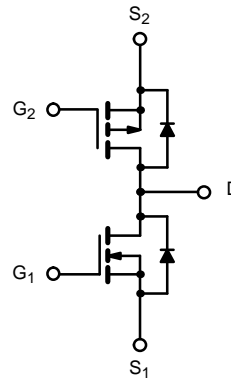
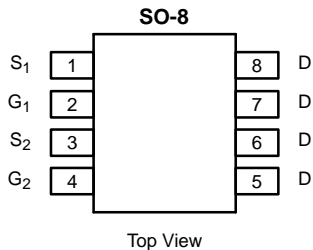


## N- and P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
N-Channel	30	0.040 @ V <sub>GS</sub> = 10 V	± 6
		0.060 @ V <sub>GS</sub> = 4.5 V	± 4.8
P-Channel	-30	0.040 @ V <sub>GS</sub> = -10 V	± 6
		0.070 @ V <sub>GS</sub> = -4.5 V	± 4.4



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)				
Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	-30	V
Gate-Source Voltage	V <sub>GS</sub>	± 20	± 20	
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25 °C	± 6	A
		T <sub>A</sub> = 70 °C	± 4.7	
Pulsed Drain Current	I <sub>DM</sub>	± 30	± 30	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	2	-2	
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25 °C	2.4	W
		T <sub>A</sub> = 70 °C	1.5	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150		°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	N- or P- Channel	Unit
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	52	°C/W

**Notes**

a. Surface Mounted on FR4 Board, t ≤ 10 sec.



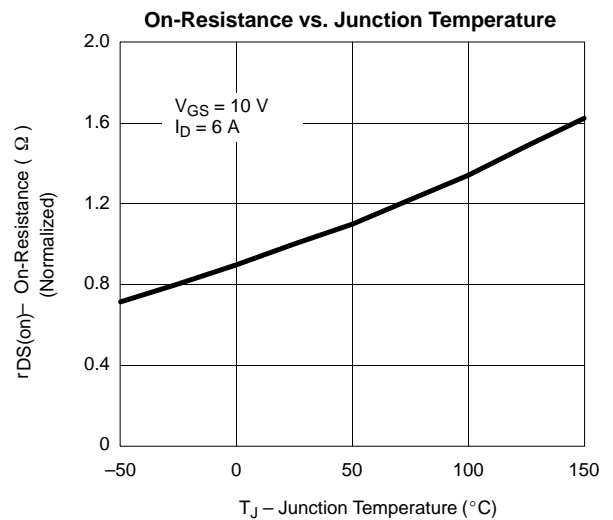
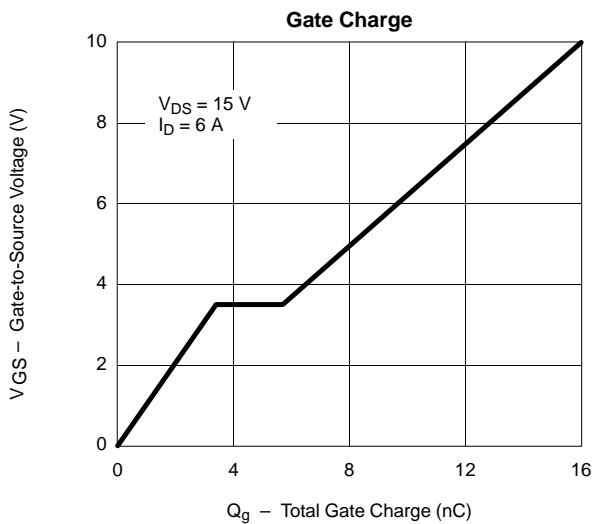
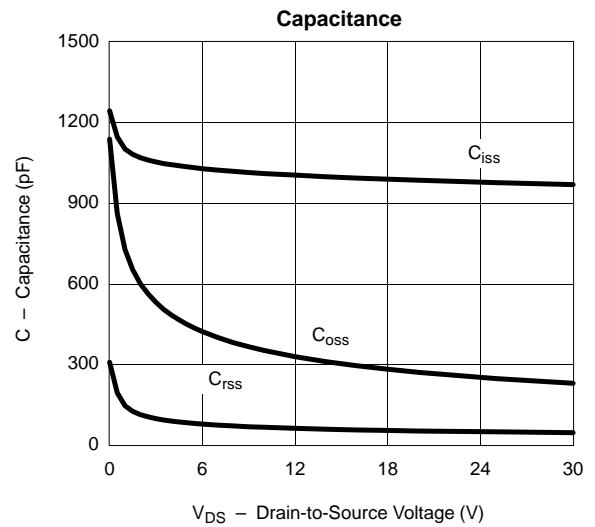
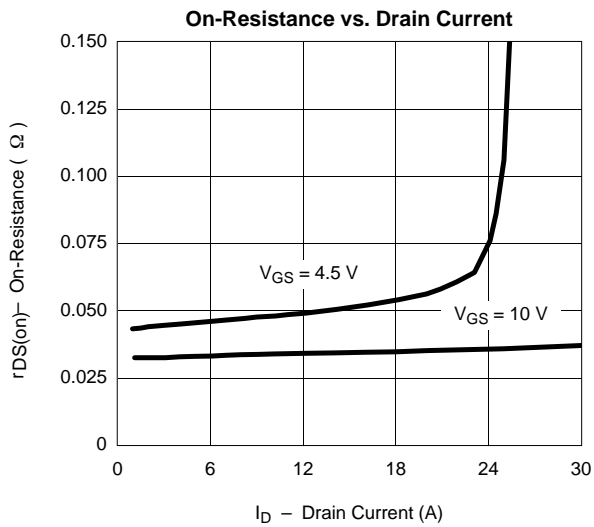
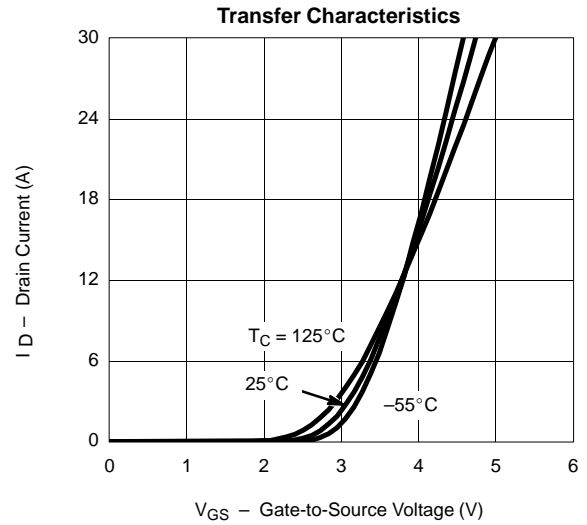
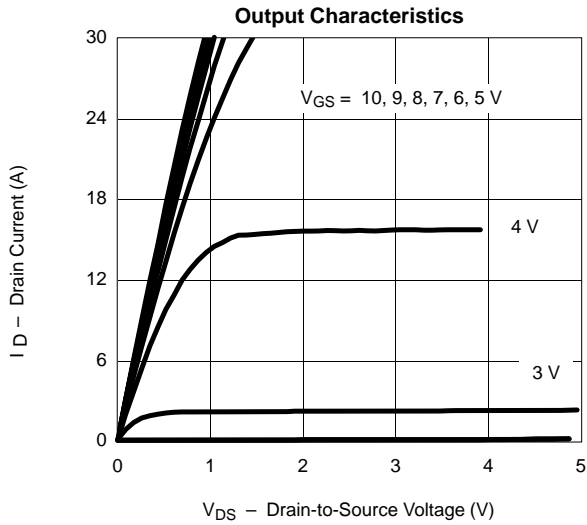
<b>SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>							
Parameter	Symbol	Test Condition		Min	Typ <sup>a</sup>	Max	Unit
<b>Static</b>							
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	N-Ch	1.0			V
		V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	P-Ch	-1.0			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V				±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0 V	N-Ch			1	μA
		V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0 V	P-Ch			-1	
		V <sub>DS</sub> = 24 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C	N-Ch			5	
		V <sub>DS</sub> = -24 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C	P-Ch			-5	
On-State Drain Current <sup>b</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 10 V	N-Ch	30			A
		V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -10 V	P-Ch	-30			
		V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 4.5 V	N-Ch	8.0			
		V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	P-Ch	-8.0			
Drain-Source On-State Resistance <sup>b</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 6 A	N-Ch		0.032	0.040	Ω
		V <sub>GS</sub> = -10 V, I <sub>D</sub> = -6 A	P-Ch		0.032	0.040	
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 4.8 A	N-Ch		0.045	0.060	
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -4.4 A	P-Ch		0.056	0.070	
Forward Transconductance <sup>b</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 6 A	N-Ch		13		S
		V <sub>DS</sub> = -15 V, I <sub>D</sub> = -6 A	P-Ch		10.6		
Diode Forward Voltage <sup>b</sup>	V <sub>SD</sub>	I <sub>S</sub> = 2 A, V <sub>GS</sub> = 0 V	N-Ch		0.77	1.2	V
		I <sub>S</sub> = -2 A, V <sub>GS</sub> = 0 V	P-Ch		0.77	-1.2	
<b>Dynamic<sup>a</sup></b>							
Total Gate Charge	Q <sub>g</sub>	N-Channel V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 10 V, I <sub>D</sub> = 6 A  P-Channel V <sub>DS</sub> = -15 V, V <sub>GS</sub> = -10 V I <sub>D</sub> = -6 A	N-Ch		16	30	nC
Gate-Source Charge	Q <sub>gs</sub>		P-Ch		22	35	
Gate-Drain Charge	Q <sub>gd</sub>		N-Ch		3.4		
Turn-On Delay Time	t <sub>d(on)</sub>	N-Channel 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  P-Channel 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	N-Ch		12	25	ns
			P-Ch		12	25	
Rise Time	t <sub>r</sub>		N-Ch		12	25	
			P-Ch		12	25	
Turn-Off Delay Time	t <sub>d(off)</sub>		N-Ch		27	55	
			P-Ch		38	55	
Fall Time	t <sub>f</sub>		N-Ch		24	50	
			P-Ch		25	50	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 2 A, di/dt = 100 A/μs	N-Ch		45	80	
		I <sub>F</sub> = -2 A, di/dt = 100 A/μs	P-Ch		50	80	

Notes

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

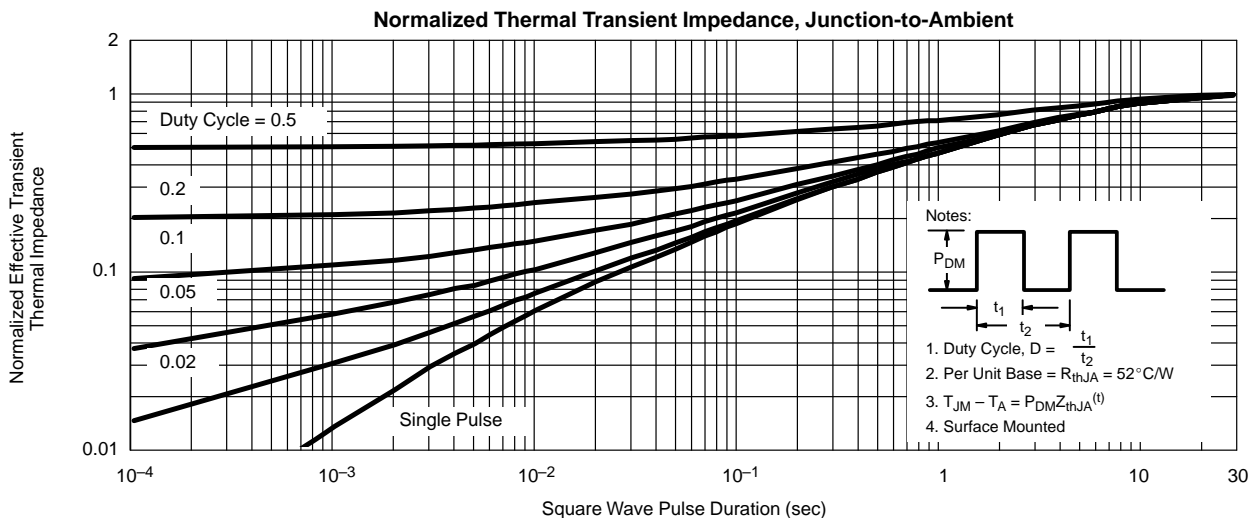
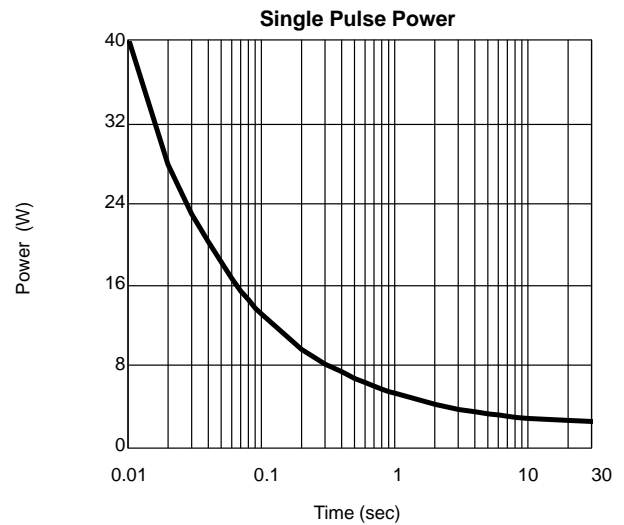
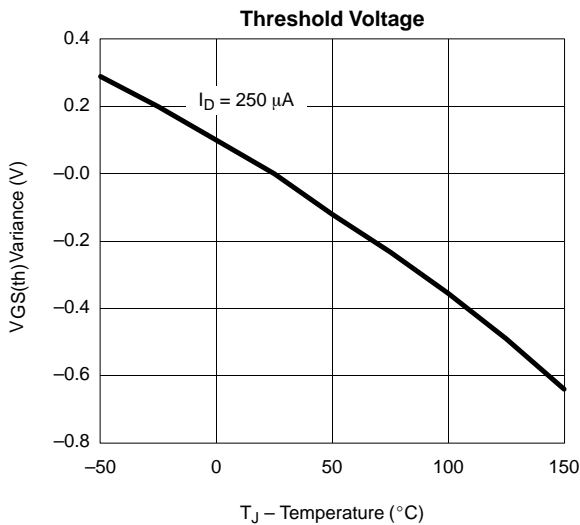
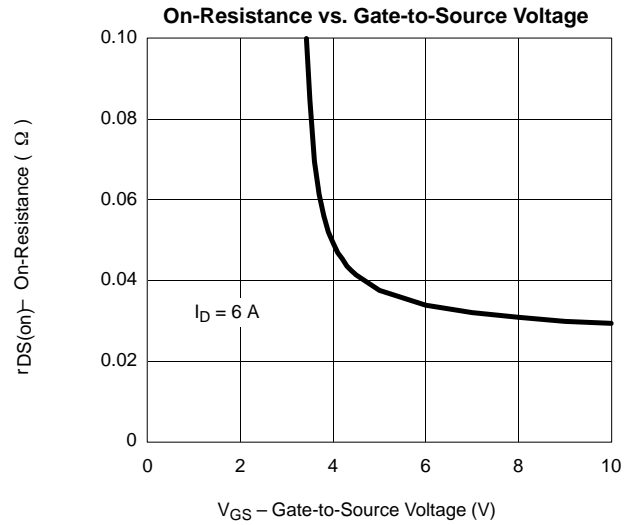
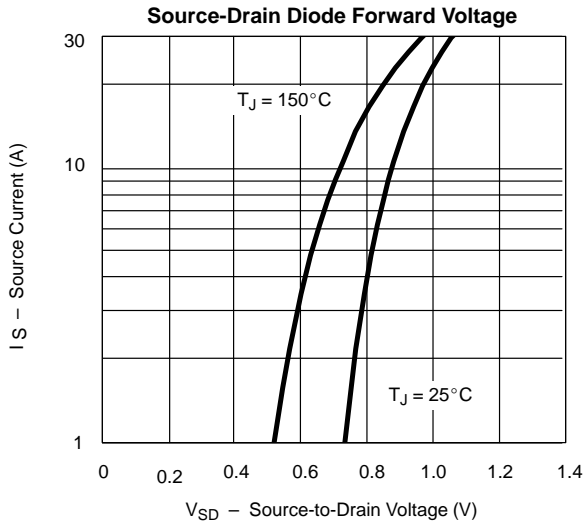


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL**



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

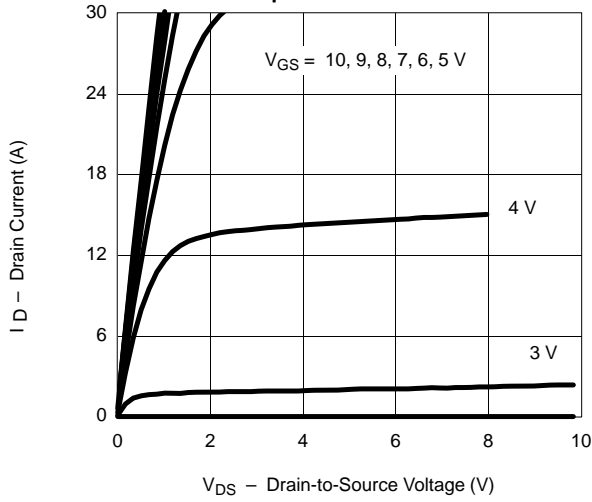
**N-CHANNEL**



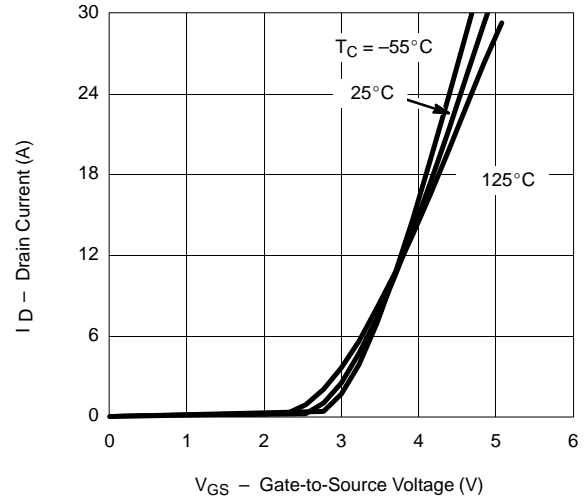


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) P-CHANNEL**

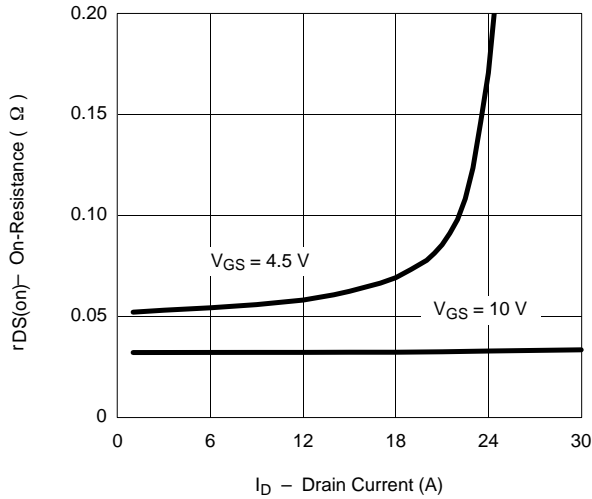
**Output Characteristics**



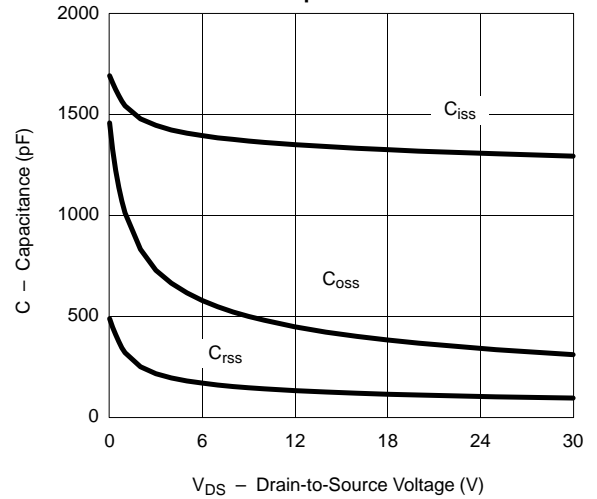
**Transfer Characteristics**



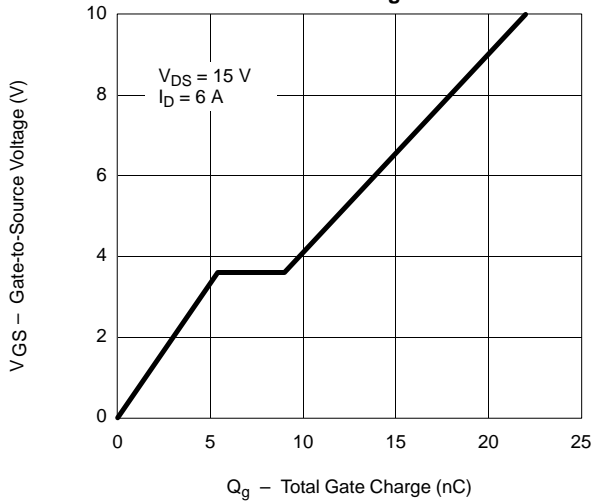
**On-Resistance vs. Drain Current**



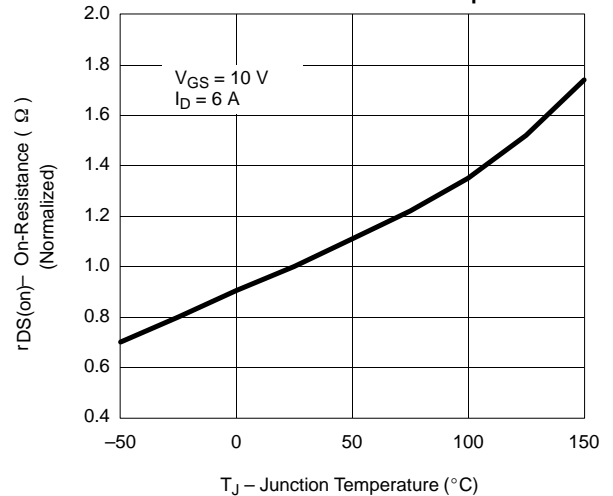
**Capacitance**



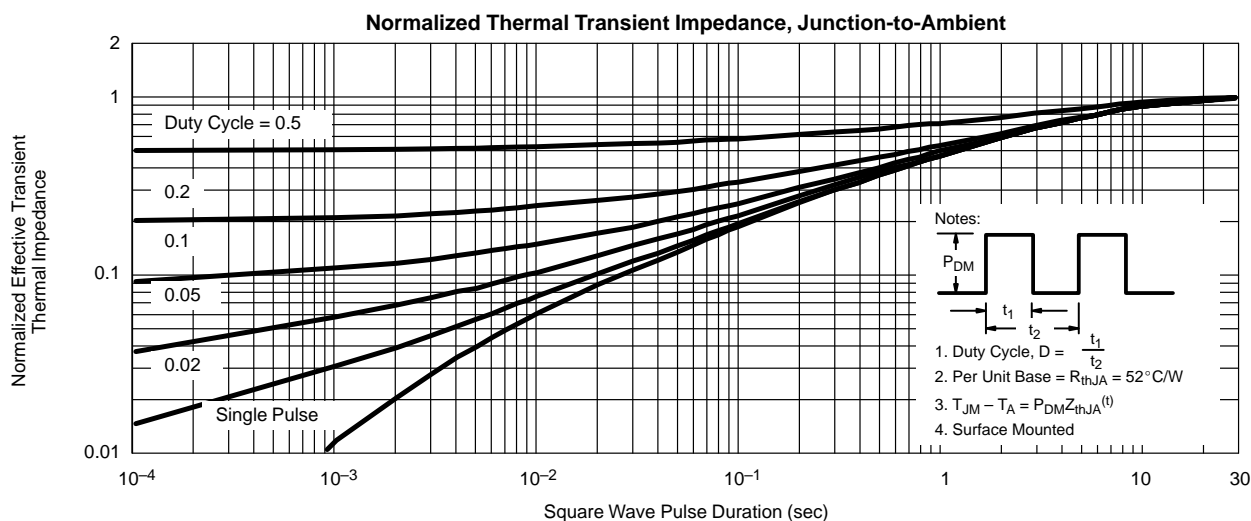
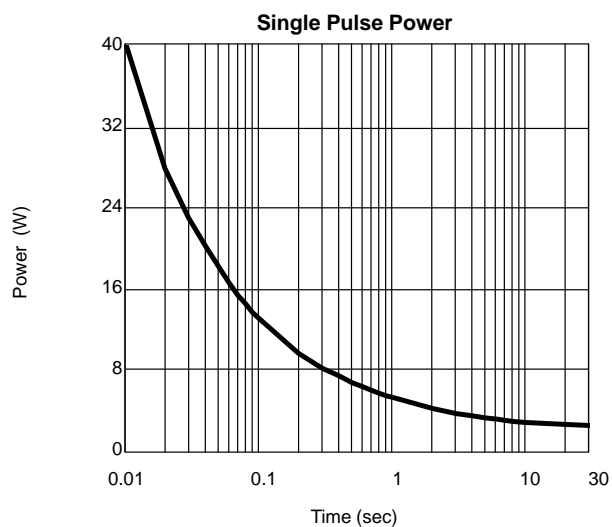
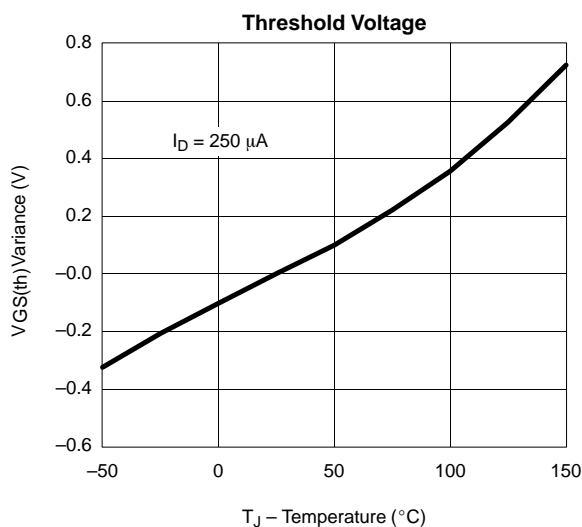
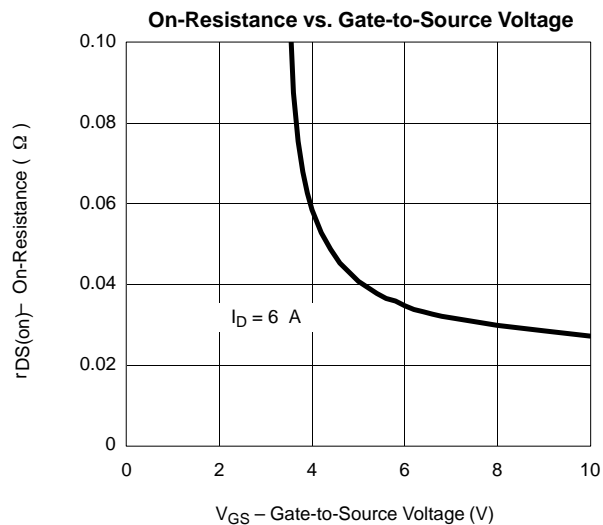
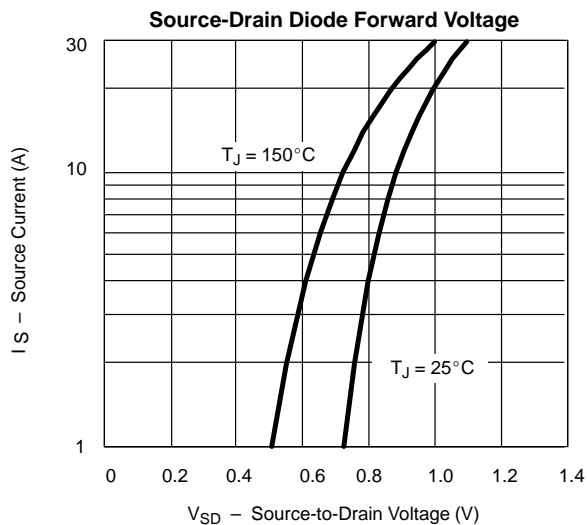
**Gate Charge**



**On-Resistance vs. Junction Temperature**



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





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