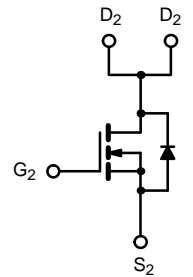
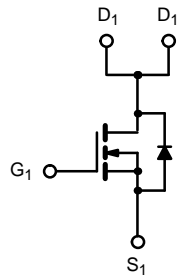
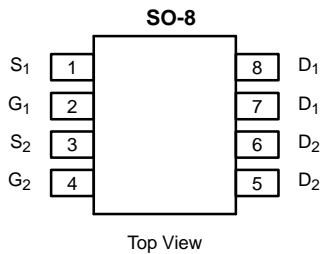




## Dual N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
Channel-1	30	0.022 @ V <sub>GS</sub> = 10 V	7.5
		0.030 @ V <sub>GS</sub> = 4.5 V	6.5
Channel-2		0.0135 @ V <sub>GS</sub> = 10 V	9.8
		0.0175 @ V <sub>GS</sub> = 4.5 V	8.5



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Channel-1		Channel-2		Unit	
		10 secs	Steady State	10 secs	Steady State		
Drain-Source Voltage	V <sub>DS</sub>	30				V	
Gate-Source Voltage	V <sub>GS</sub>	±20					
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	7.5	5.8	9.8	7.5	A
		T <sub>A</sub> = 70°C	6	4.6	7.8	6	
Pulsed Drain Current	I <sub>DM</sub>	30		40		A	
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	1.8	1.06	1.8	1.06		
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25°C	2	1.17	2	1.17	W
		T <sub>A</sub> = 70°C	1.78	0.75	1.28	0.75	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150				°C	

THERMAL RESISTANCE RATINGS							
Parameter	Symbol	Channel-1		Channel-2		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	t ≤ 10 sec	55	62.5	53	62.5	°C/W
		Steady-State	89	107	89	107	
Maximum Junction-to-Foot (Drain)	R <sub>thJC</sub>	36	45	34	42		

Notes

a. Surface Mounted on 1" x 1" FR4 Board.



MOSFET SPECIFICATIONS (T <sub>J</sub> = 25°C UNLESS OTHERWISE NOTED).							
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
<b>Static</b>							
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	Ch-1	0.8		V	
			Ch-2	1.0			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = 20 V	Ch-1		100	nA	
			Ch-2		100		
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24 V, V <sub>GS</sub> = 0 V	Ch-1		1	μA	
			Ch-2		1		
		V <sub>DS</sub> = 24 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85°C	Ch-1		15		
			Ch-2		15		
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 10 V	Ch-1	20		A	
			Ch-2	30			
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 7.5 A	Ch-1		0.018	0.022	Ω
		V <sub>GS</sub> = 10 V, I <sub>D</sub> = 9.8 A	Ch-2		0.011	0.0135	
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 6.5 A	Ch-1		0.024	0.030	
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 8.5 A	Ch-2		0.0145	0.0175	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 7.5 A	Ch-1		17	S	
		V <sub>DS</sub> = 15 V, I <sub>D</sub> = 9.8 A	Ch-2		30		
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.8 A, V <sub>GS</sub> = 0 V	Ch-1		0.72	1.1	V
		I <sub>S</sub> = 1.8 A, V <sub>GS</sub> = 0 V	Ch-2		0.72	1.1	
<b>Dynamic<sup>b</sup></b>							
Total Gate Charge	Q <sub>g</sub>	Channel-1 V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 5 V, I <sub>D</sub> = 7.5 A  Channel-2 V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 5 V, I <sub>D</sub> = -9.8 A	Ch-1		8.0	12	nC
			Ch-2		23	34	
Gate-Source Charge	Q <sub>gs</sub>		Ch-1		1.75		
			Ch-2		8.6		
Gate-Drain Charge	Q <sub>gd</sub>		Ch-1		3.2		
			Ch-2		7.2		
Turn-On Delay Time	t <sub>d(on)</sub>	Channel-1 V <sub>DD</sub> = 15 V, R <sub>L</sub> = 15 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 6 Ω	Ch-1		10	20	ns
		Ch-2		17	30		
Rise Time	t <sub>r</sub>	Channel-1	Ch-1		5	10	
		Channel-2	Ch-2		10	20	
Turn-Off Delay Time	t <sub>d(off)</sub>	Channel-1	Ch-1		26	50	
		Channel-2	Ch-2		60	100	
Fall Time	t <sub>f</sub>	Channel-1	Ch-1		10	16	
		Channel-2	Ch-2		17	30	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.8 A, di/dt = 100 A/μs	Ch-1		30	60	
		I <sub>F</sub> = 1.8 A, di/dt = 100 μA/μs	Ch-2		40	70	

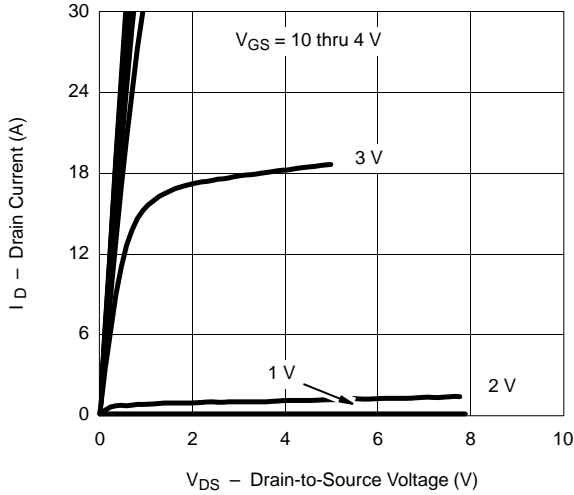
## Notes

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.  
b. Guaranteed by design, not subject to production testing.

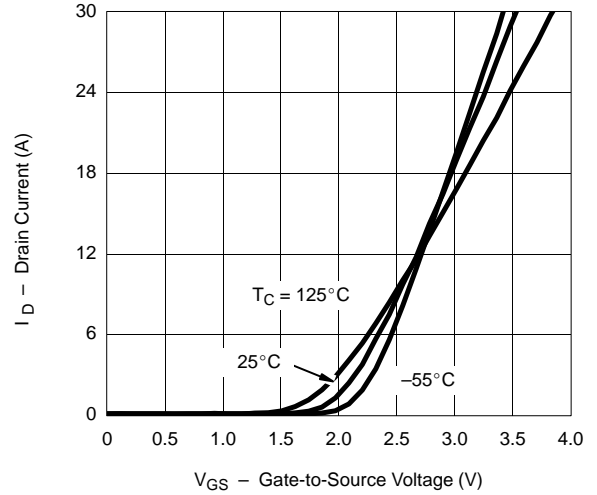


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)** **CHANNEL-1**

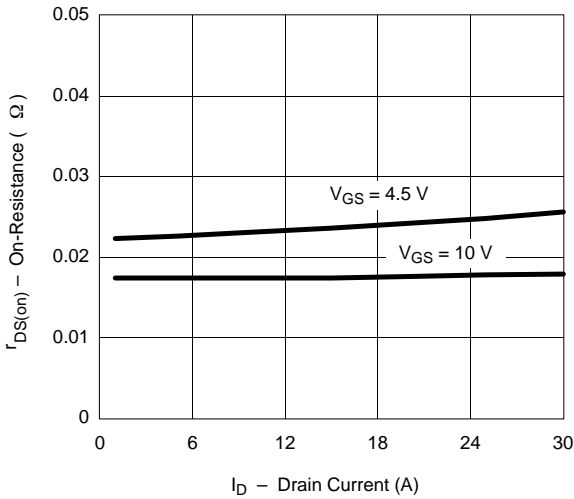
Output Characteristics



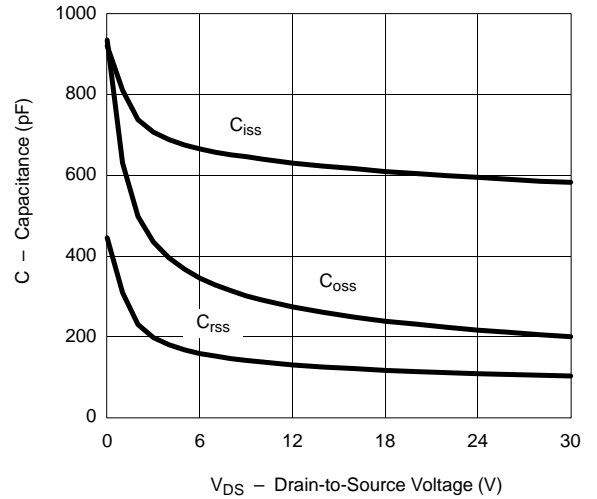
Transfer Characteristics



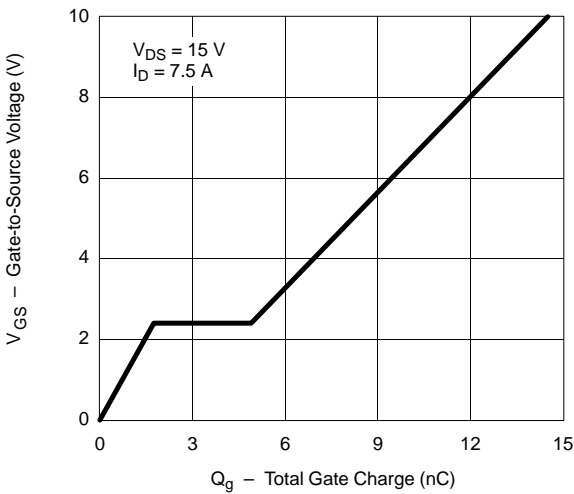
On-Resistance vs. Drain Current



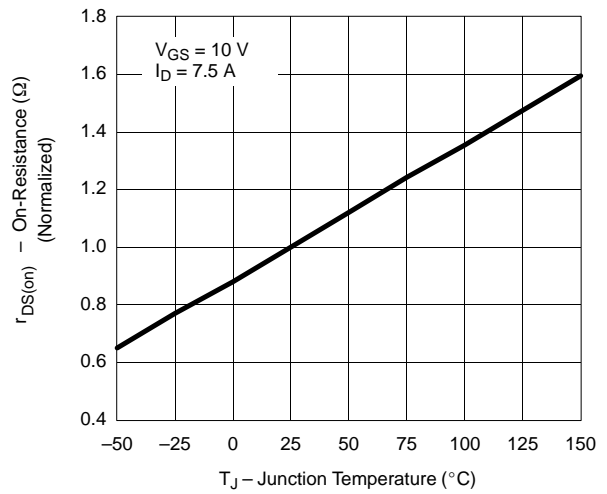
Capacitance



Gate Charge

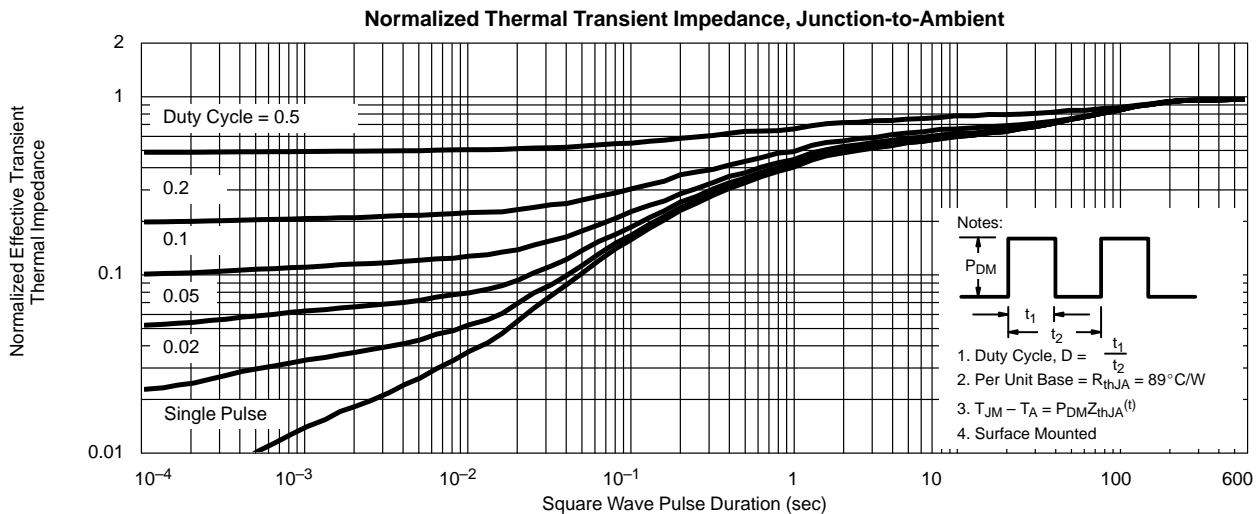
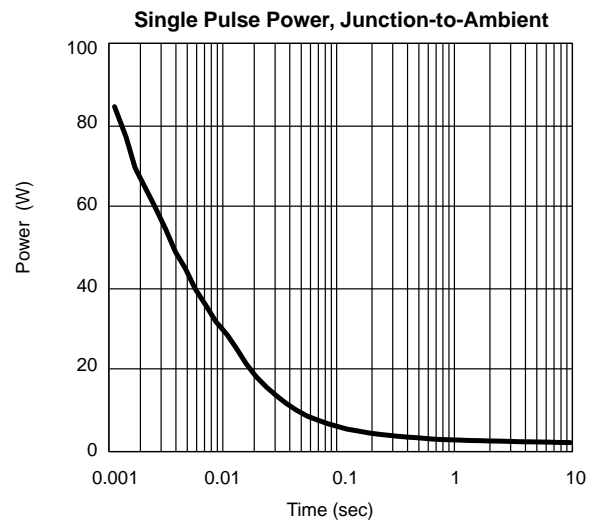
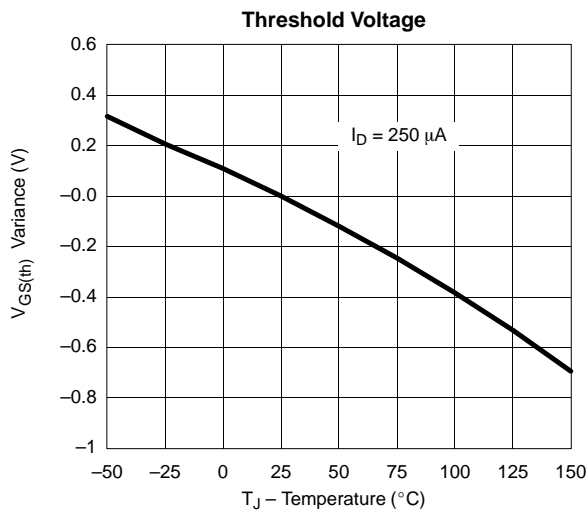
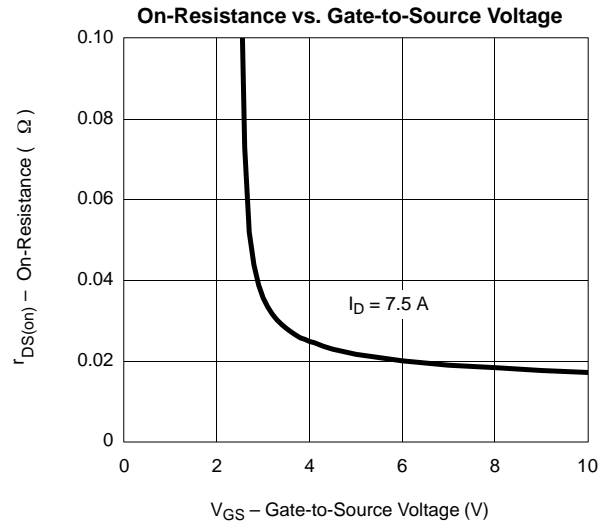
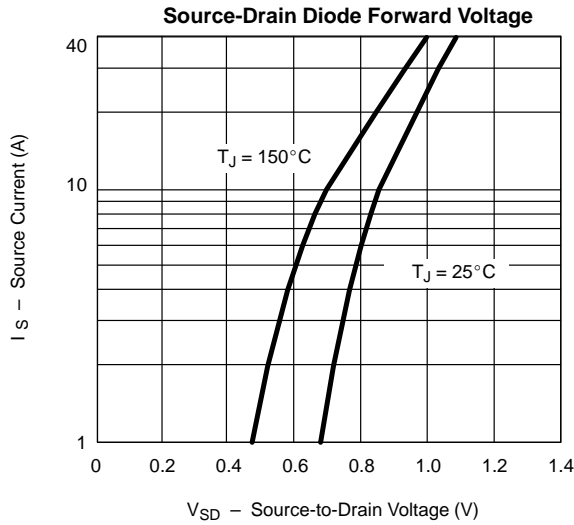


On-Resistance vs. Junction Temperature



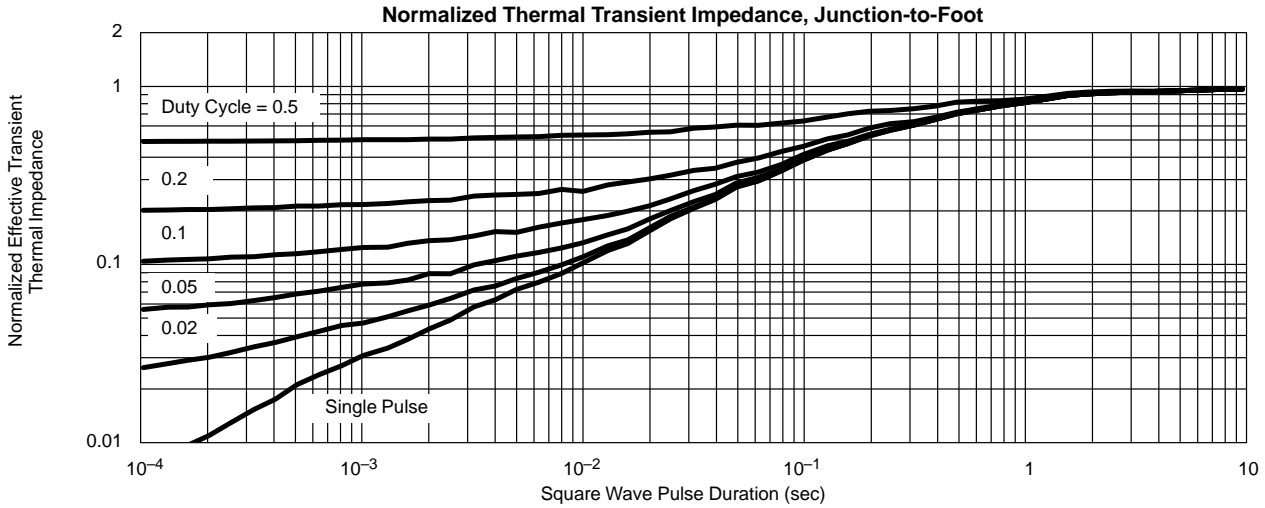


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL-1**

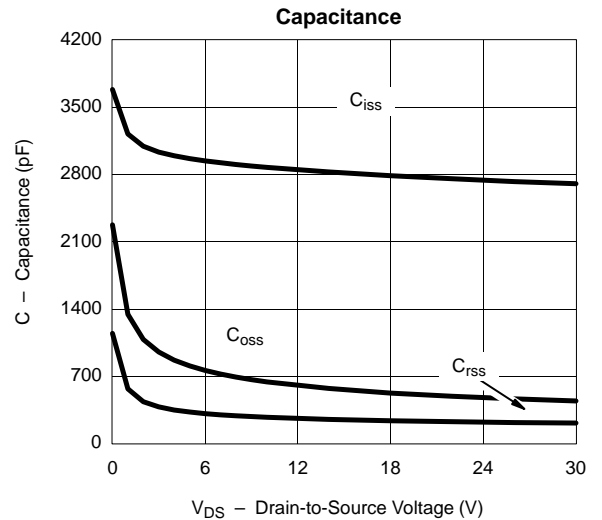
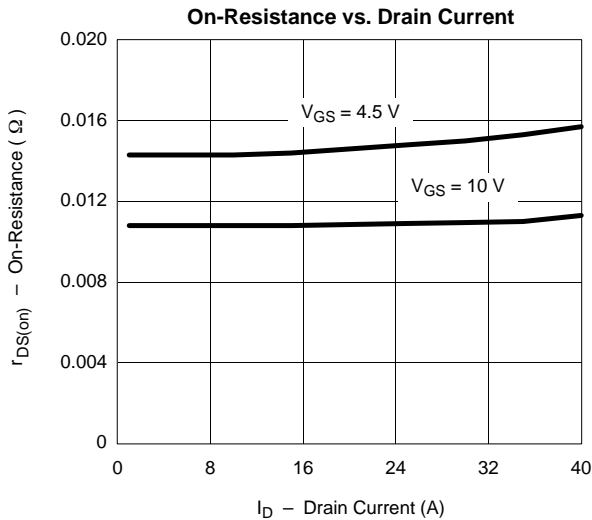
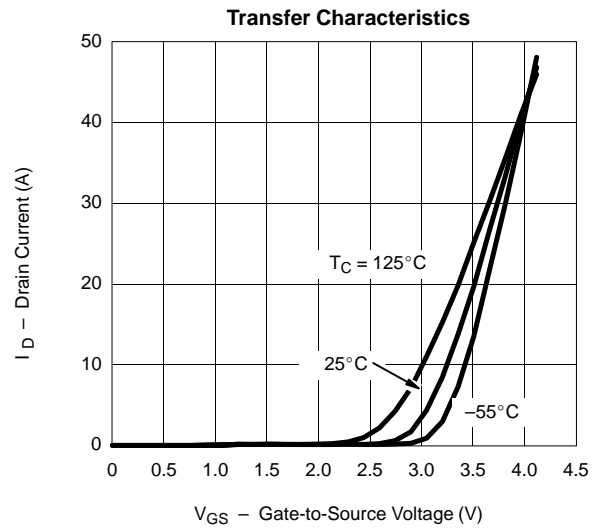
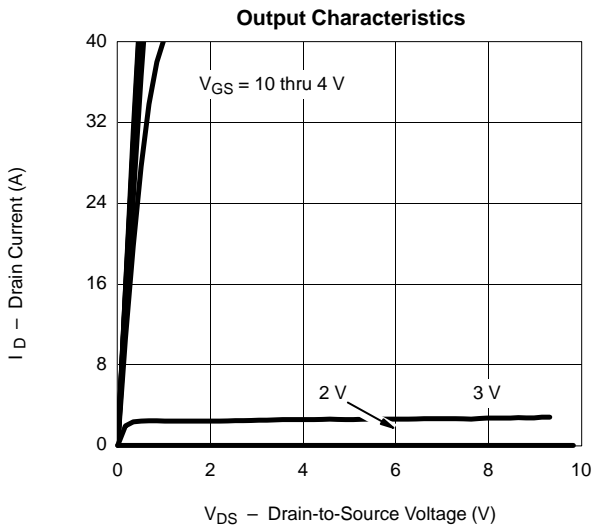




**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL-1**



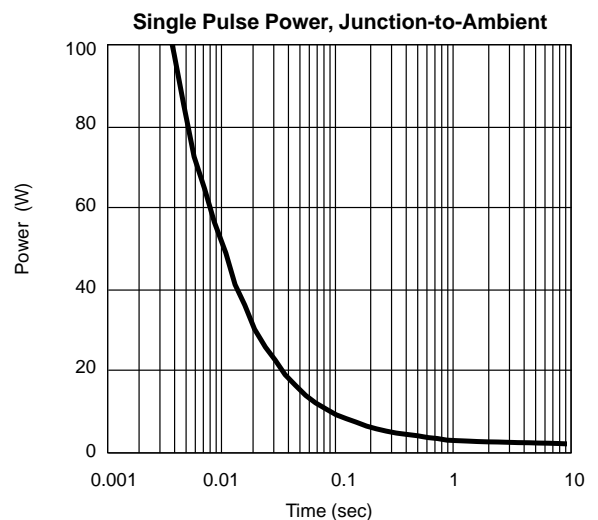
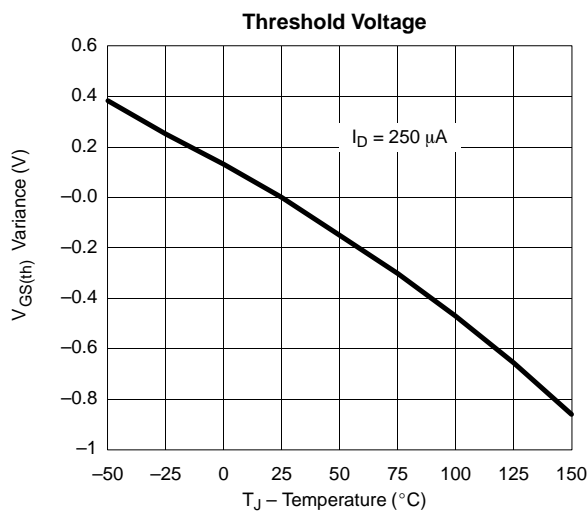
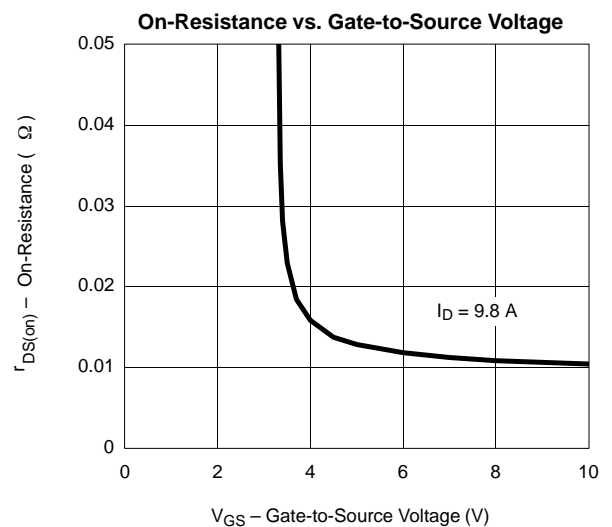
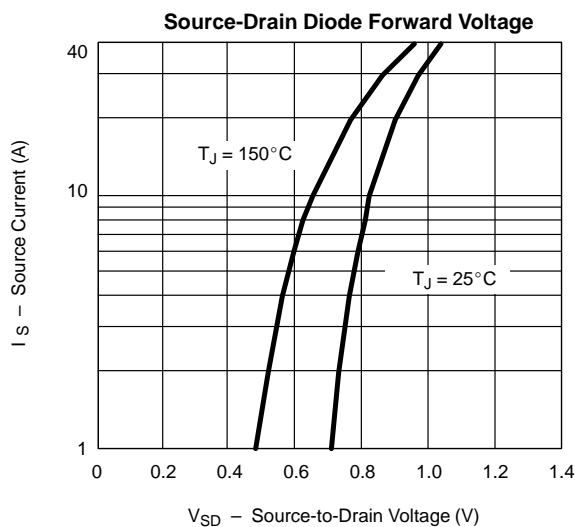
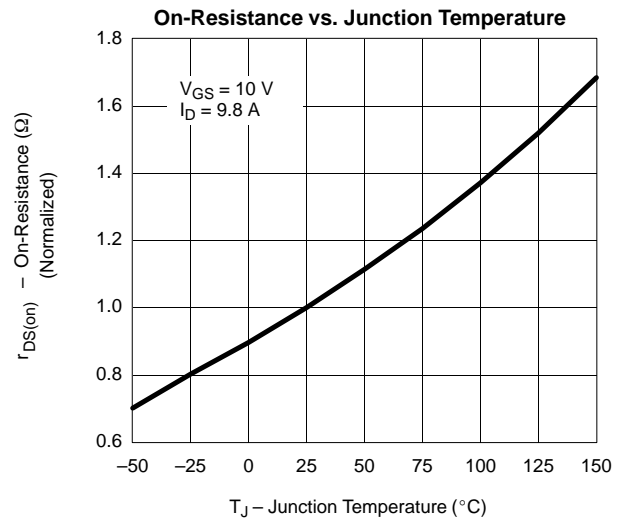
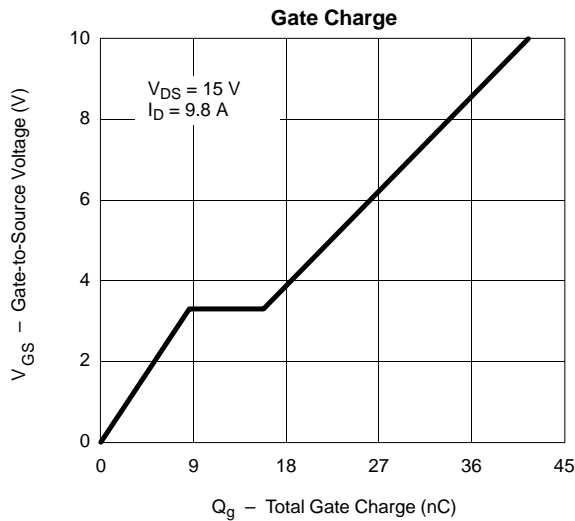
**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL-2**





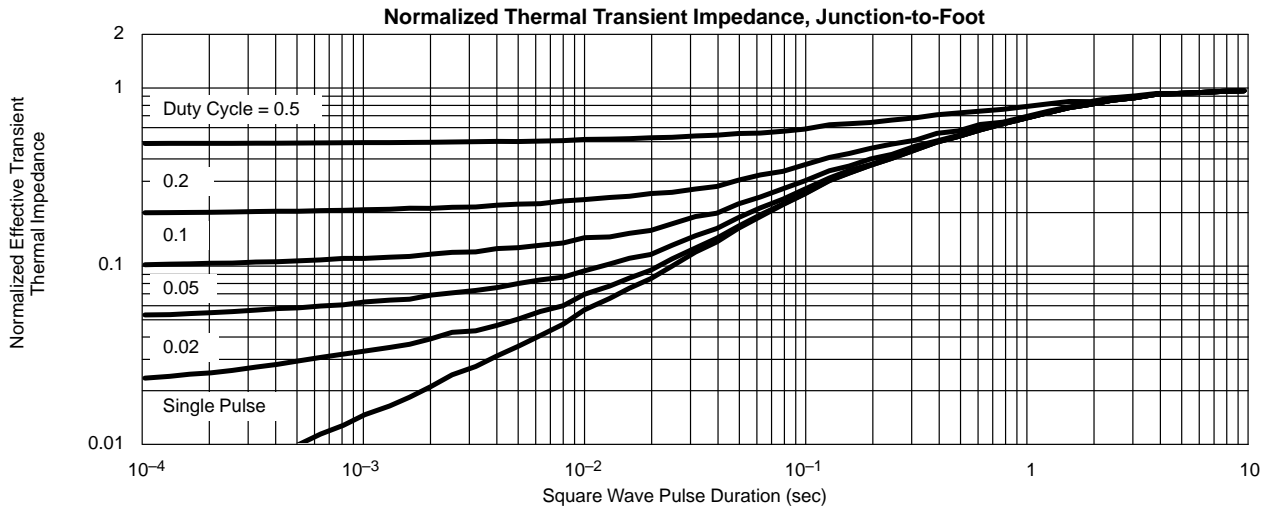
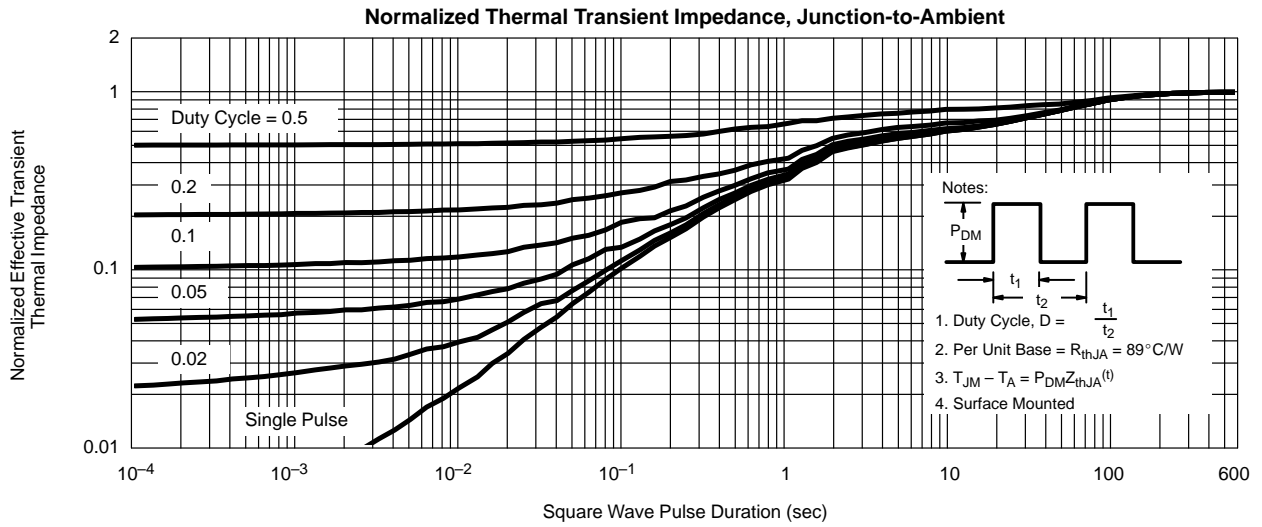
**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

**CHANNEL-2**





**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)** **CHANNEL-2**



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