



SPECIFICATIONS (T _C = 25 °C, unless otherwise noted)							
PARAMETER	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Static							
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0 V, I _D = 250 μA		40	-	-	V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA		3.4	3.8	5.0	
Gate-Source Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V		-	-	± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0 V	V _{DS} = 40 V	-	-	1.0	μA
		V _{GS} = 0 V	V _{DS} = 40 V, T _J = 125 °C	-	-	50	
		V _{GS} = 0 V	V _{DS} = 40 V, T _J = 175 °C	-	-	250	
On-State Drain Current ^a	I _{D(on)}	V _{GS} = 10 V	V _{DS} ≥ 5 V	50	-	-	A
Drain-Source On-State Resistance ^a	R _{DS(on)}	V _{GS} = 10 V	I _D = 20 A	-	0.0068	0.0090	Ω
		V _{GS} = 10 V	I _D = 20 A, T _J = 125 °C	-	-	0.015	
		V _{GS} = 10 V	I _D = 20 A, T _J = 125 °C	-	-	0.018	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 15 A		-	48	-	S
Dynamic ^b							
Input Capacitance	C _{iss}	V _{GS} = 0 V	V _{DS} = 25 V, f = 1 MHz	-	3390	4240	pF
Output Capacitance	C _{oss}			-	408	510	
Reverse Transfer Capacitance	C _{rss}			-	164	205	
Total Gate Charge ^c	Q _g	V _{GS} = 10 V	V _{DS} = 20 V, I _D = 50 A	-	51	76	nC
Gate-Source Charge ^c	Q _{gs}			-	19.4	-	
Gate-Drain Charge ^c	Q _{gd}			-	8.5	-	
Gate Resistance	R _g	f = 1 MHz		0.65	1.3	2	Ω
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 20 V, R _L = 0.4 Ω I _D ≥ 50 A, V _{GEN} = 10 V, R _g = 1 Ω		-	15	23	ns
Rise Time ^c	t _r			-	14	21	
Turn-Off Delay Time ^c	t _{d(off)}			-	23	35	
Fall Time ^c	t _f			-	8	12	
Source-Drain Diode Ratings and Characteristics ^b							
Pulsed Current ^a	I _{SM}			-	-	200	A
Forward Voltage	V _{SD}	I _F = 30 A, V _{GS} = 0 V		-	0.9	1.5	V

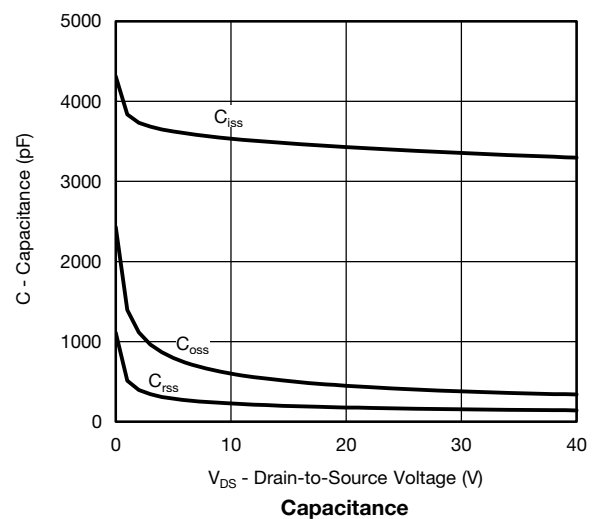
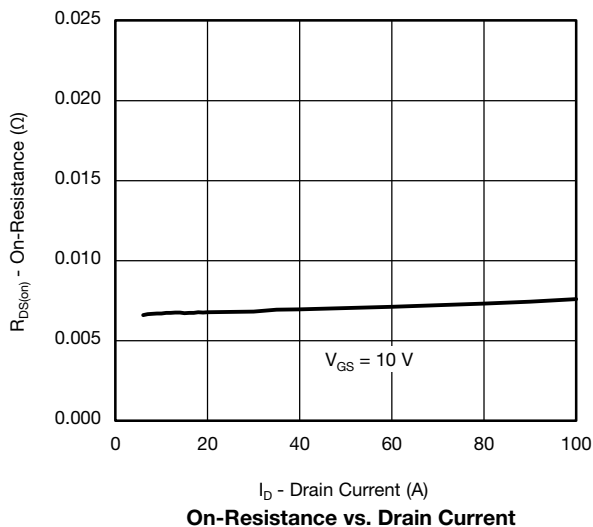
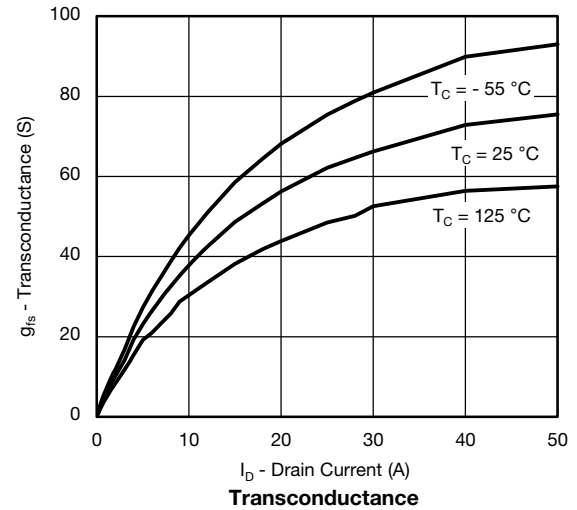
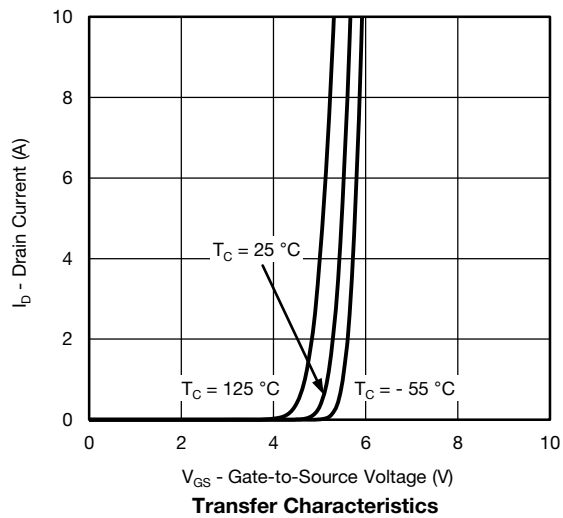
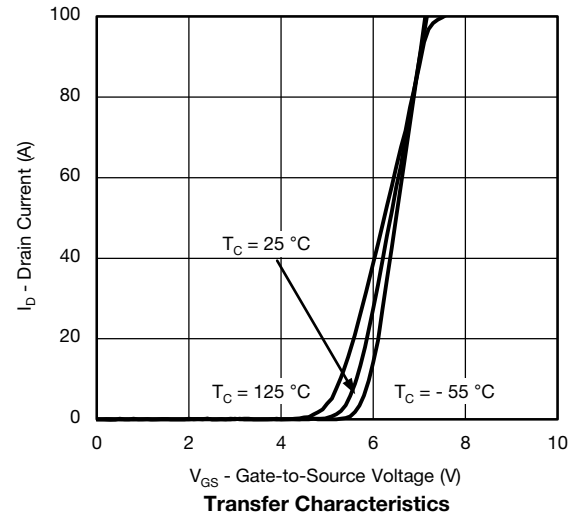
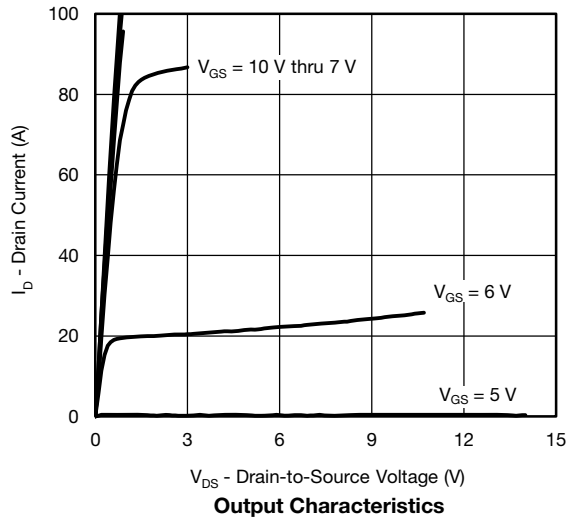
Notes

- a. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.
c. Independent of operating temperature.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

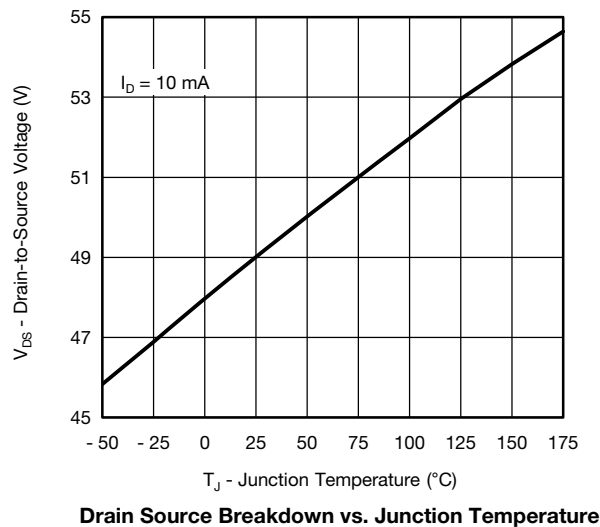
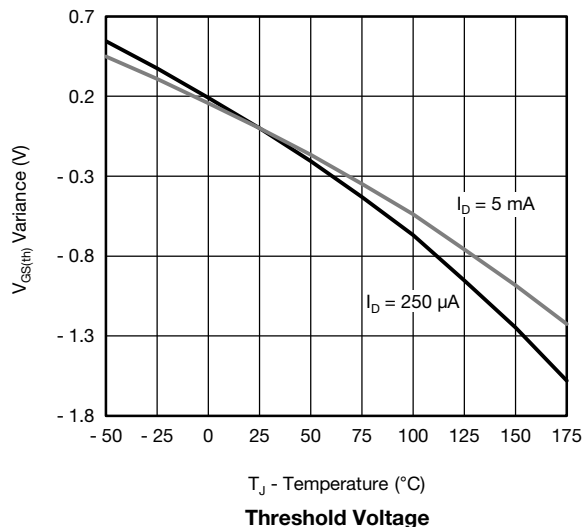
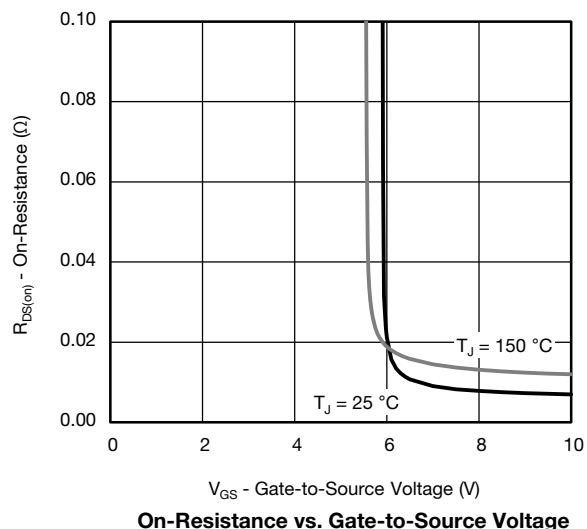
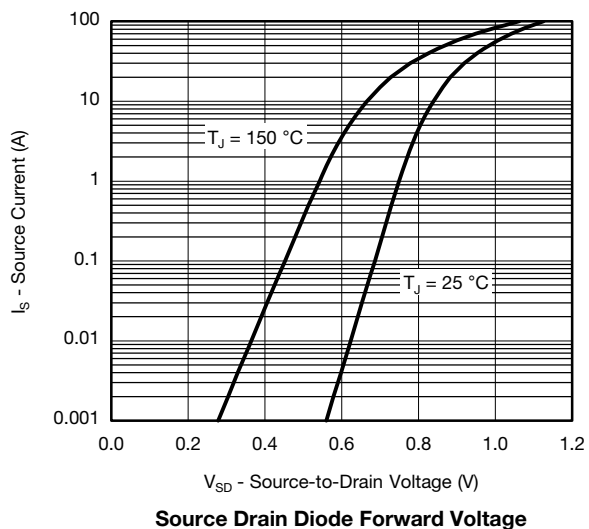
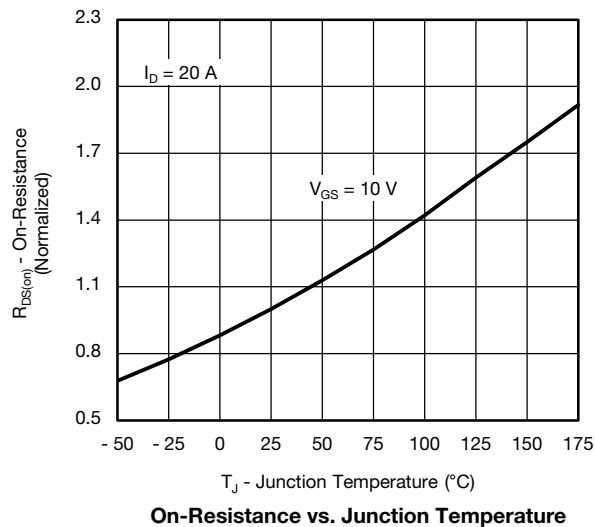
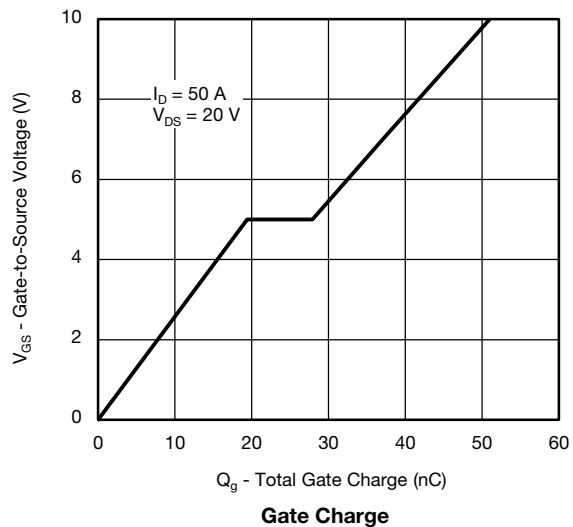


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise noted)



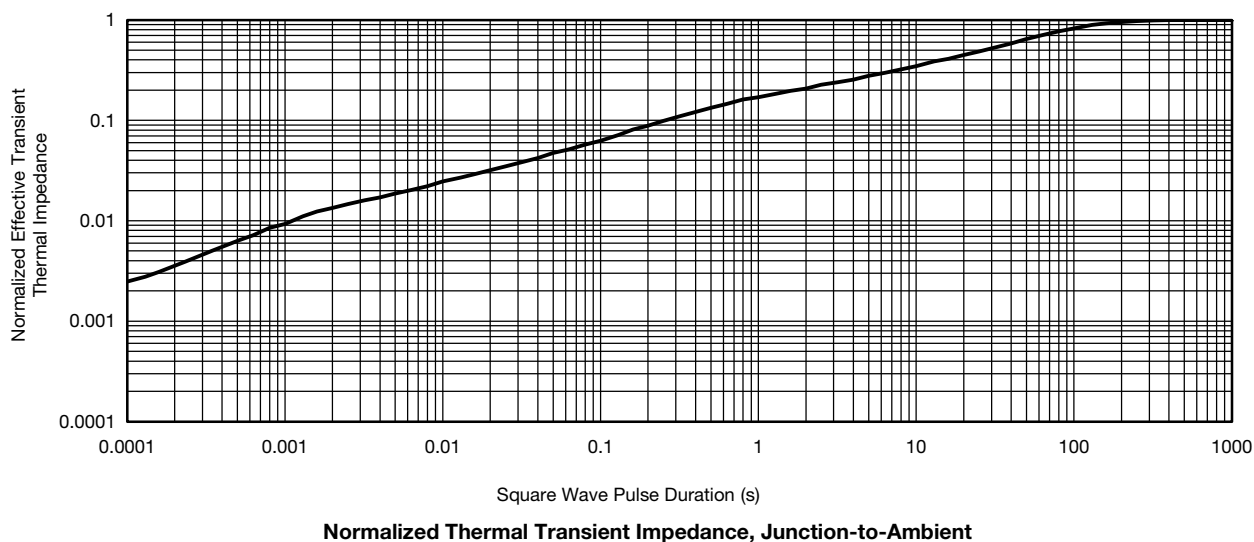
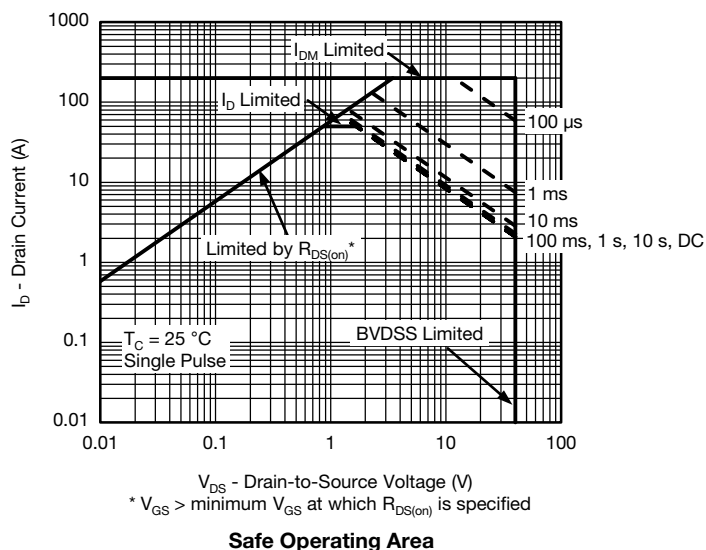


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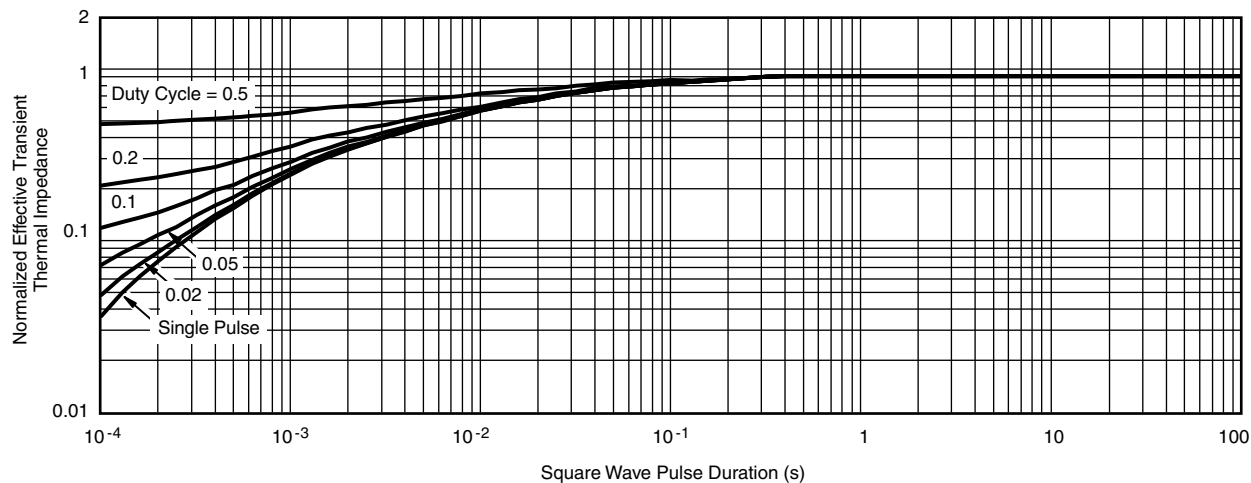


THERMAL RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)





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Normalized Thermal Transient Impedance, Junction-to-Case

Note

- The characteristics shown in the two graphs
 - Normalized Transient Thermal Impedance Junction-to-Ambient ($25\text{ }^{\circ}\text{C}$)
 - Normalized Transient Thermal Impedance Junction-to-Case ($25\text{ }^{\circ}\text{C}$)are given for general guidelines only to enable the user to get a “ball park” indication of part capabilities. The data are extracted from single pulse transient thermal impedance characteristics which are developed from empirical measurements. The latter is valid for the part mounted on printed circuit board - FR4, size 1" x 1" x 0.062", double sided with 2 oz. copper, 100 % on both sides. The part capabilities can widely vary depending on actual application parameters and operating conditions.

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