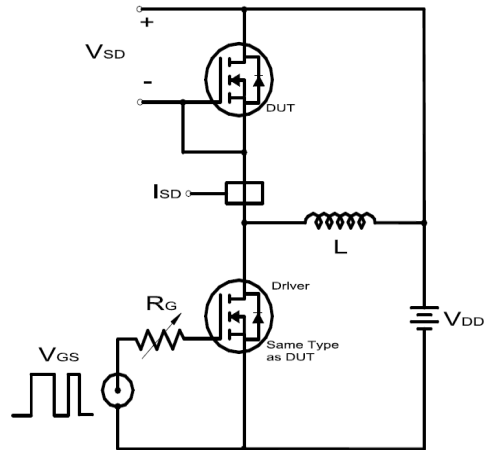


Figure 8
Diode Recovery Test Waveforms

