
Main Product Characteristics:**Features and Benefits:****Description:****Absolute Max Rating:**

Symbol	Parameter	Max.	Units
$I_D @ TC = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	11	A
I_{DM}	Pulsed Drain Current	70	
$P_D @ TC = 25^\circ C$	Power Dissipation	1.56	
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-to-Source Voltage	12	V
$T_J \quad T_{STG}$	Operating		

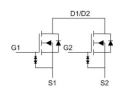
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
R_{JA}	Junction-to-ambient ()	—	80	/W

Electrical Characterizes @ $T_A=25$ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	20	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	6.6	7.2	m	$V_{GS}=4.5V, I_D =5.5A$
		—	7	7.5		$V_{GS}=4V, I_D =5.5A$
		—	7.1	8.2		$V_{GS}=3.7V, I_D =5.5A$
		—	7.6	9		$V_{GS}=3.1V, I_D =5.5A$
		—	8.7	10.2		$V_{GS}=2.5V, I_D =5.5A$
$V_{GS(th)}$	Gate threshold voltage	0.5	—	1.5	V	$V_{DS} = V_{GS}, I_D =250\mu A$
I_{DSS}	Drain-to-Source leakage current	—	—	1	μA	$V_{DS} =18V, V_{GS} = 0V$
I_{GSS}	Gate-to-Source forward leakage	—	—	10	μA	$V_{GS} =8V$
		—	—	-10		$V_{GS} = -8V$
Q_g	Total gate charge	—	23	—	nC	$I_D = 11A,$ $V_{DS}=16V,$ $V_{GS} = 4.5V$
Q_{gs}	Gate-to-Source charge	—	4	—		
Q_{gd}	Gate-to-Drain("Miller") charge	—	8	—		
$t_{d(on)}$	Turn-on delay time	—	10	—	ns	$V_{GS}=4.5V, V_{DS}=16V,$ $R_{GEN}=6$ $I_D = 5.5A$
t_r	Rise time	—	41	—		
$t_{d(off)}$	Turn-Off delay time	—	65	—		
t_f	Fall time	—	30	—		
C_{iss}	Input capacitance	—	1765	—	pF	$V_{GS} = 0V$ $V_{DS} = 10V$ $f = 1MHz$
C_{oss}	Output capacitance	—	182	—		
C_{rss}	Reverse transfer capacitance	—	155	—		

Source-Drain Ratings and Characteristics

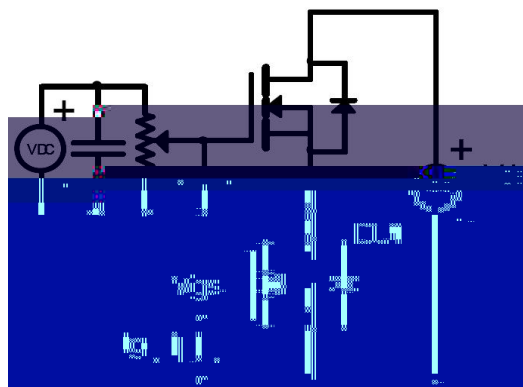
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	11	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode)	—	—	70	A	
V_{SD}	Diode Forward Voltage	—	—	1	V	

Test Circuits and Waveforms

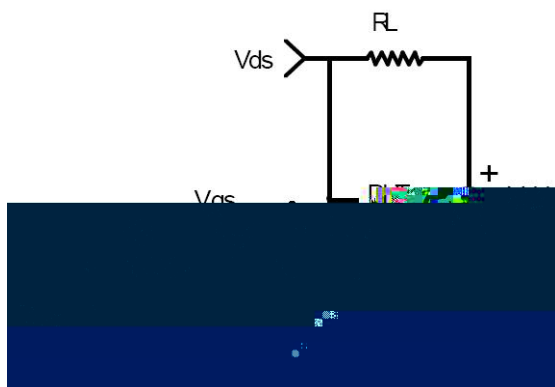
EAS Test Circuit:



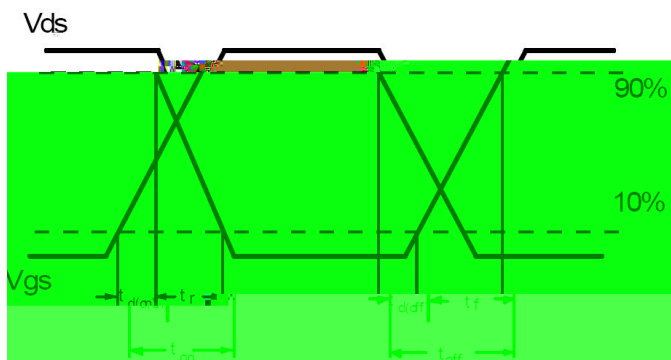
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switching Waveforms:



Notes:

Calculated continuous current based on maximum allowable junction temperature.

Repetitive rating; pulse width limited by max. junction temperature.

The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.

The value of R_{JA} is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$

Typical Electrical and Thermal Characteristics

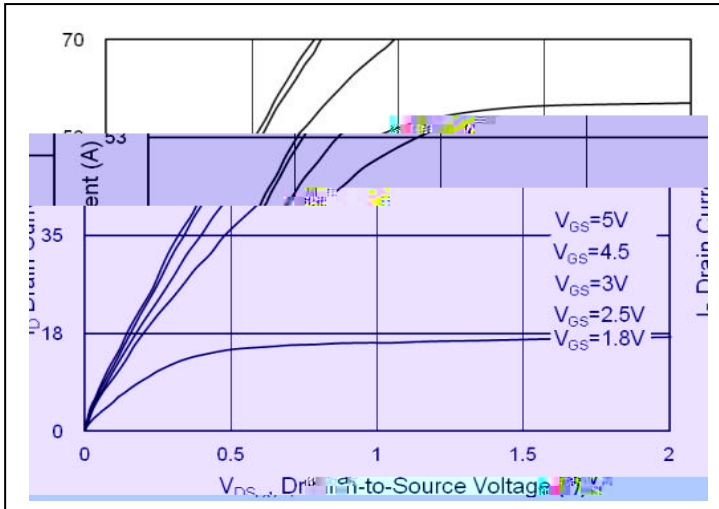


Figure1. Typical Output Characteristics

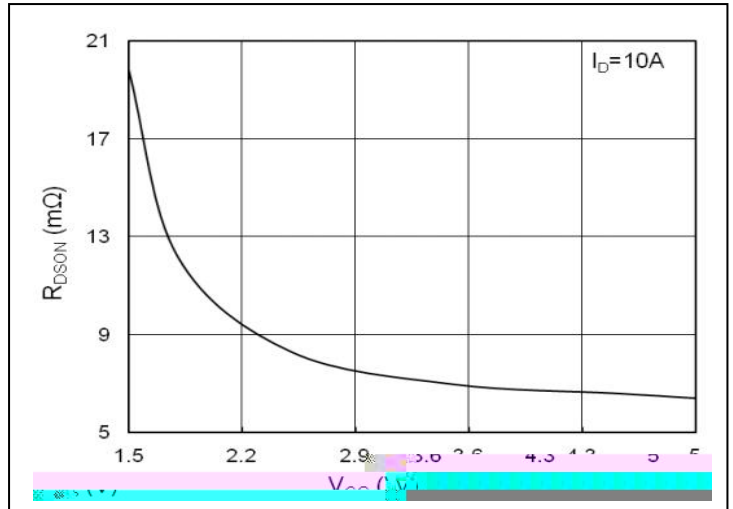


Figure2. Rdson vs. Gate-Source Voltage

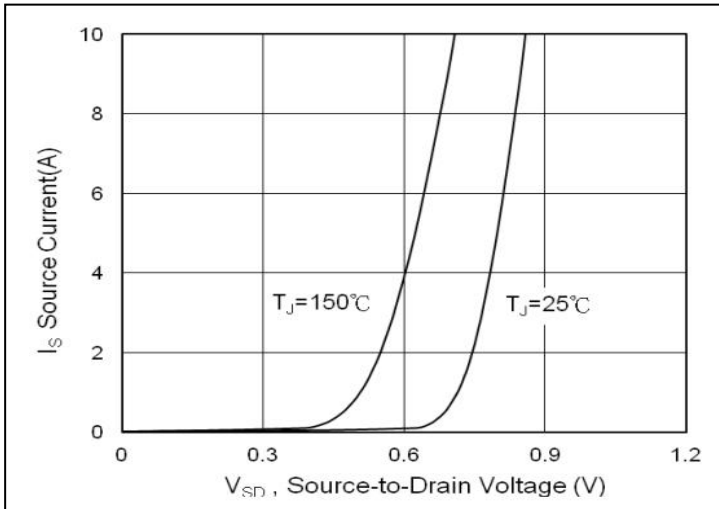


Figure3. Forward Characteristics of Reverse

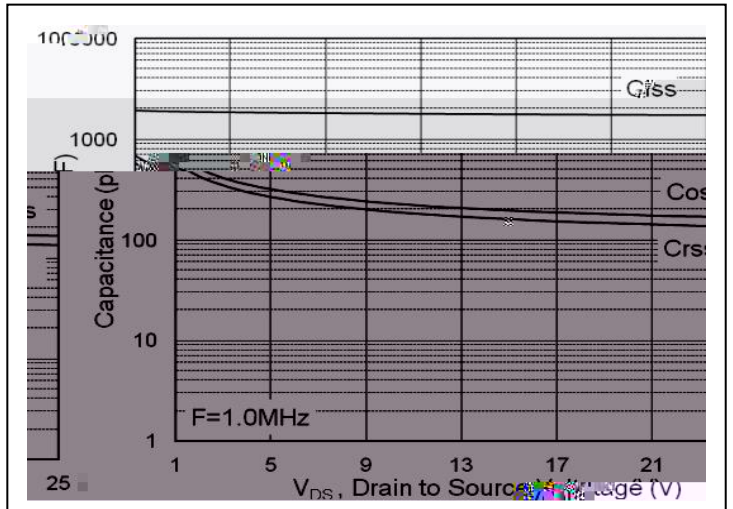


Figure4. Rdson vs. Drain Current

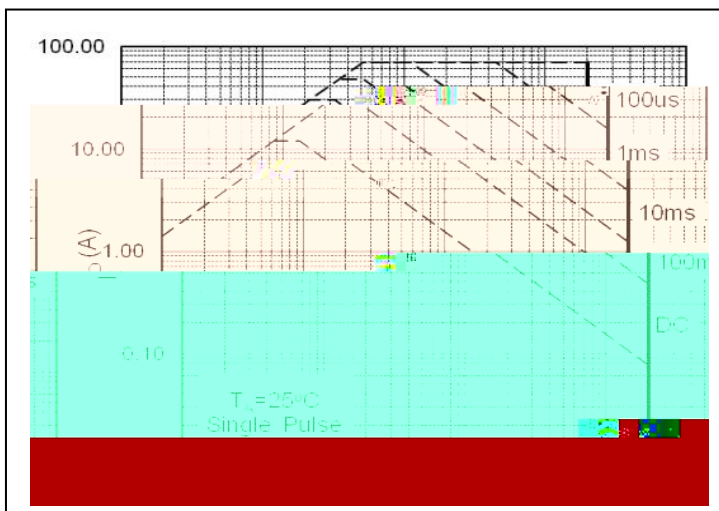


Figure5. Safe Operating Area

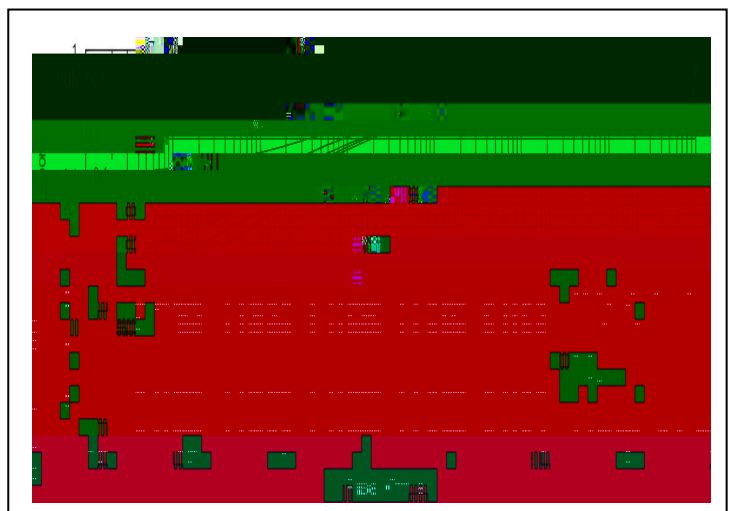


Figure6. Transient Thermal Impedance

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