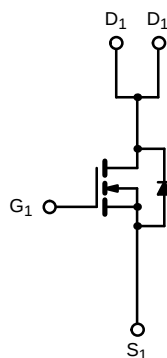
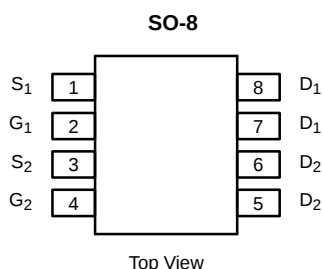


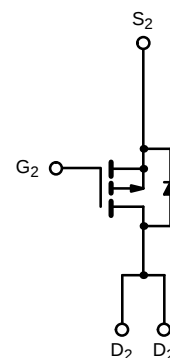


Complimentary 20-V (D-S) MOSFET

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.05 @ $V_{GS} = 4.5$ V	± 5.0
		0.06 @ $V_{GS} = 3.0$ V	± 4.2
		0.08 @ $V_{GS} = 2.7$ V	± 3.6
P-Channel	-20	0.11 @ $V_{GS} = -4.5$ V	± 3.4
		0.15 @ $V_{GS} = -3.0$ V	± 2.9
		0.19 @ $V_{GS} = -2.7$ V	± 2.6



N-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter			Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage			V _{DS}	20	−20	V
Gate-Source Voltage			V _{GS}	±12	±12	
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C		I _D	±5.0	±3.4	A
	T _A = 70°C			±4.0	±2.8	
Pulsed Drain Current			I _{DM}	±10	±10	
Continuous Source Current (Diode Conduction) ^a			I _S	2.0	−2.0	
Maximum Power Dissipation ^a	T _A = 25°C		P _D	2.0	2.0	W
	T _A = 70°C			1.3	1.3	
Operating Junction and Storage Temperature Range			T _J , T _{stg}	−55 to 150		°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	N- or P-Channel	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	62.5	$^\circ\text{C/W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Condition		Min	Typ ^a	Max	Unit
Static							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	0.8	1.2		V
		V _{DS} = V _{GS} , I _D = −250 μA	P-Ch	−0.8	−1.1		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±12 V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = −16 V, V _{GS} = 0 V	P-Ch			−1	
		V _{DS} = 10 V, V _{GS} = 0 V, T _J = 70 °C	N-Ch			5	
		V _{DS} = −10 V, V _{GS} = 0 V, T _J = 70 °C	P-Ch			−5	
On-State Drain Current ^b	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	10			A
		V _{DS} ≤ −5 V, V _{GS} = −4.5 V	P-Ch	−10			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 5.0 A	N-Ch		0.041	0.05	Ω
		V _{GS} = −4.5 V, I _D = −3.2 A	P-Ch		0.087	0.11	
		V _{GS} = 3.0 V, I _D = 3.9 A	N-Ch		0.052	0.06	
		V _{GS} = −3.0 V, I _D = −2.0 A	P-Ch		0.120	0.15	
		V _{GS} = 2.7 V, I _D = 1.0 A	N-Ch		0.060	0.08	
		V _{GS} = −2.7 V, I _D = −1.0 A	P-Ch		0.135	0.19	
Forward Transconductance ^b	g _{fs}	V _{DS} = 10 V, I _D = 5.0 A	N-Ch		13		S
		V _{DS} = −9 V, I _D = −3.2 A	P-Ch		8		
Diode Forward Voltage ^b	V _{SD}	I _S = 5.0 A, V _{GS} = 0 V	N-Ch		0.9	1.2	V
		I _S = −2.0 A, V _{GS} = 0 V	P-Ch		−0.9	−1.2	
Dynamic ^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 6 V, V _{GS} = 4.5 V, I _D = 5.0 A P-Channel V _{DS} = −6 V, V _{GS} = −4.5 V, I _D = −3.2 A	N-Ch		10	20	nC
Gate-Source Charge	Q _{gs}		P-Ch		8	20	
			N-Ch		2.6		
Gate-Drain Charge	Q _{gd}		P-Ch		1.6		
			N-Ch		3.7		
			P-Ch		3.5		
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 6 V, R _L = 6 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω P-Channel V _{DD} = −6 V, R _L = 6 Ω I _D ≅ −1 A, V _{GEN} = −4.5 V, R _G = 6 Ω	N-Ch		13	30	ns
Rise Time	t _r		P-Ch		22	40	
			N-Ch		9	40	
Turn-Off Delay Time	t _{d(off)}		P-Ch		43	80	
			N-Ch		30	60	
Fall Time	t _f		P-Ch		35	70	
			N-Ch		9	30	
			P-Ch		20	40	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 5.0 A, di/dt = 100 A/μs	N-Ch		100	150	
		I _F = −2.0 A, di/dt = 100 A/μs	P-Ch		75	100	

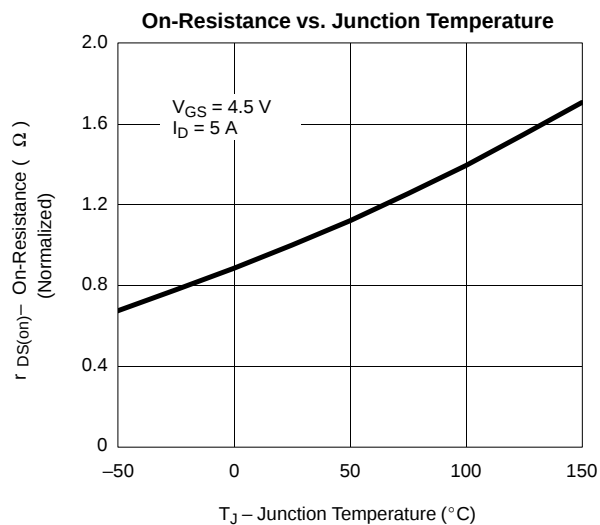
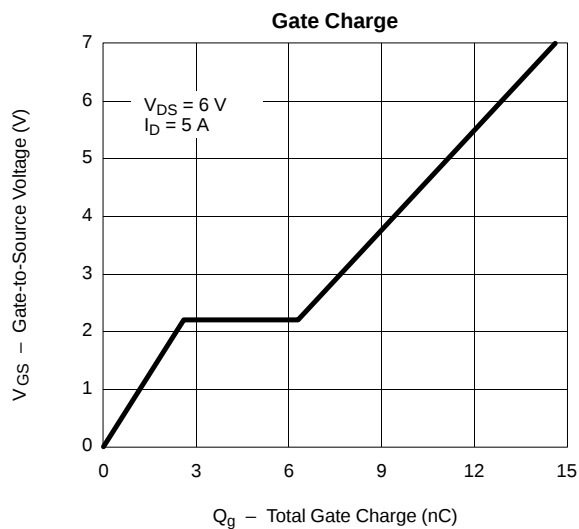
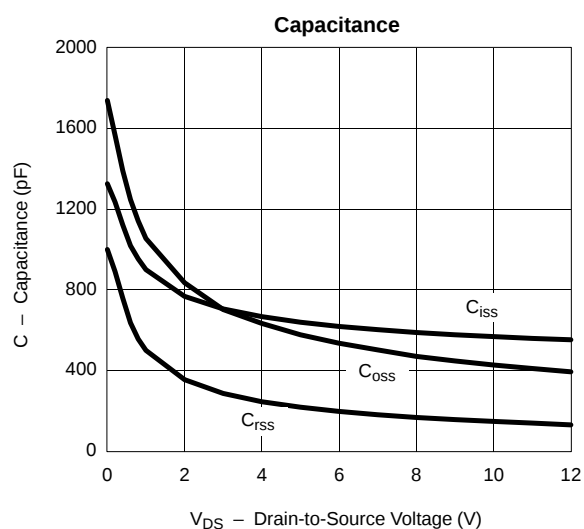
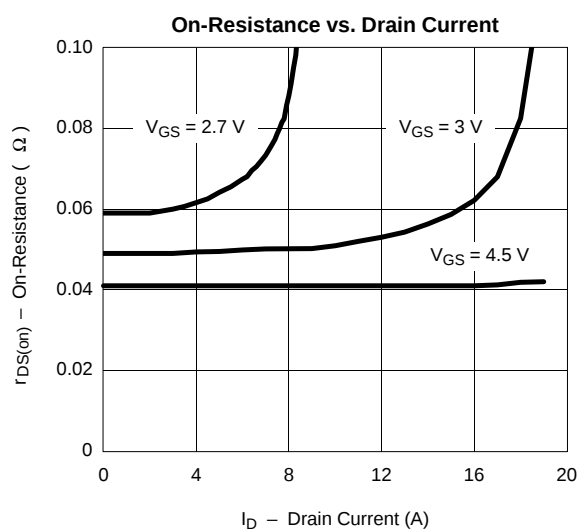
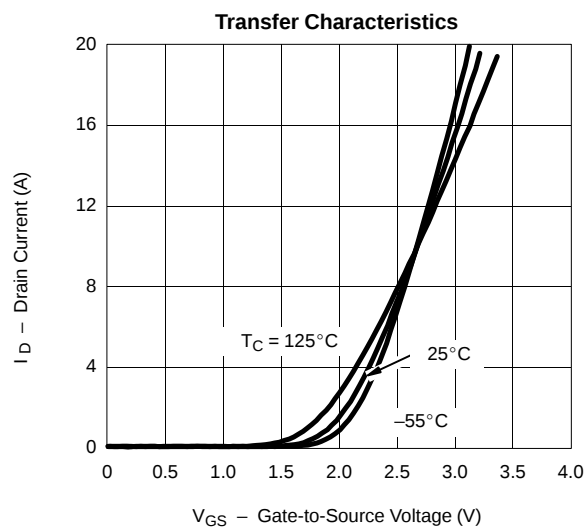
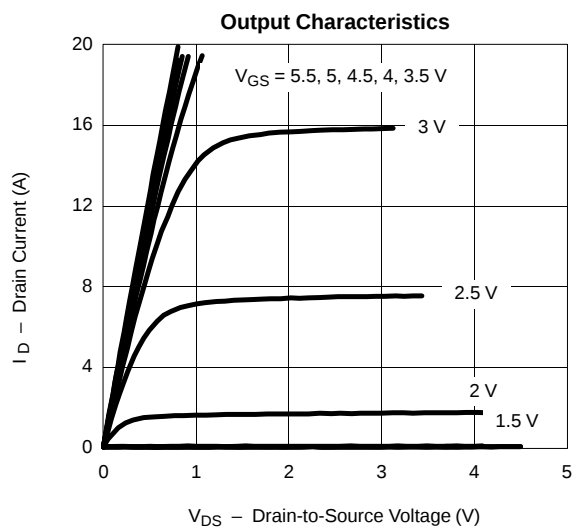
Notes

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



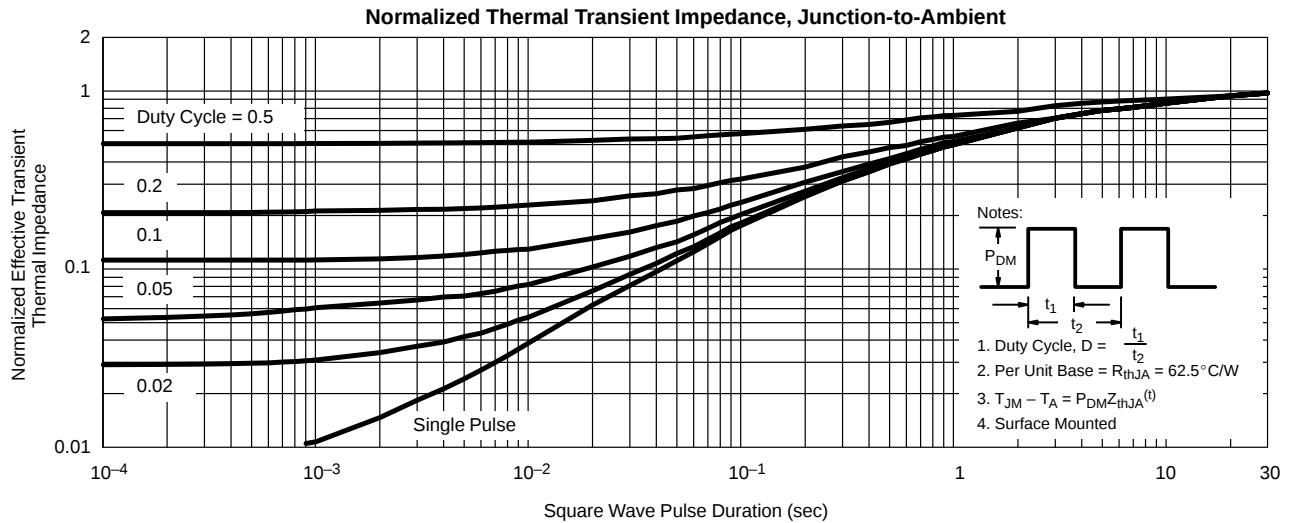
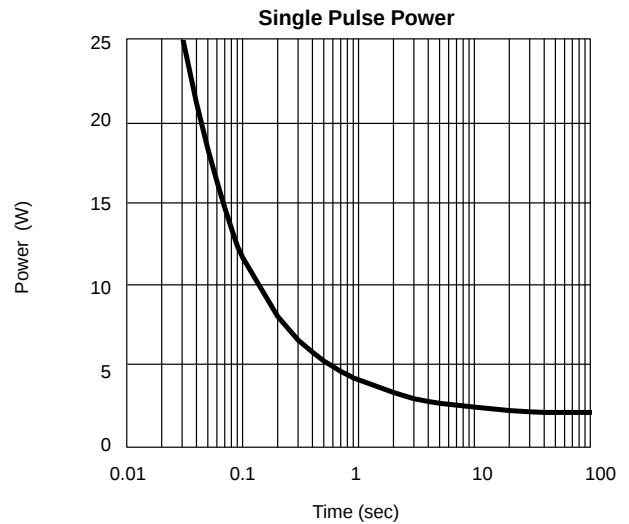
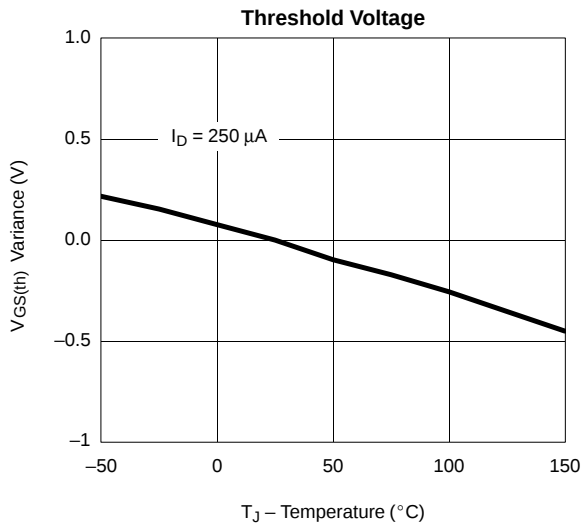
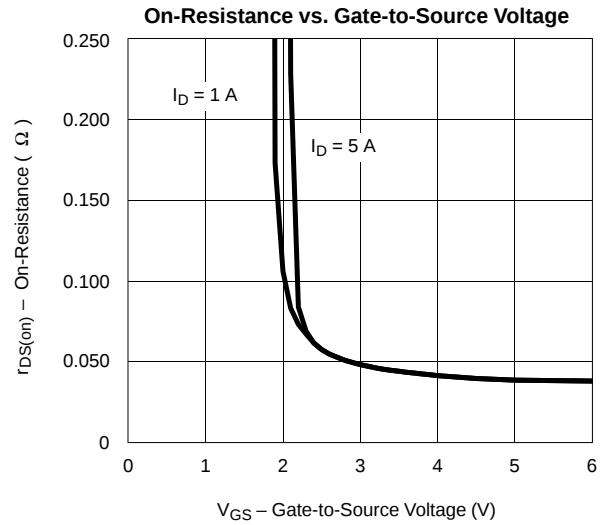
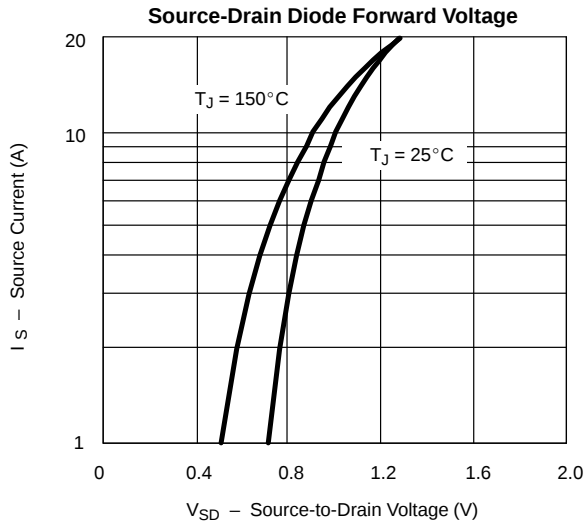
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

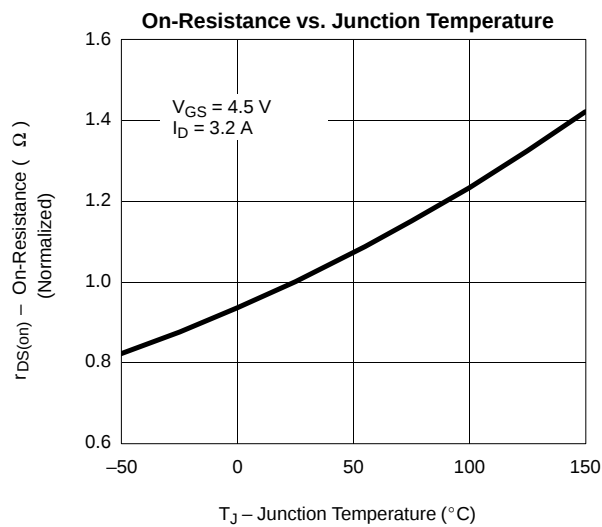
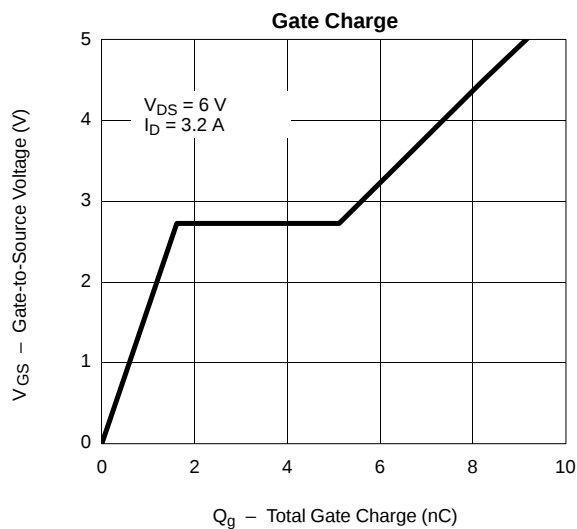
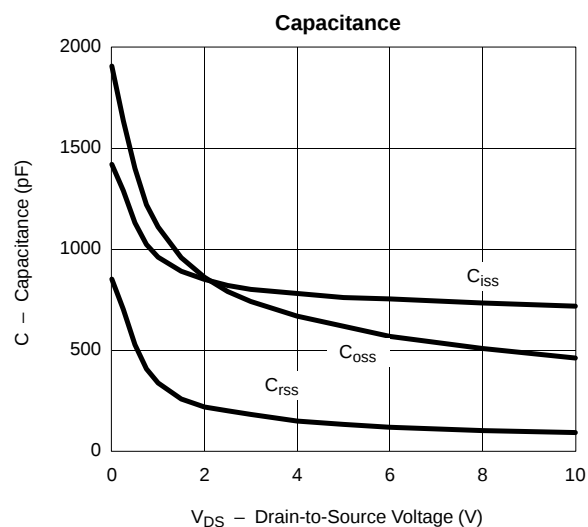
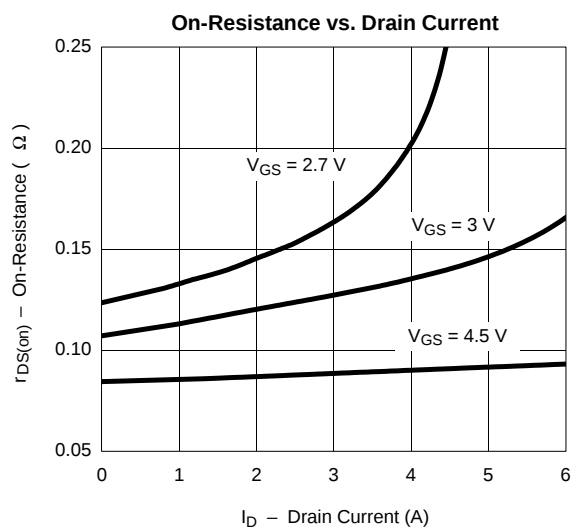
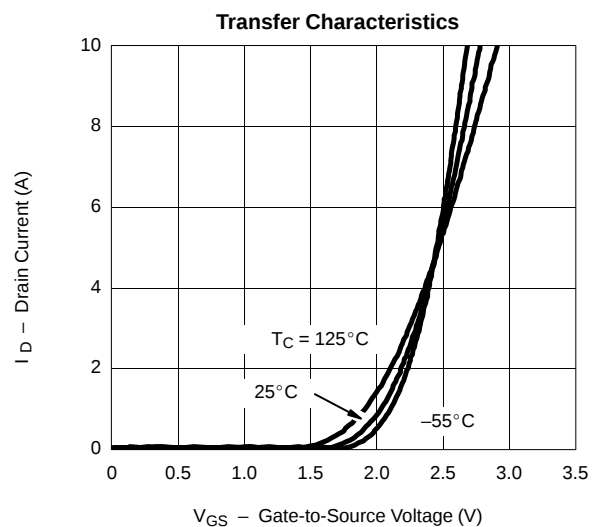
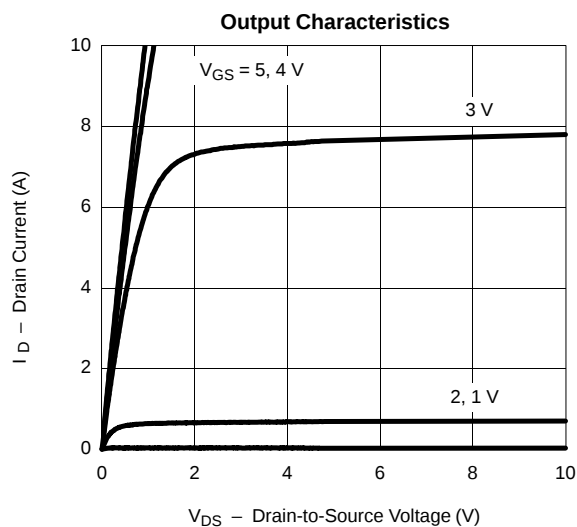
N-CHANNEL





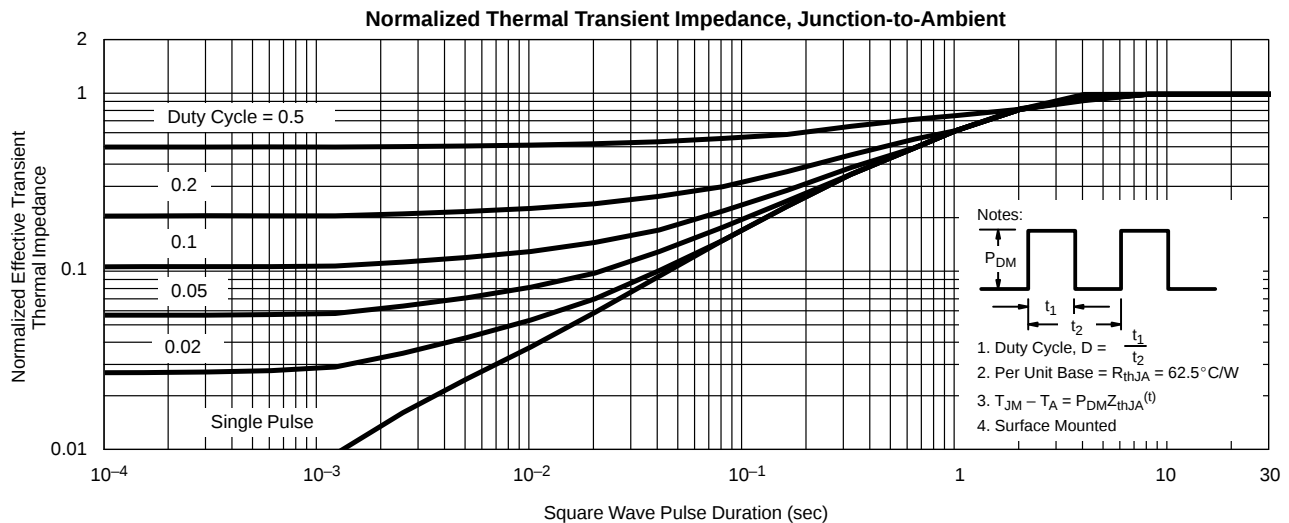
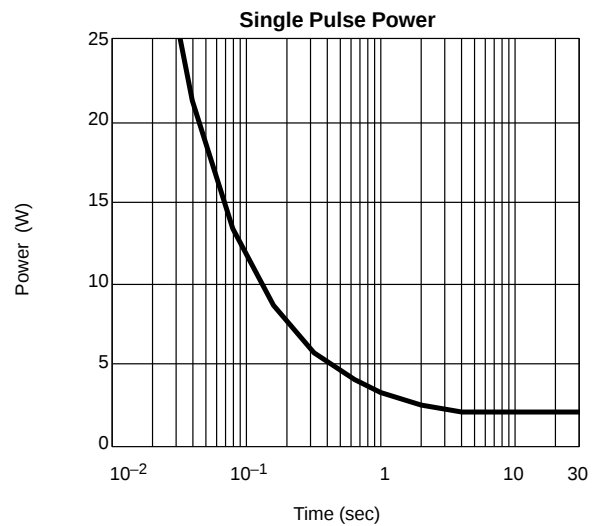
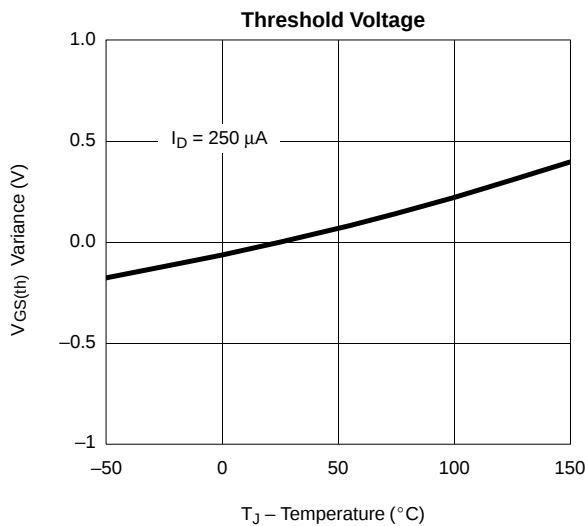
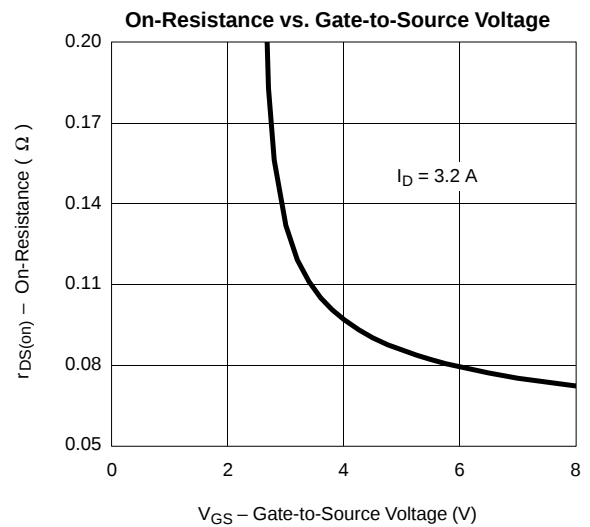
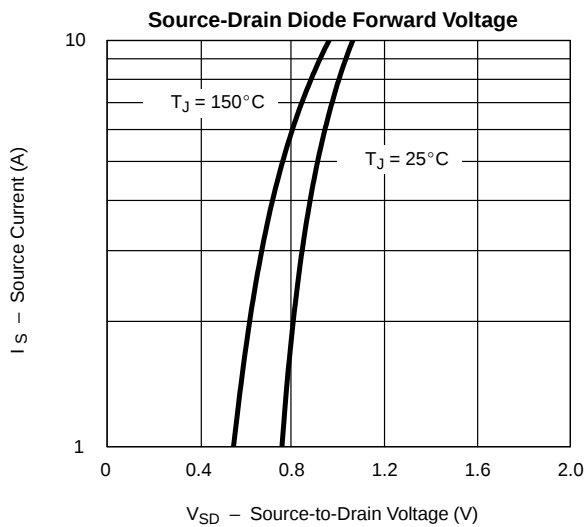
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL





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