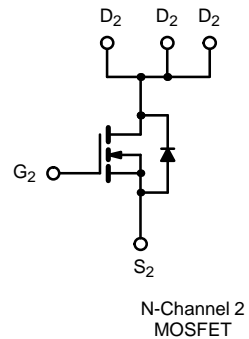
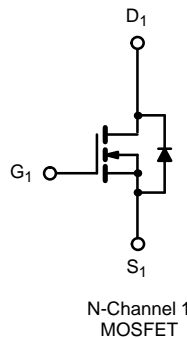
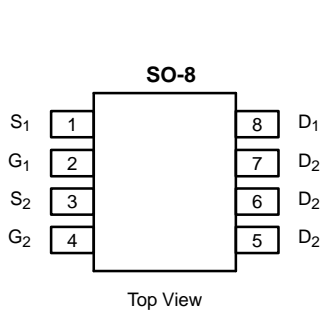




Asymmetrical Dual N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
Channel-1	30	0.022 @ V _{GS} = 10 V	6.3
		0.030 @ V _{GS} = 4.5 V	5.4
Channel-2		0.0125 @ V _{GS} = 10 V	10.5
		0.017 @ V _{GS} = 4.5 V	9.0



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Channel 1		Channel 2		Unit	
		10 secs	Steady State	10 secs	Steady State		
Drain-Source Voltage	V _{DS}	30				V	
Gate-Source Voltage	V _{GS}	20					
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	6.3	5.3	10.5	7.5	A
		T _A = 70°C	5.4	4.2	8.5	6.0	
Pulsed Drain Current	I _{DM}	30		40		A	
Continuous Source Current (Diode Conduction) ^a	I _S	1.3	0.9	2.2	1.15		
Maximum Power Dissipation ^a	P _D	T _A = 25°C	1.4	1.0	2.4	1.25	W
		T _A = 70°C	0.9	0.64	1.5	0.80	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150				°C	

THERMAL RESISTANCE RATINGS							
Parameter	Symbol	Channel 1		Channel 2		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient ^a	R _{thJA}	t ≤ 10 sec	72	90	43	53	°C/W
		Steady-State	100	125	82	100	
Maximum Junction-to-Foot (Drain)	R _{thJC}	51	63	25	30		

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



MOSFET SPECIFICATIONS (T _J = 25°C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	Ch-1	0.8		V	
			Ch-2	0.8			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = 20 V	Ch-1		100	nA	
			Ch-2		100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	Ch-1		1	μA	
			Ch-2		1		
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 85°C	Ch-1		15		
			Ch-2		15		
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	Ch-1	20		A	
			Ch-2	30			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.3 A	Ch-1		0.018	0.022	Ω
		V _{GS} = 10 V, I _D = 10.5 A	Ch-2		0.0105	0.0125	
		V _{GS} = 4.5 V, I _D = 5.4 A	Ch-1		0.024	0.030	
		V _{GS} = 4.5 V, I _D = 9.0 A	Ch-2		0.0135	0.017	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 6.3 A	Ch-1		17	S	
		V _{DS} = 15 V, I _D = 10.5 A	Ch-2		28		
Diode Forward Voltage ^a	V _{SD}	I _S = 1.3 A, V _{GS} = 0 V	Ch-1		0.7	1.1	V
		I _S = 2.2 A, V _{GS} = 0 V	Ch-2		0.72	1.1	
Dynamic^b							
Total Gate Charge	Q _g	Channel-1 V _{DS} = 15 V, V _{GS} = 5 V, I _D = 6.3 A Channel-2 V _{DS} = 15 V, V _{GS} = 5 V, I _D = -10.5 A	Ch-1		8.0	12	nC
			Ch-2		18	25	
Gate-Source Charge	Q _{gs}		Ch-1		1.75		
			Ch-2		3.6		
Gate-Drain Charge	Q _{gd}		Ch-1		3.2		
			Ch-2		7.8		
Turn-On Delay Time	t _{d(on)}	Channel-1 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω	Ch-1		10	20	ns
		Ch-2		13	30		
Rise Time	t _r	Channel-2 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω	Ch-1		5	10	
		Ch-2		10	20		
Turn-Off Delay Time	t _{d(off)}	Channel-1	Ch-1		26	50	
		Channel-2	Ch-2		37	80	
Fall Time	t _f	Channel-1	Ch-1		8	16	
		Channel-2	Ch-2		27	50	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.3 A, di/dt = 100 A/μs	Ch-1		30	60	
		I _F = 2.2 A, di/dt = 100 μA/μs	Ch-2		35	70	

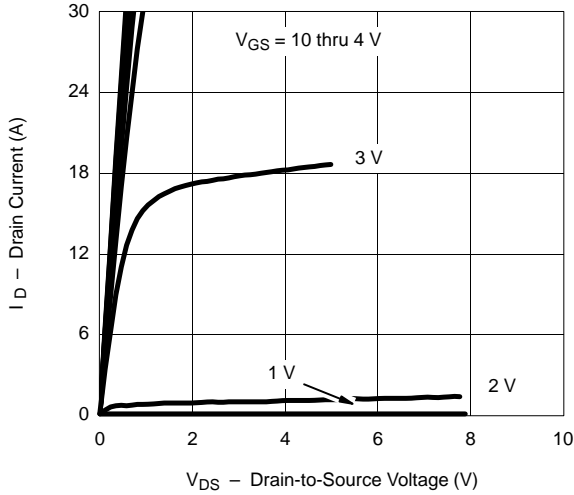
Notes

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

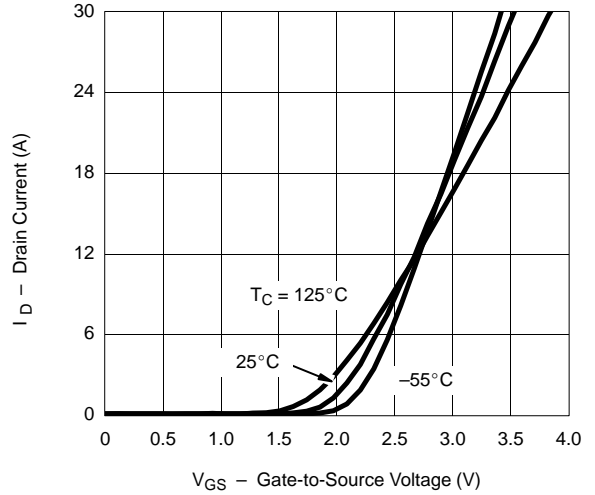


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL 1

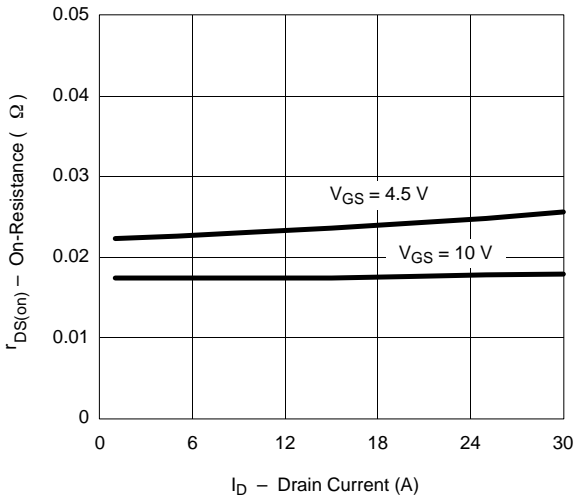
Output Characteristics



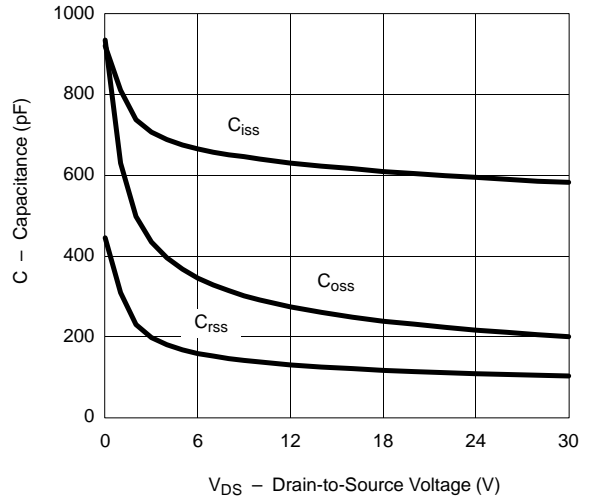
Transfer Characteristics



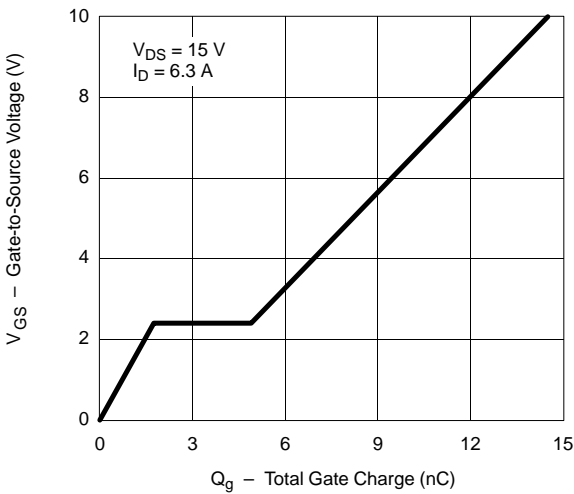
On-Resistance vs. Drain Current



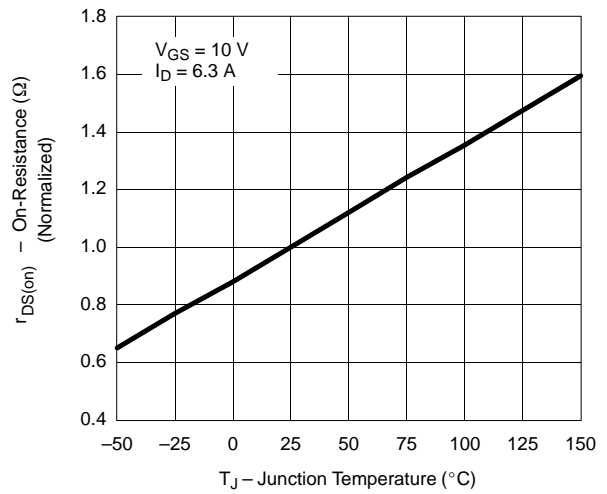
Capacitance



Gate Charge



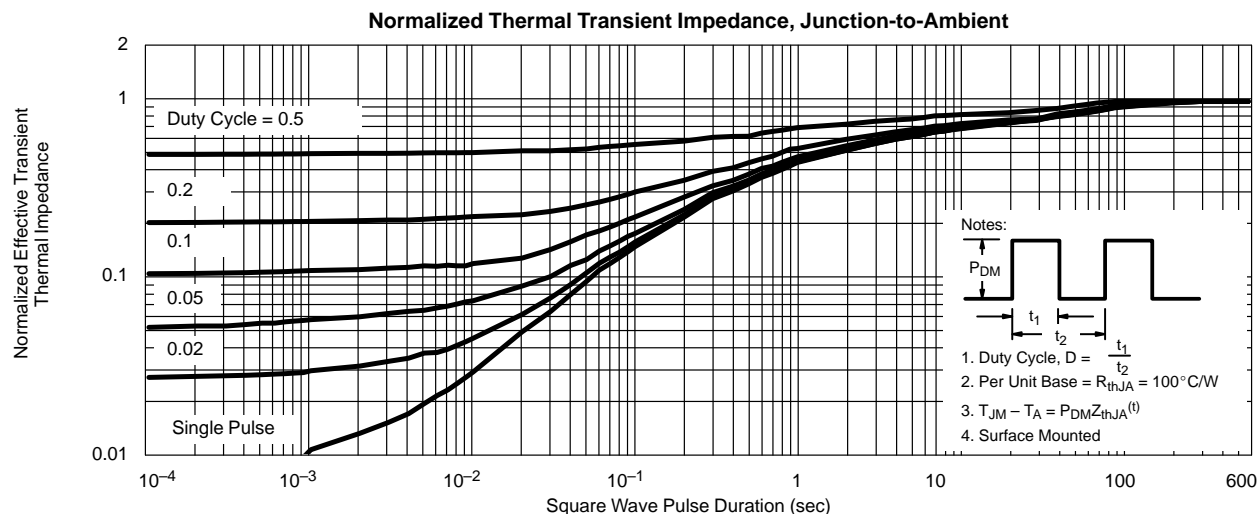
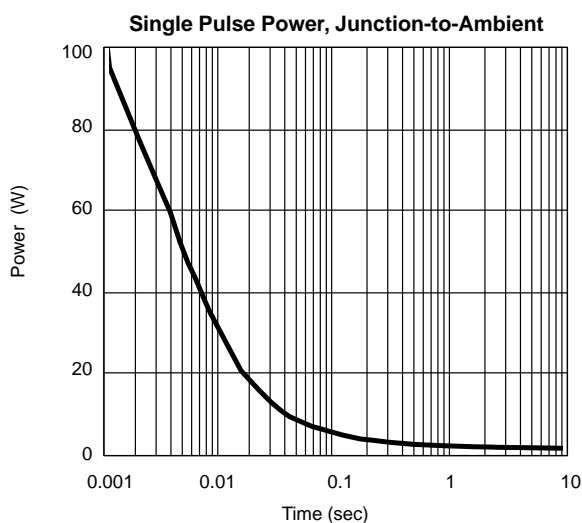
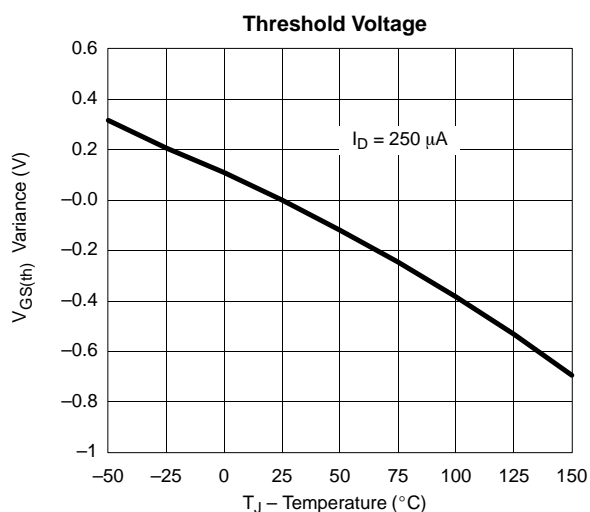
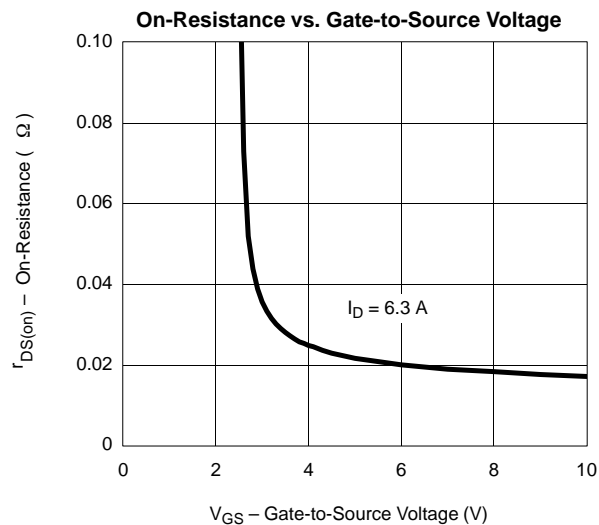
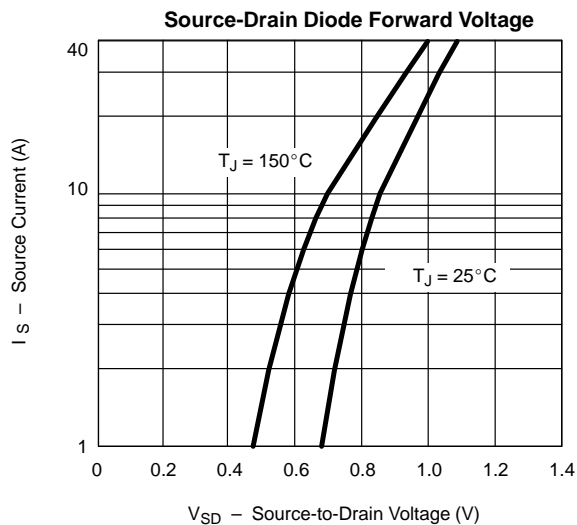
On-Resistance vs. Junction Temperature





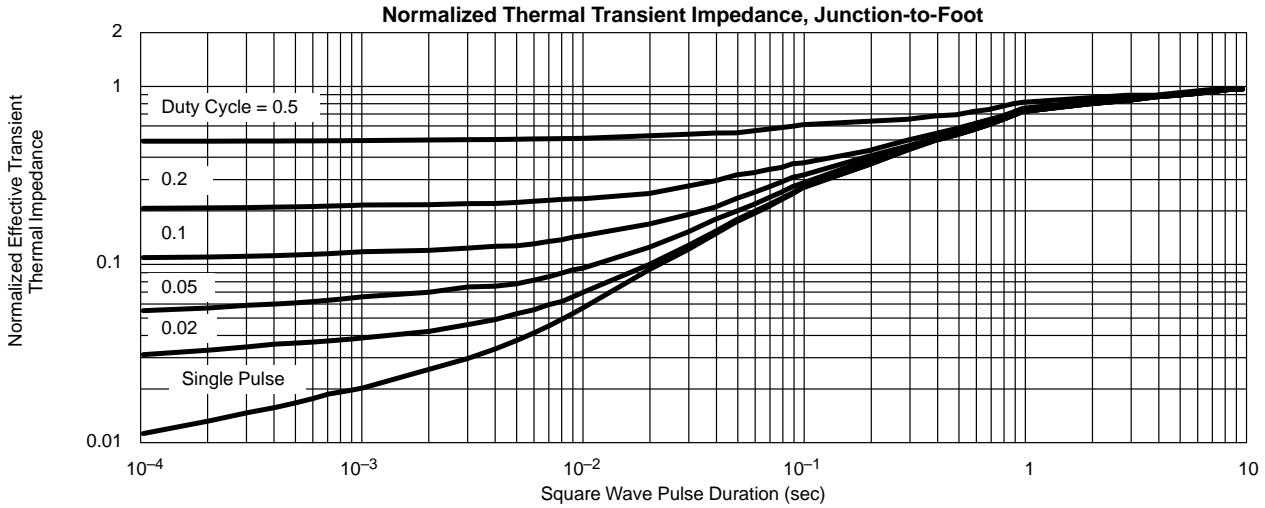
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1

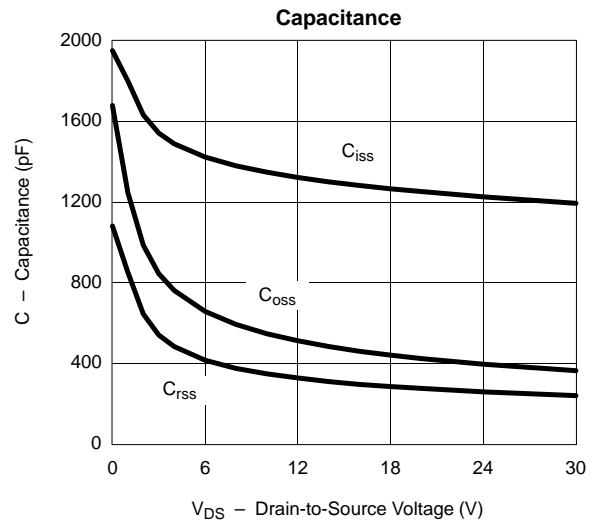
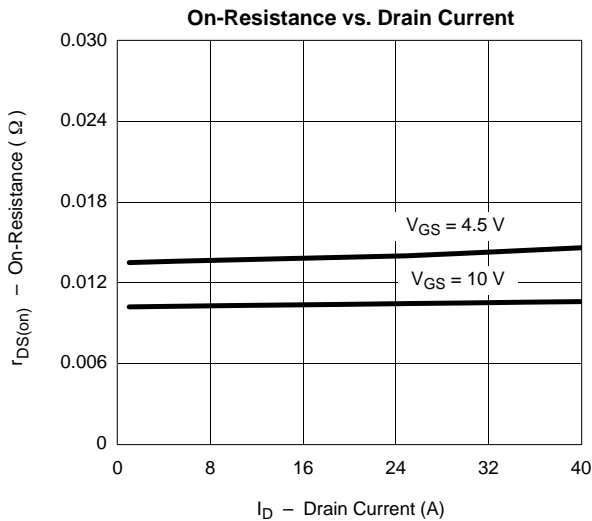
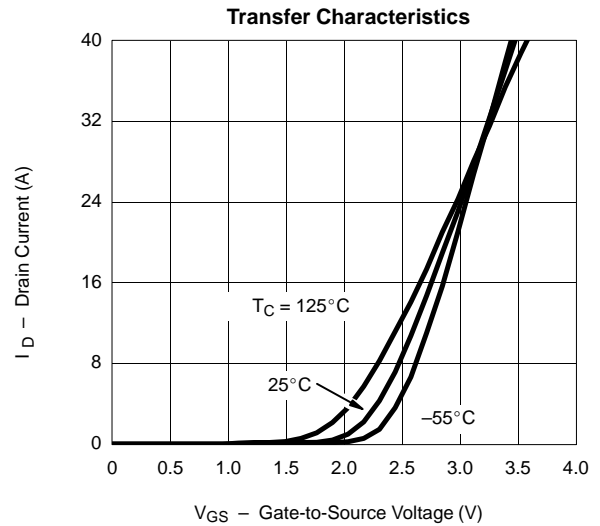
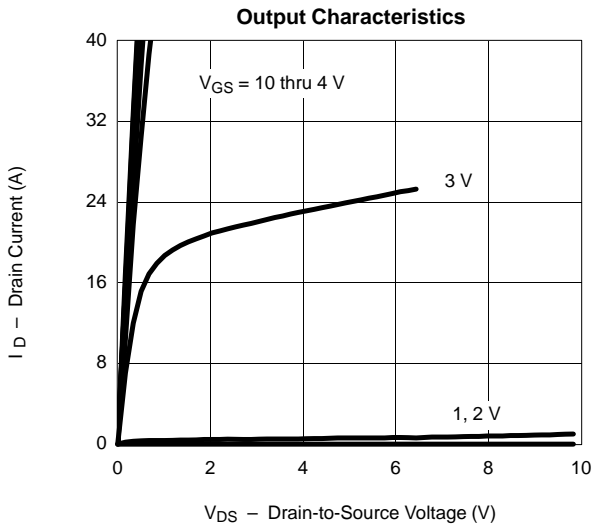




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL 1

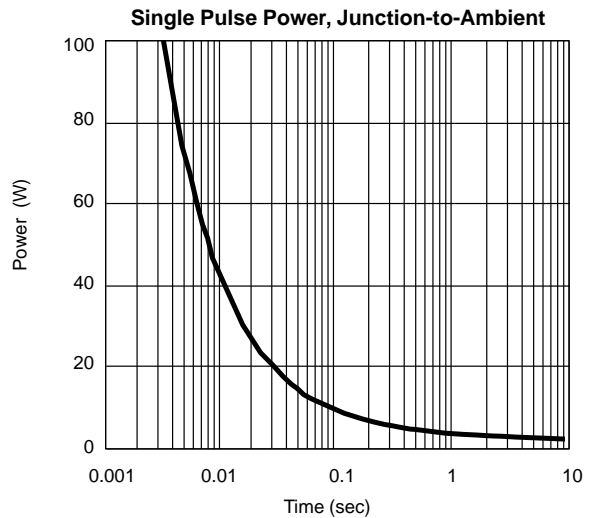
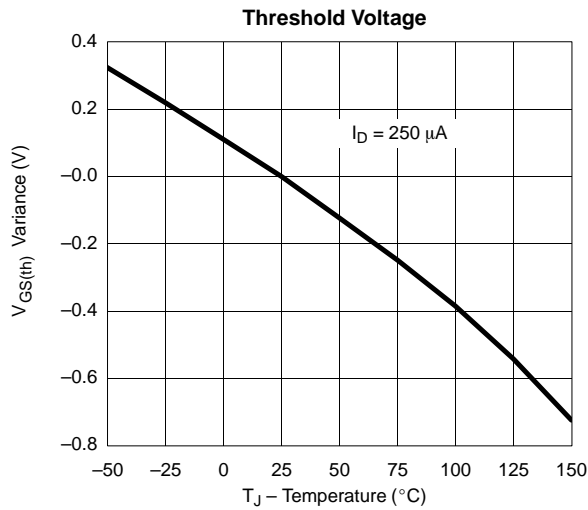
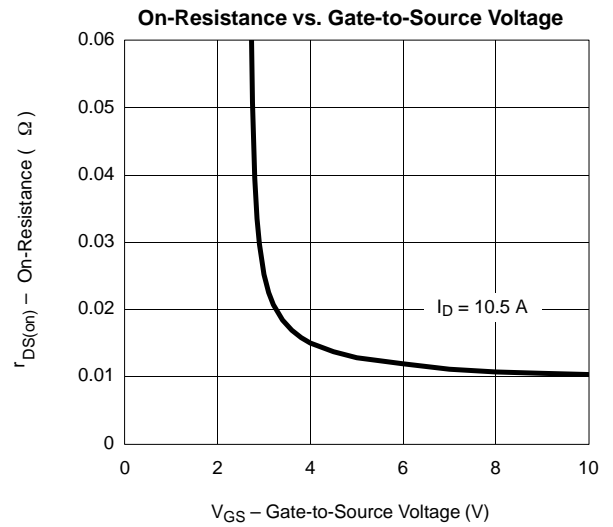
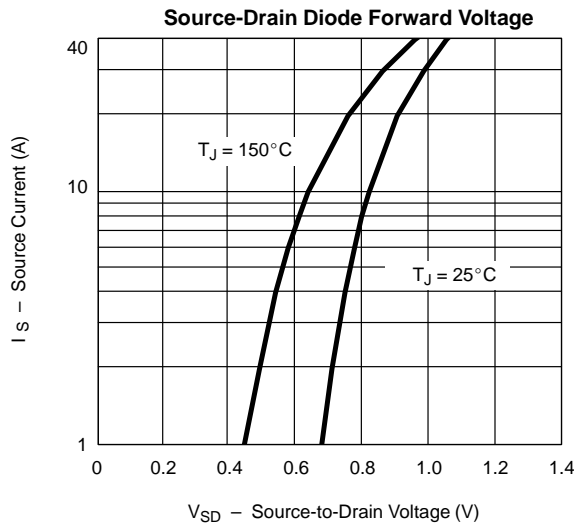
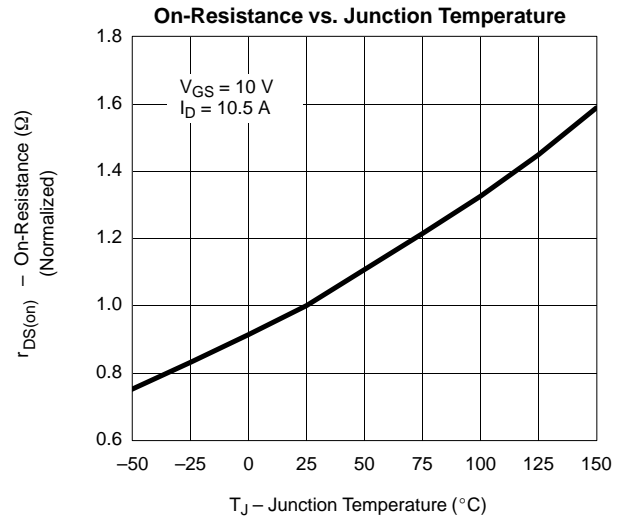
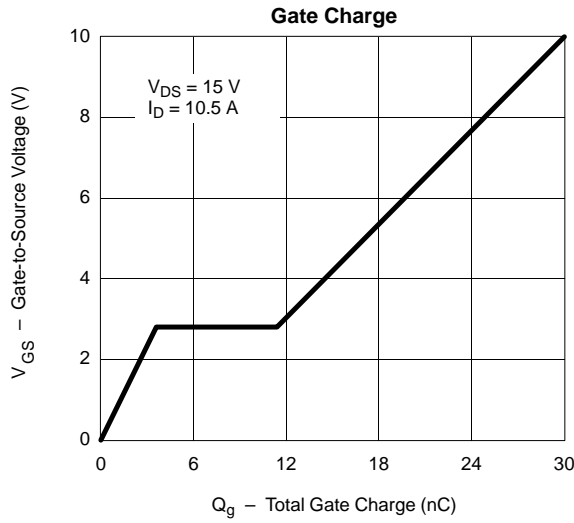


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL 2





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED) CHANNEL 2





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL 2

