

Thermal Characteristics								
Parameter		Symbol	Тур	Max	Units			
Maximum Junction-to-Ambient A	t ≤ 10s	- R _{0JA}	31	40	°C/W			
Maximum Junction-to-Ambient ^A	Steady-State	Γ× _θ JA	59	75	°C/W			
Maximum Junction-to-Lead ^C	Steady-State	$R_{ ext{ hetaJL}}$	16	24	°C/W			

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Conditions		Min	Тур	Max	Units
STATIC F	PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	I_{D} =250µA, V_{GS} =0V		30			V
I _{DSS}	Zero Gate Voltage Drain Current	V_{DS} =24V, V_{GS} =0V			0.003	1	
	Zero Gale Voltage Drain Current		T _J =55°C			5	μA
I _{GSS}	Gate-Body leakage current	$V_{DS}=0V, V_{GS}=\pm 20V$				±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} I _D =10mA		1.5	2	3	V
I _{D(ON)}	On state drain current	V_{GS} =4.5V, V_{DS} =5V		50			Α
R _{DS(ON)}		V _{GS} =10V, I _D =11.6A			11	14	mΩ
	Static Drain-Source On-Resistance		T _J =125°C		17	21	
		V _{GS} =4.5V, I _D =10A			17.4	22	mΩ
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =11.6A			19		S
V_{SD}	Diode Forward Voltage	I _S =1A,V _{GS} =0V			0.73	1	V
I _s	Maximum Body-Diode Continuous Current					4.5	А
DYNAMIC	C PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz			955	1200	pF
C _{oss}	Output Capacitance				145		pF
C _{rss}	Reverse Transfer Capacitance				112		pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz			0.5	0.85	Ω
SWITCHI	NG PARAMETERS						
Q _g (10V)	Total Gate Charge	V _{GS} =10V, V _{DS} =15V, I _D =11.6A			17	24	nC
Q _g (4.5V)	Total Gate Charge				9	12	nC
Q _{gs}	Gate Source Charge				3.4		nC
Q_{gd}	Gate Drain Charge				4.7		nC
t _{D(on)}	Turn-On DelayTime	V_{GS} =10V, V_{DS} =15V, R_{L} =1.30 Ω , R_{GEN} =3 Ω			5	6.5	ns
t _r	Turn-On Rise Time				6	7.5	ns
t _{D(off)}	Turn-Off DelayTime				19	25	ns
t _f	Turn-Off Fall Time				4.5	6	ns
t _{rr}	Body Diode Reverse Recovery Time	I _F =11.6A, dI/dt=100A/μs			19	21	ns
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =11.6A, dI/dt=100A/μs			9	12	nC

A: The value of R $_{\text{eJA}}$ is measured with the device mounted on 1in ² FR-4 board with 2oz. Copper, in a still air environment with T $_{\text{A}}$ =25°C. The value in any given application depends on the user's specific board design. The current rating is based on the t \leq 10s thermal resistance rating.

B: Repetitive rating, pulse width limited by junction temperature.

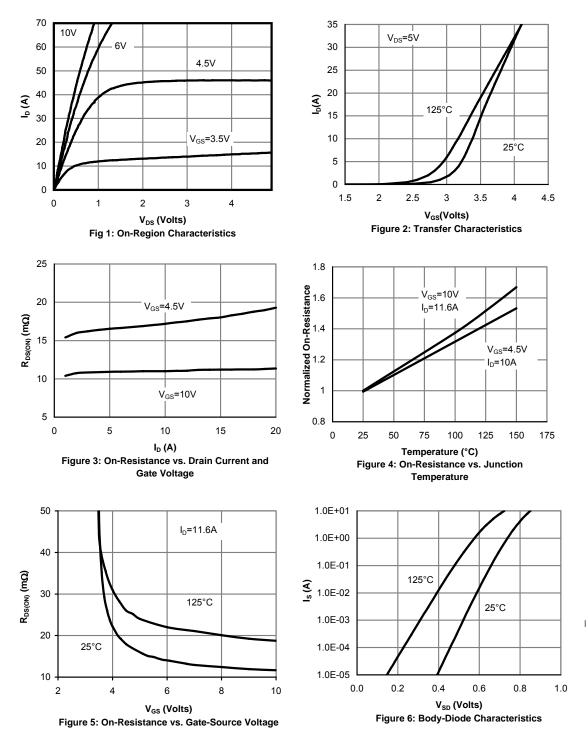
C. The R $_{\rm \theta JA}$ is the sum of the thermal impedence from junction to lead R $_{\rm \theta JL}$ and lead to ambient.

D. The static characteristics in Figures 1 to 6 are obtained using 80 $\,\mu s$ pulses, duty cycle 0.5% max.

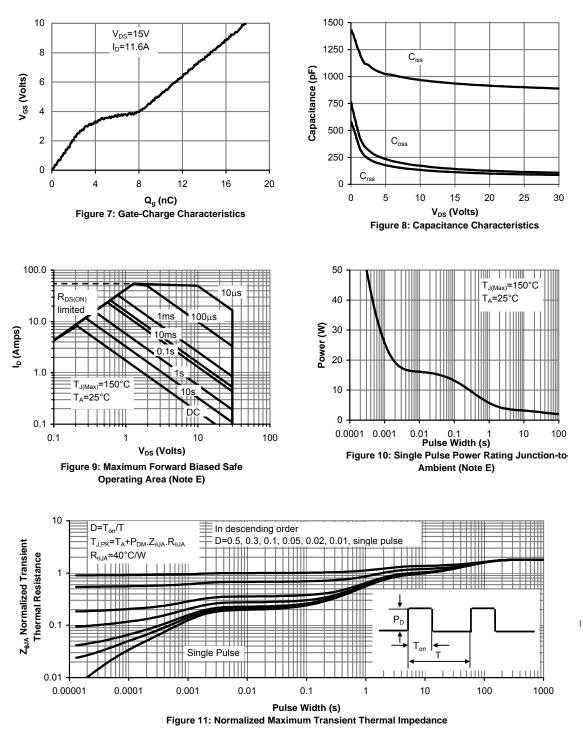
E. These tests are performed with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T _A=25°C. The SOA curve provides a single pulse rating.

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TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



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