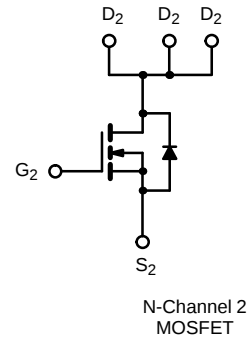
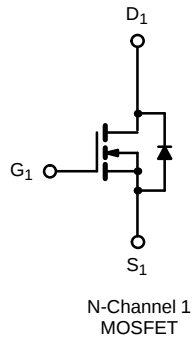
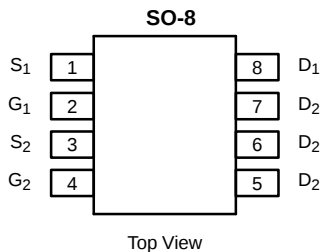




Asymmetrical Dual N-Channel 30-V (D-S) MOSFET

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	6.3	5.3	10.5	7.5	A
		5.4	4.2	8.5	6.0	
Pulsed Drain Current	I _{DM}	30		40		
Continuous Source Current (Diode Conduction) ^a	I _S	1.3	0.9	2.2	1.15	
Maximum Power Dissipation ^a	P _D	1.4	1.0	2.4	1.25	W
		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}	72	90	43	53	°C/W
		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 Ch-2	0.8 0.8			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = 20 V	Ch-1 Ch-2			100 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V V _{DS} = 24 V, V _{GS} = 0 V, T _J = 85 °C	Ch-1 Ch-2 Ch-1 Ch-2			1 1 15 15	μA
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	Ch-1 Ch-2	20 30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.3 A V _{GS} = 10 V, I _D = 10.5 A V _{GS} = 4.5 V, I _D = 5.4 A V _{GS} = 4.5 V, I _D = 9.0 A	Ch-1 Ch-2 Ch-1 Ch-2		0.018 0.0105 0.024 0.0135	0.022 0.0125 0.030 0.017	Ω
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 6.3 A V _{DS} = 15 V, I _D = 10.5 A	Ch-1 Ch-2		17 28		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1.3 A, V _{GS} = 0 V I _S = 2.2 A, V _{GS} = 0 V	Ch-1 Ch-2		0.7 0.72	1.1 1.1	V
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 Ch-2		8.0 18	12 25	nC
Gate-Source Charge	Q _{gs}		Ch-1 Ch-2		1.75 3.6		
Gate-Drain Charge	Q _{gd}		Ch-1 Ch-2		3.2 7.8		
Turn-On Delay Time	t _{d(on)}		Ch-1 Ch-2		10 13	20 30	
Rise Time	t _r	Channel-1 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω Channel-2 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω	Ch-1 Ch-2		5 10	10 20	ns
Turn-Off Delay Time	t _{d(off)}		Ch-1 Ch-2		26 37	50 80	
Fall Time	t _f		Ch-1 Ch-2		8 27	16 50	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.3 A, di/dt = 100 A/μs I _F = 2.2 A, di/dt = 100 μA/μs	Ch-1 Ch-2		30 35	

Notes

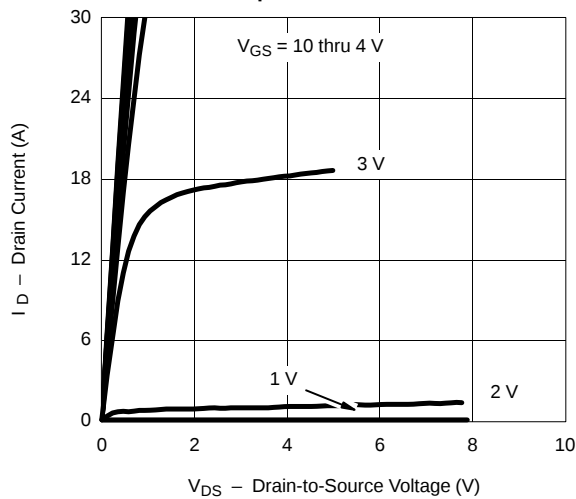
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.



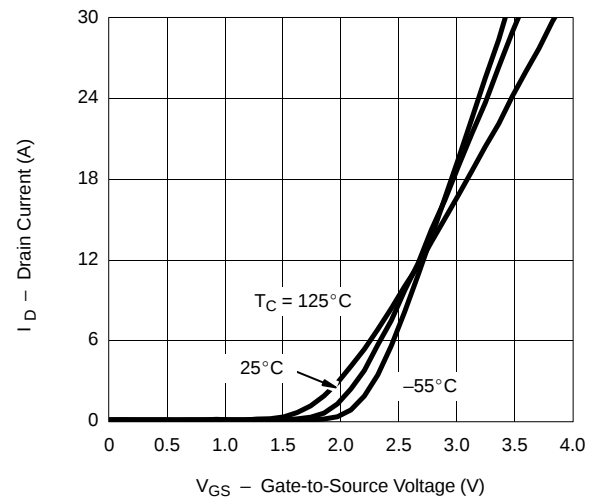
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1

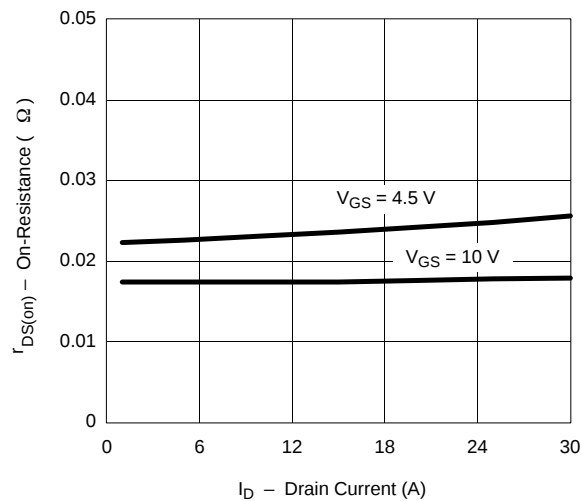
Output Characteristics



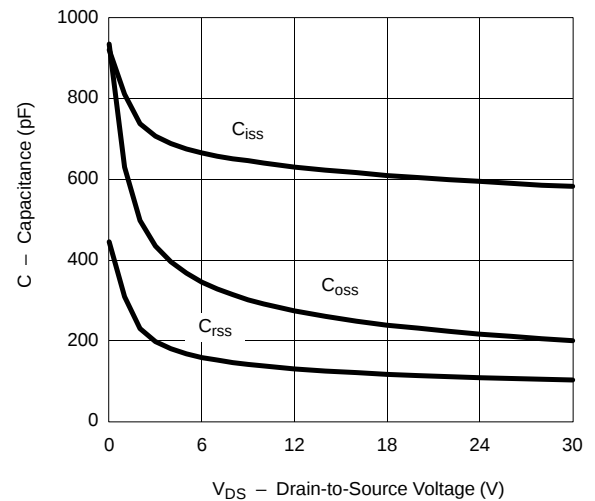
Transfer Characteristics



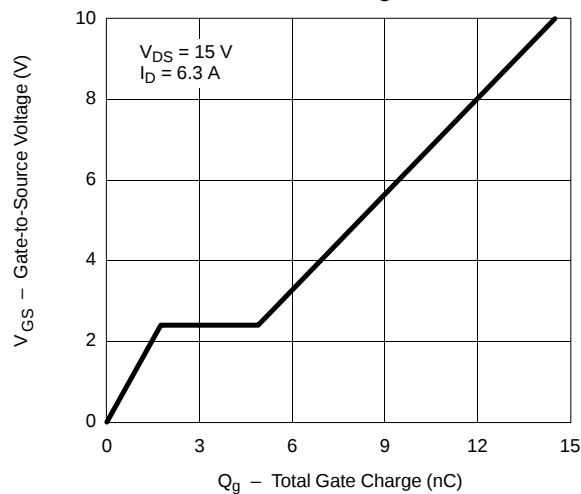
On-Resistance vs. Drain Current



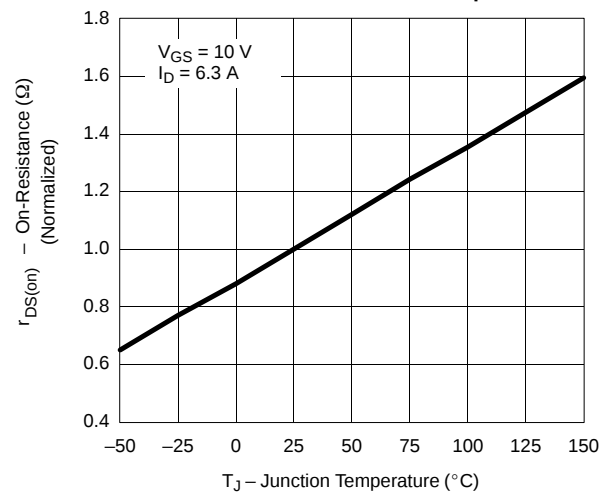
Capacitance



Gate Charge

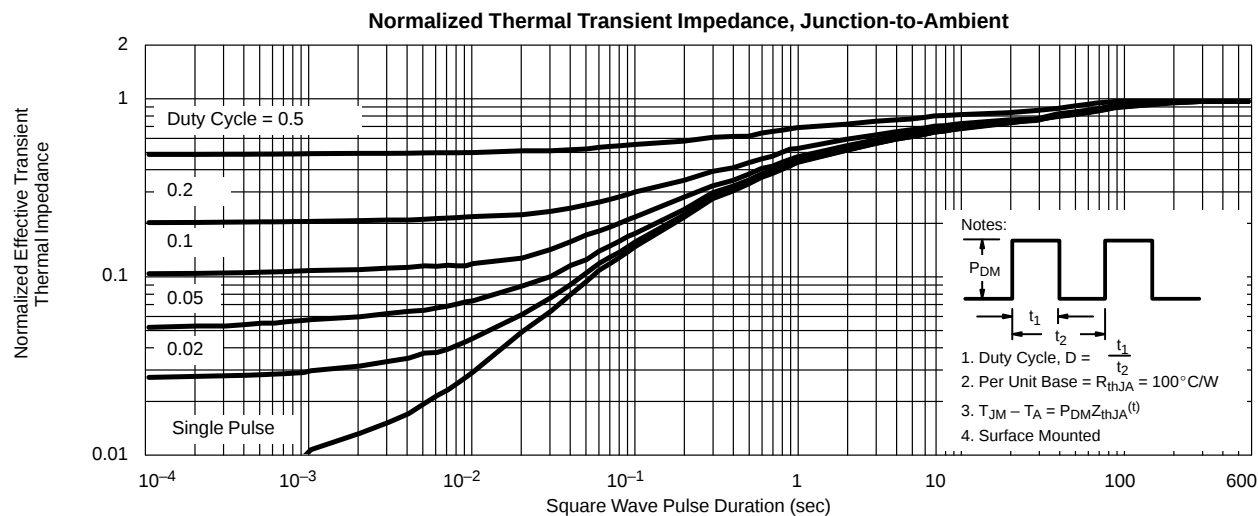
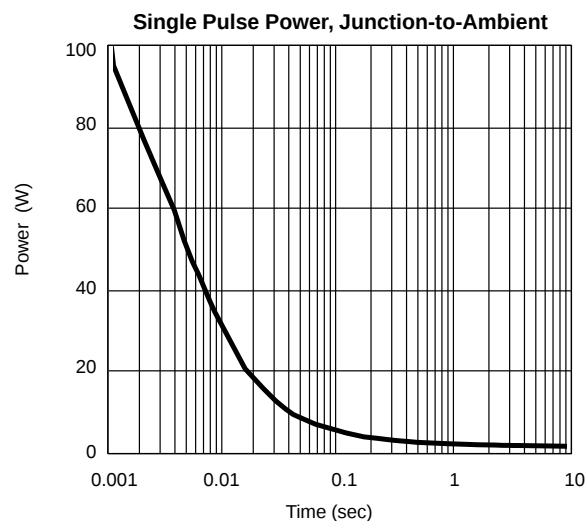
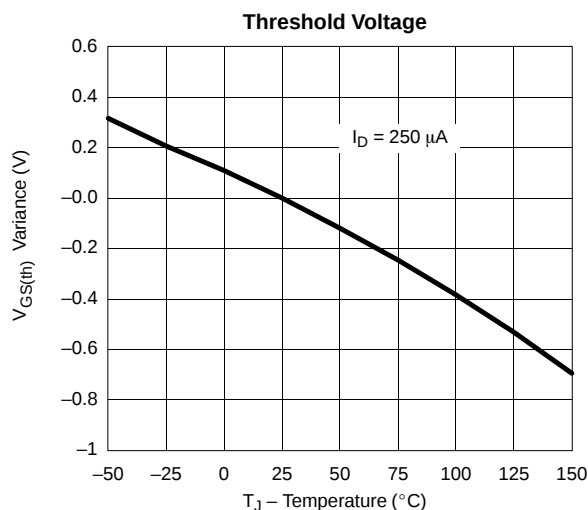
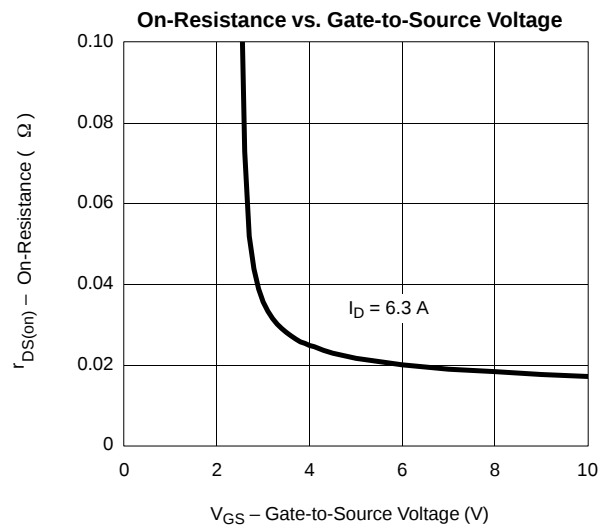
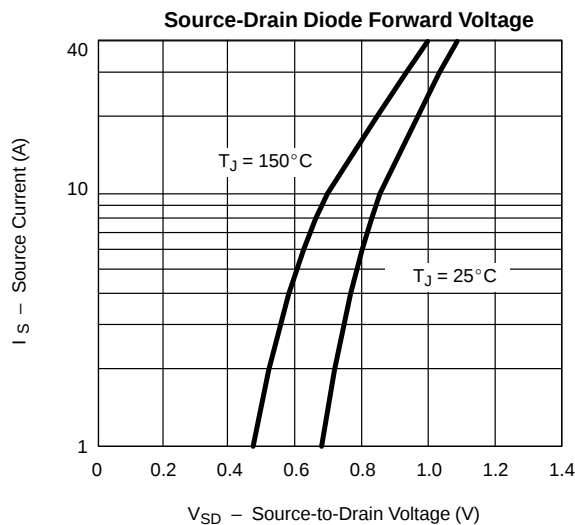


On-Resistance vs. Junction Temperature



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

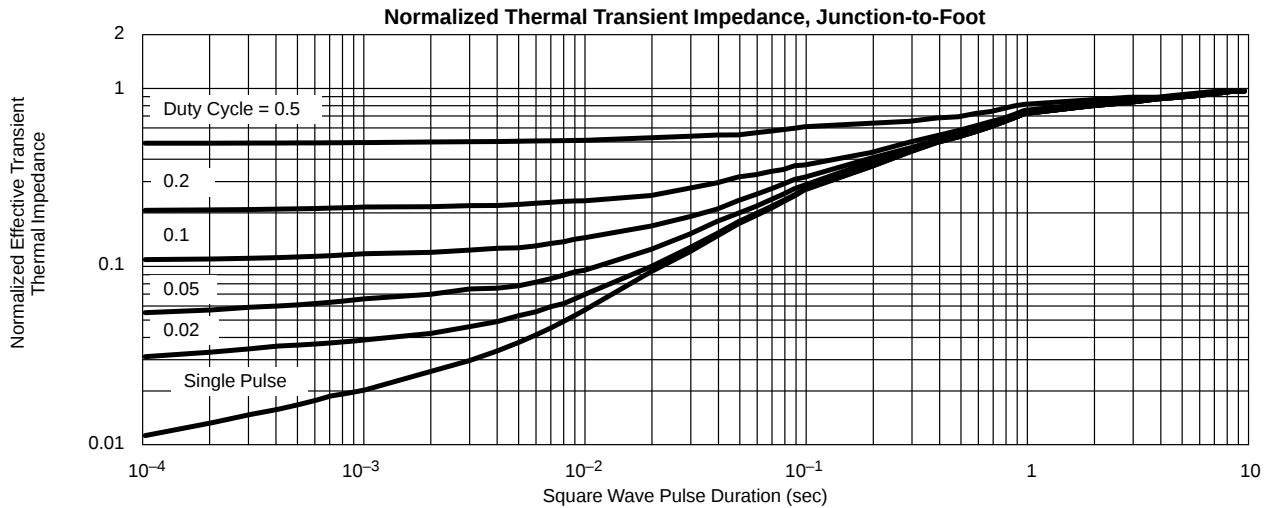
CHANNEL 1





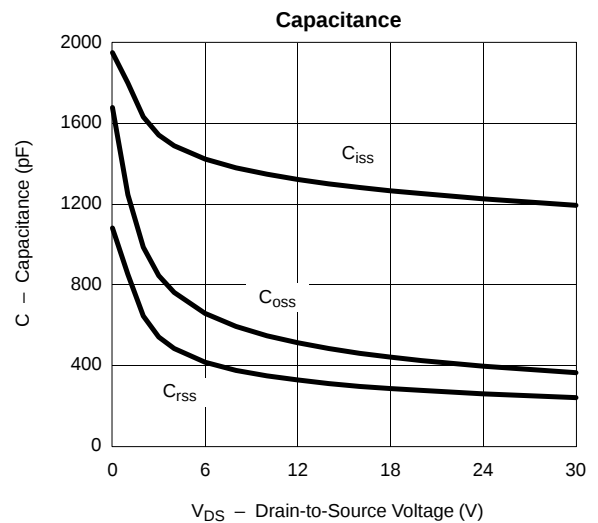
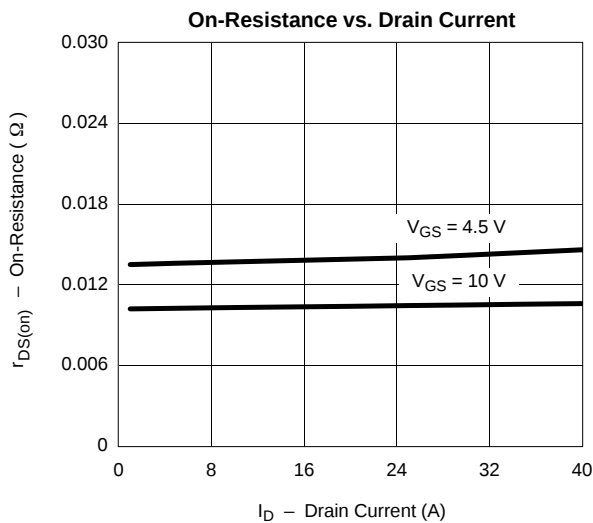
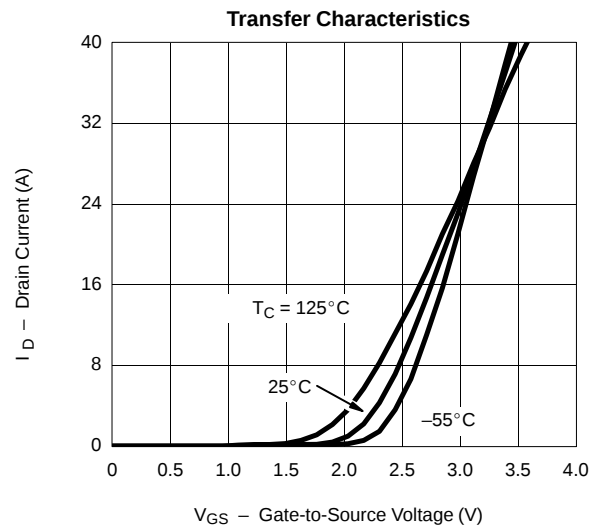
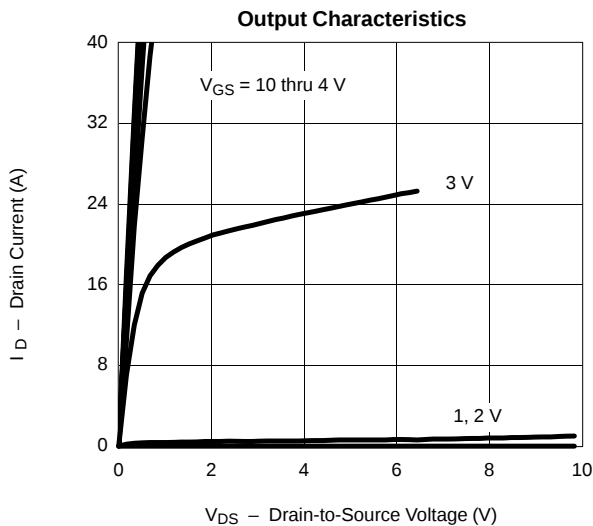
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1



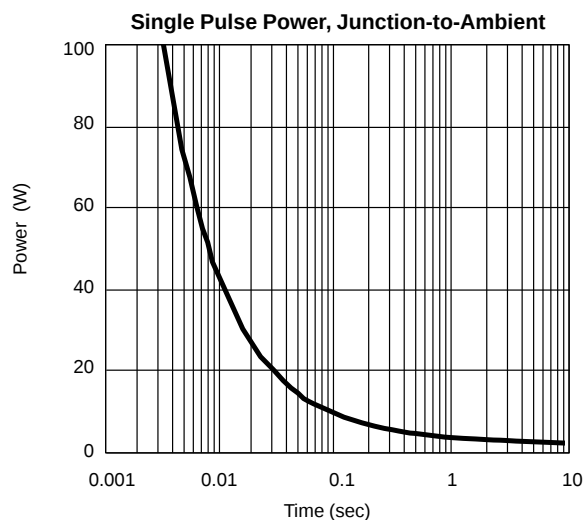
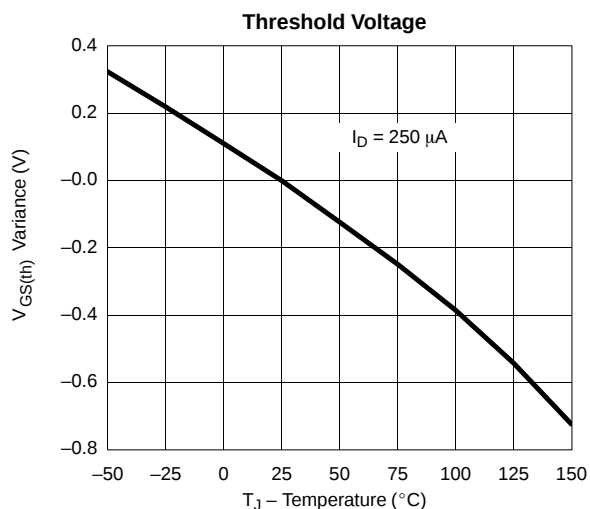
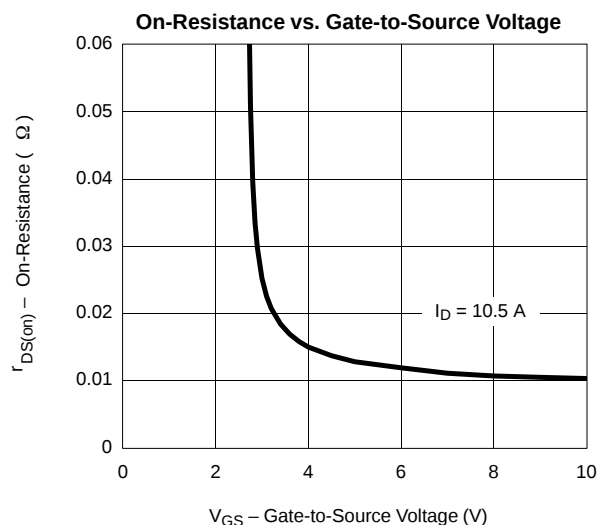
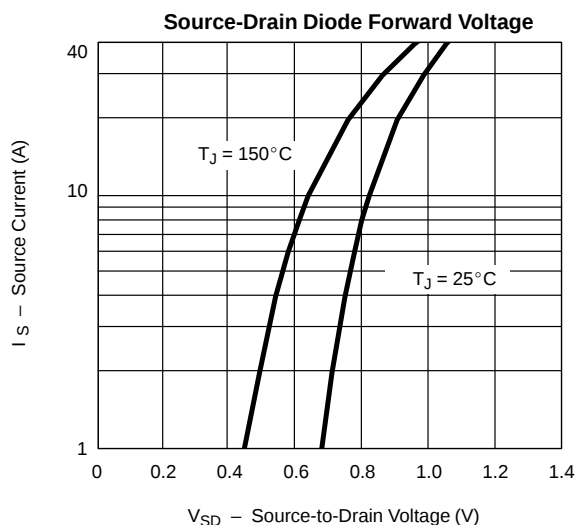
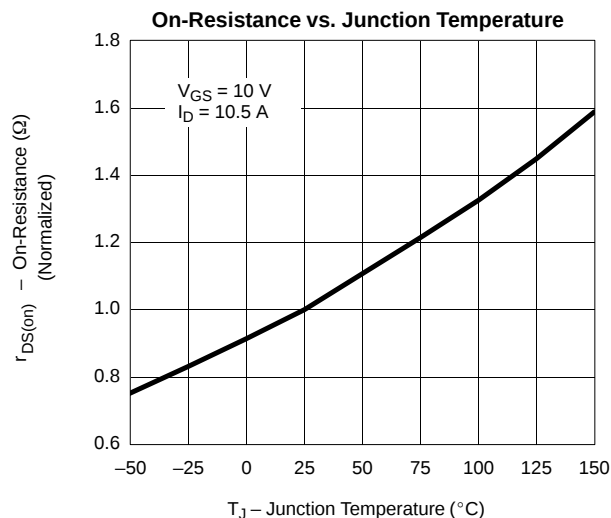
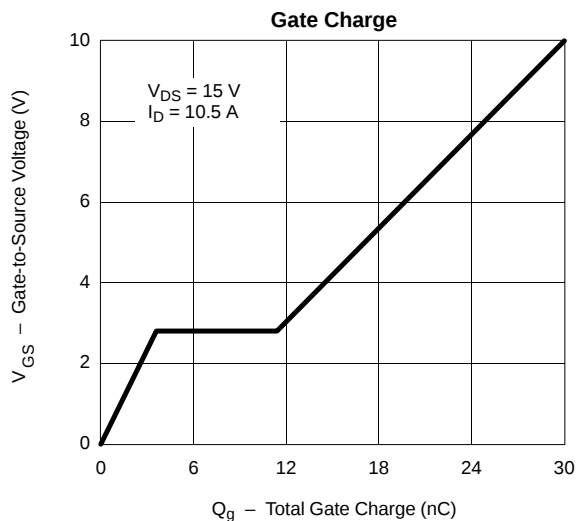
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 2



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

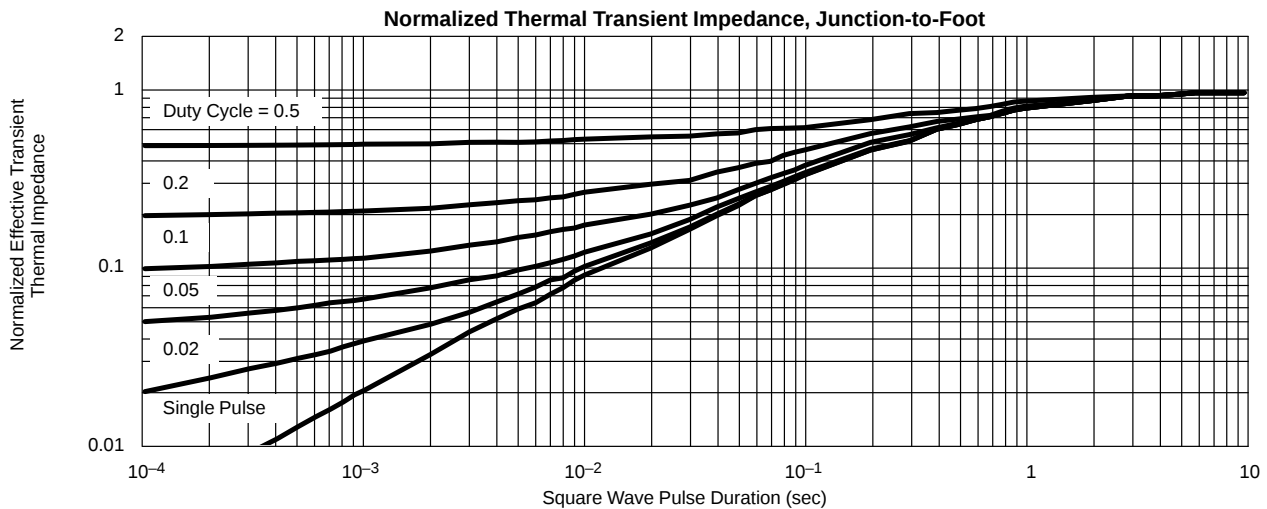
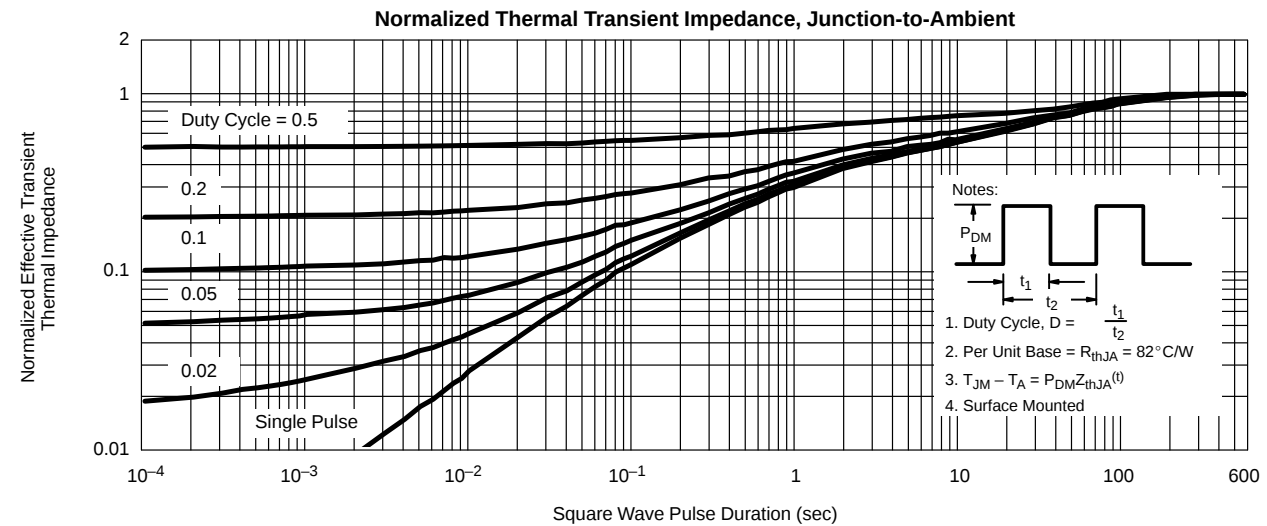
CHANNEL 2





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 2





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