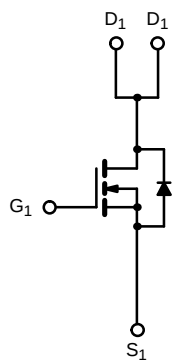
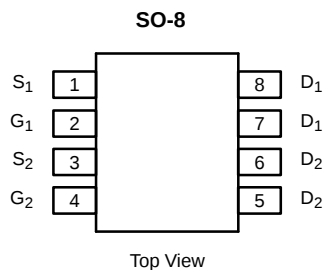


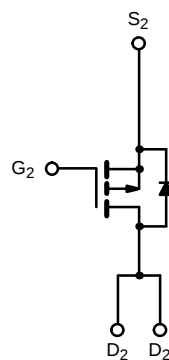


Complimentary 20-V (D-S) MOSFET

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.125 @ $V_{GS} = 10$ V	± 3.0
		0.250 @ $V_{GS} = 4.5$ V	± 2.0
P-Channel	-20	0.200 @ $V_{GS} = -10$ V	± 2.5
		0.350 @ $V_{GS} = -4.5$ V	± 2.0



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}	± 20	± 20	
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C		I _D	± 3.0	± 2.5	A
	T _A = 70°C			± 2.5	± 2.0	
Pulsed Drain Current			I _{DM}	± 10	± 10	
Continuous Source Current (Diode Conduction) ^a			I _S	1.6	−1.6	
Maximum Power Dissipation ^a	T _A = 25°C		P _D	2.0		W
	T _A = 70°C			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.

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

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	1.0		V	
		V _{DS} = V _{GS} , I _D = −250 μA	P-Ch	−1.0			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V	N-Ch		2	μA	
		V _{DS} = −16 V, V _{GS} = 0 V	P-Ch		−2		
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch		25		
		V _{DS} = −16 V, V _{GS} = 0 V, T _J = 55 °C	P-Ch		−25		
On-State Drain Current ^b	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	10		A	
		V _{DS} ≤ −5 V, V _{GS} = −10 V	P-Ch	−10			
		V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	2			
		V _{DS} ≤ −5 V, V _{GS} = −4.5 V	P-Ch	−2			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 1.0 A	N-Ch		0.07	Ω	
		V _{GS} = −10 V, I _D = 1.0 A	P-Ch		0.12		
		V _{GS} = 4.5 V, I _D = 0.5 A	N-Ch		0.105		
		V _{GS} = −4.5 V, I _D = 0.5 A	P-Ch		0.22		
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 3.0 A	N-Ch		4.8	S	
		V _{DS} = −15 V, I _D = −3.0 A	P-Ch		3.0		
Diode Forward Voltage ^b	V _{SD}	I _S = 1.25 A, V _{GS} = 0 V	N-Ch		0.75	V	
		I _S = −1.25 A, V _{GS} = 0 V	P-Ch		−0.8		
Dynamic ^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 10 V, I _D = 2.3 A P-Channel V _{DS} = −10 V, V _{GS} = −10 V, I _D = −2.3 A	N-Ch		7	nC	
Gate-Source Charge	Q _{gs}		P-Ch		6.7		
			N-Ch		0.75		
			P-Ch		1.3		
Gate-Drain Charge	Q _{gd}	N-Ch		1.7			
		P-Ch		1.6			
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 20 V, R _L = 20 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω P-Channel V _{DD} = −20 V, R _L = 20 Ω I _D ≅ −1 A, V _{GEN} = −10 V, R _G = 6 Ω	N-Ch		6	ns	
Rise Time	t _r		P-Ch		10		
			N-Ch		10		
			P-Ch		12		
Turn-Off Delay Time	t _{d(off)}		N-Ch		17		50
			P-Ch		20		
Fall Time	t _f		N-Ch		10		50
			P-Ch		10		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.25 A, di/dt = 100 A/μs	N-Ch		45	100	
			P-Ch		70		

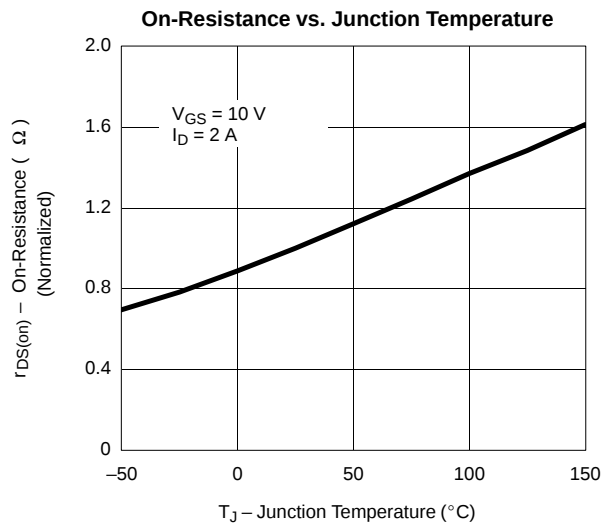
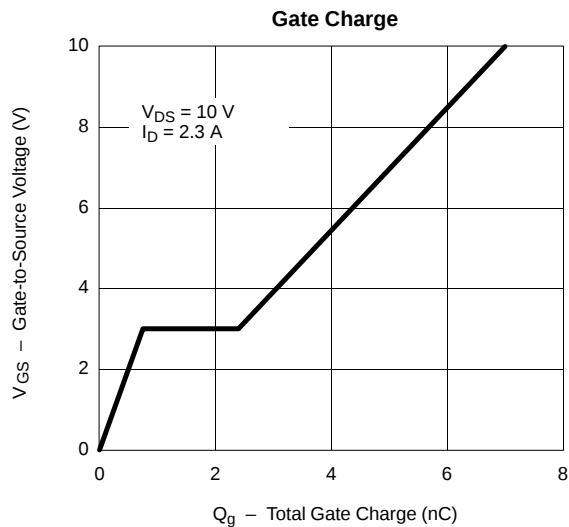
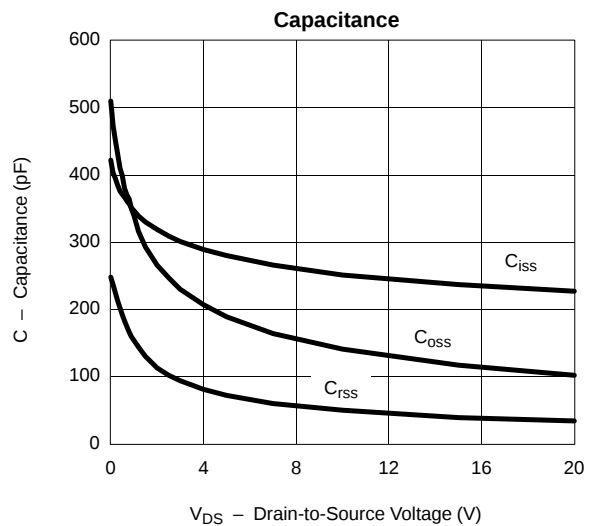
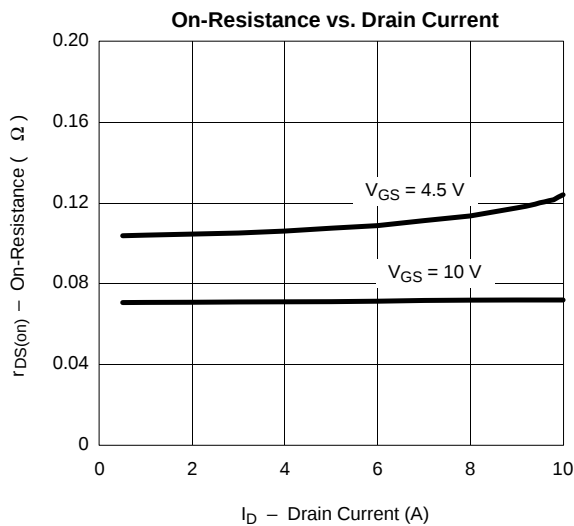
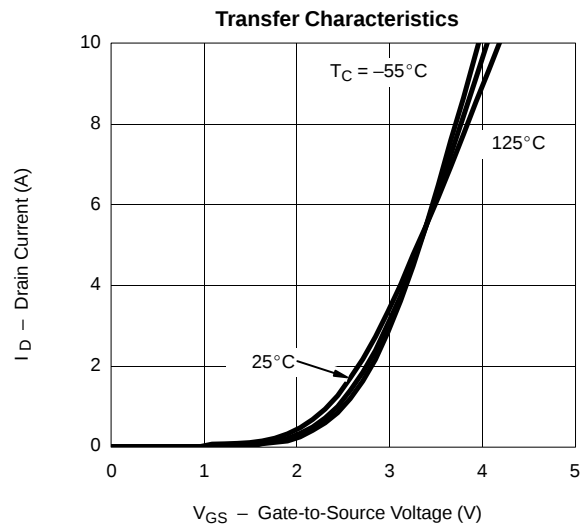
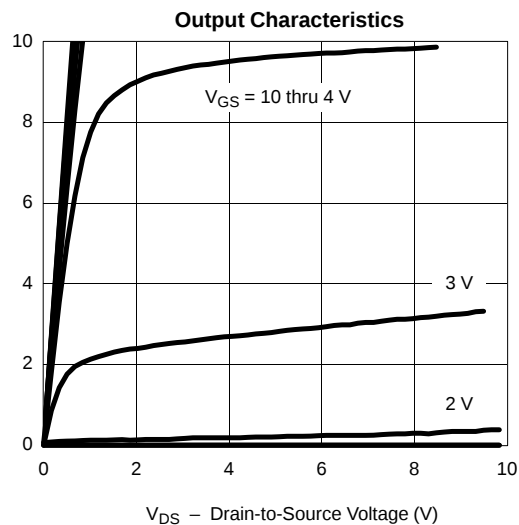
Notes

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



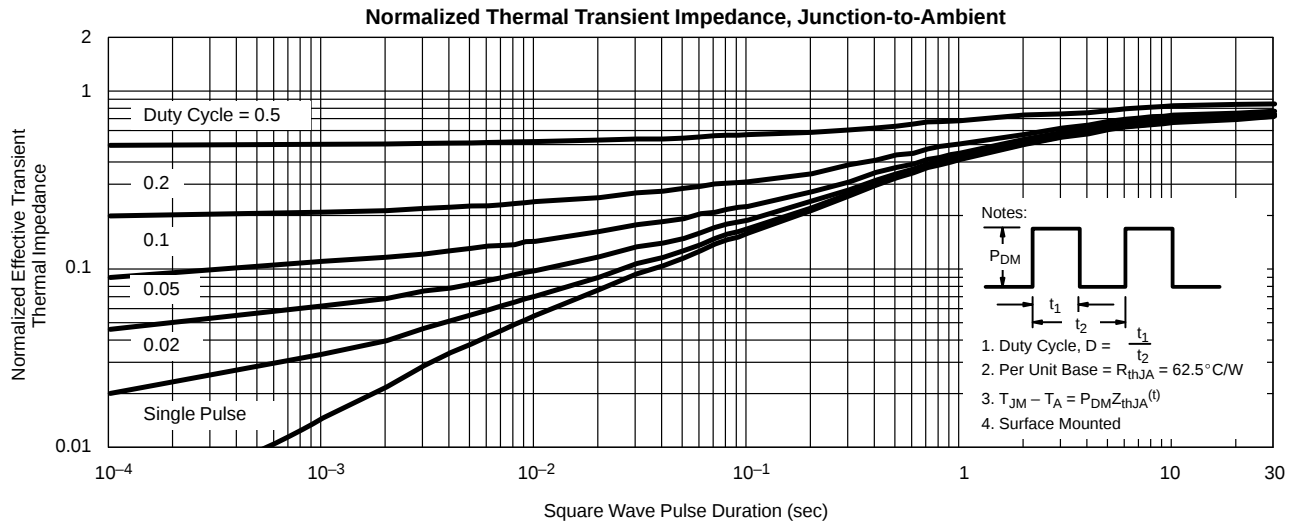
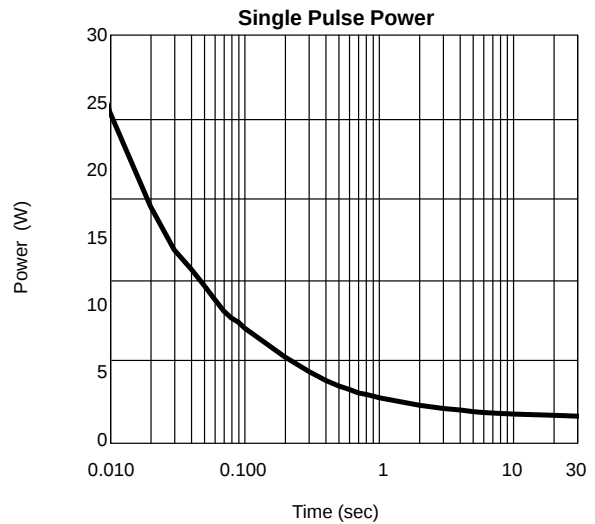
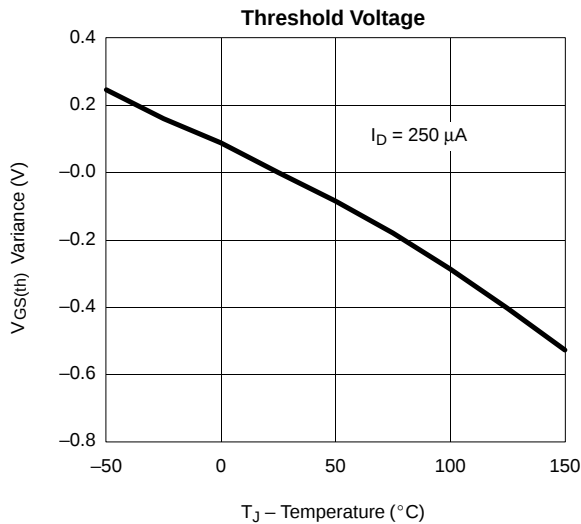
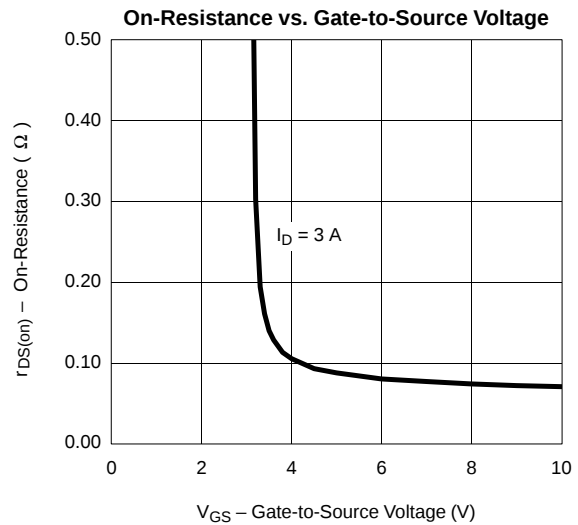
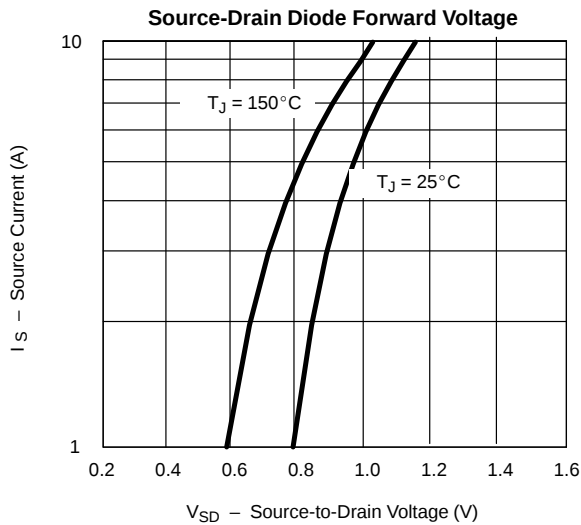
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

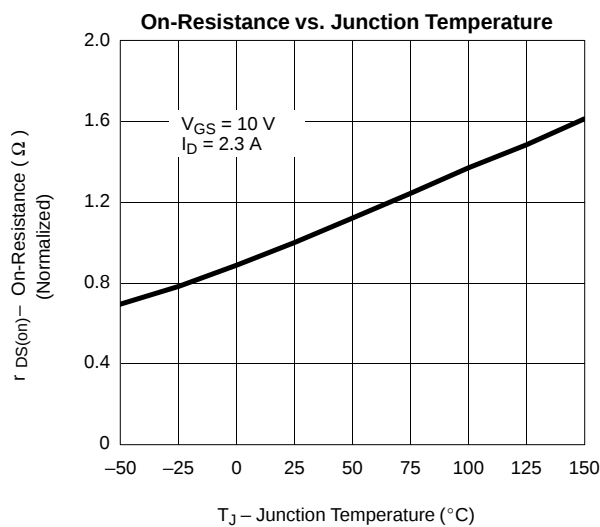
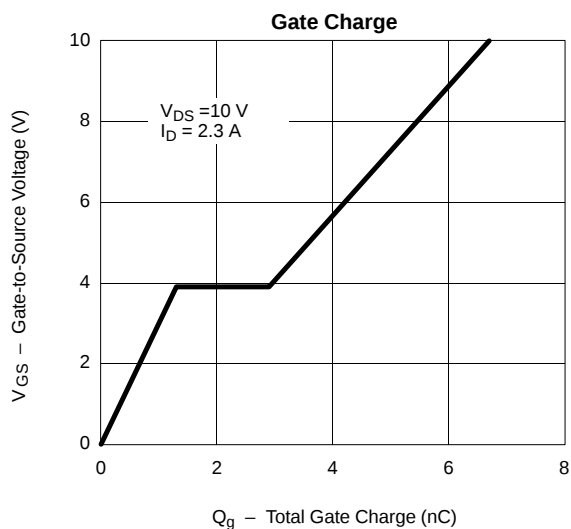
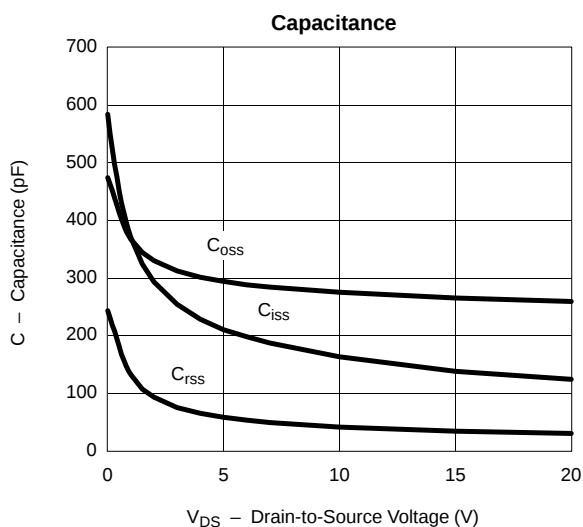
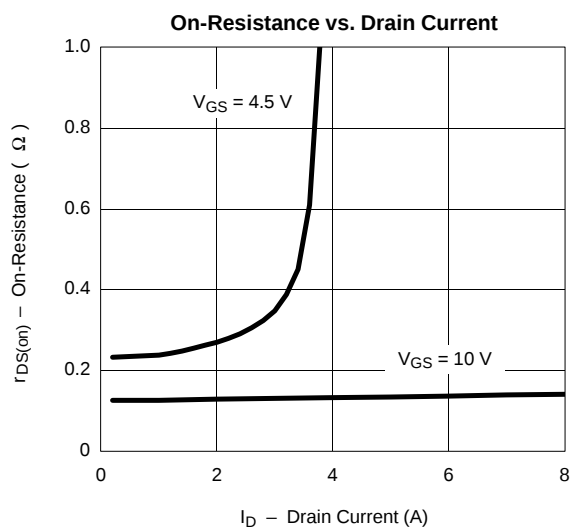
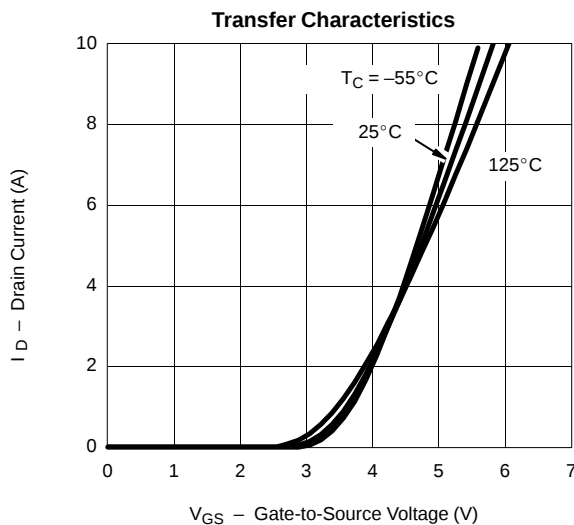
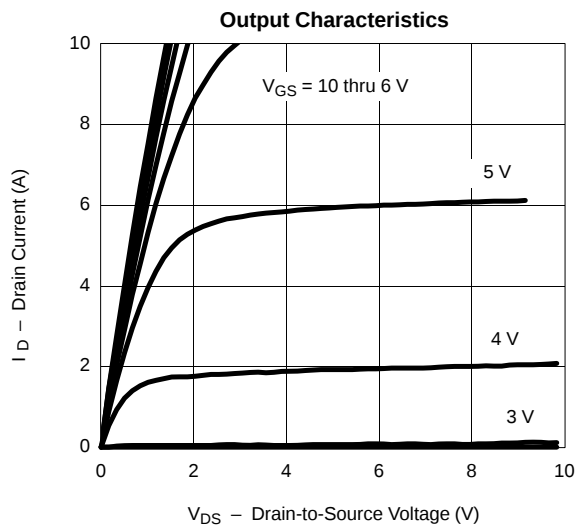
N-CHANNEL





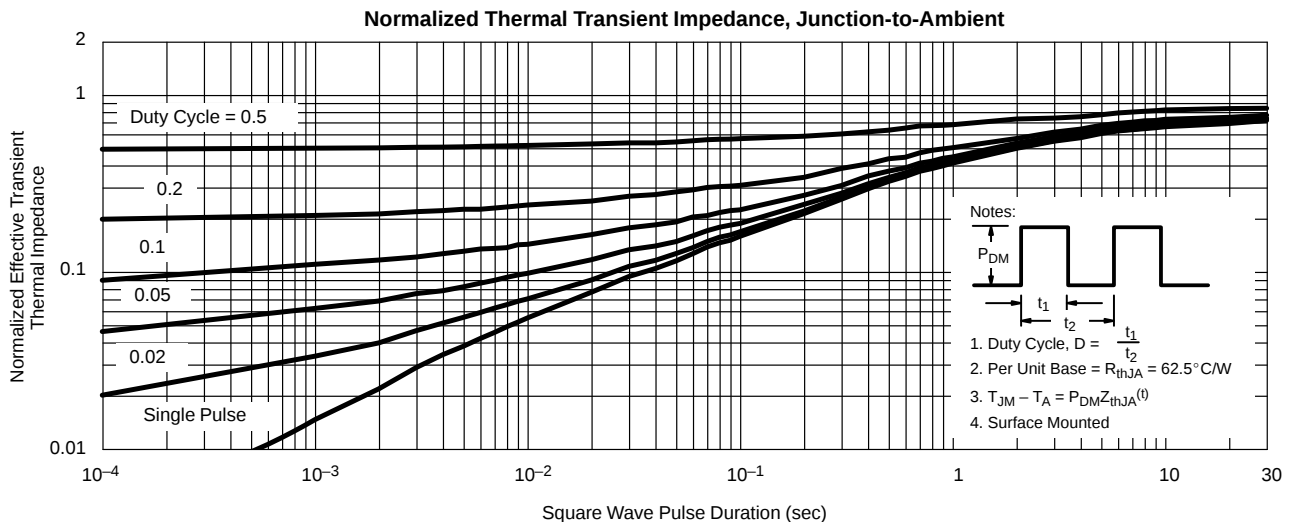
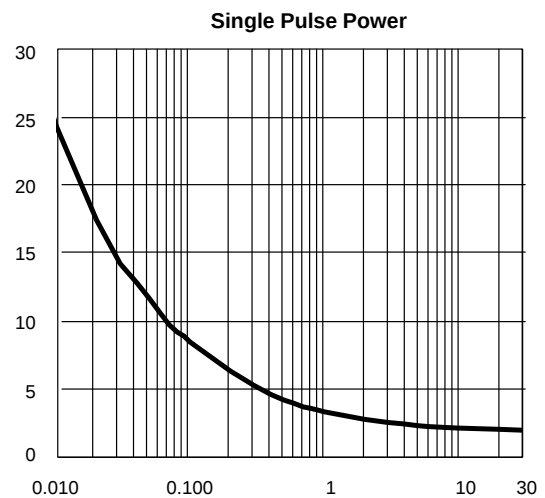
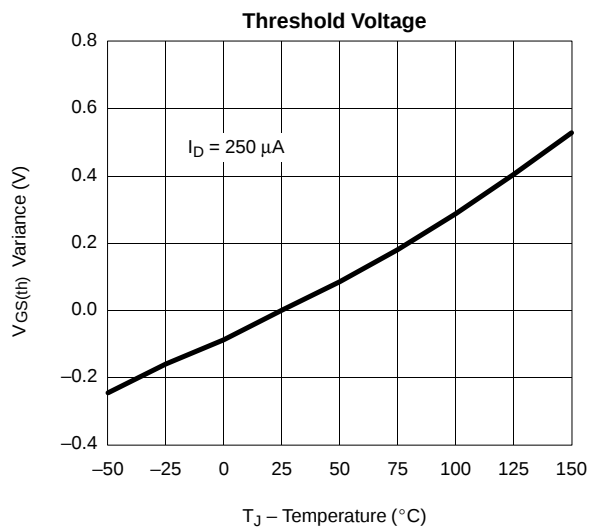
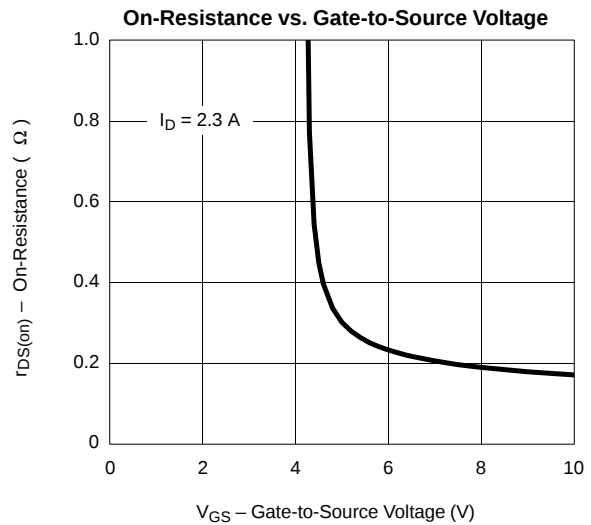
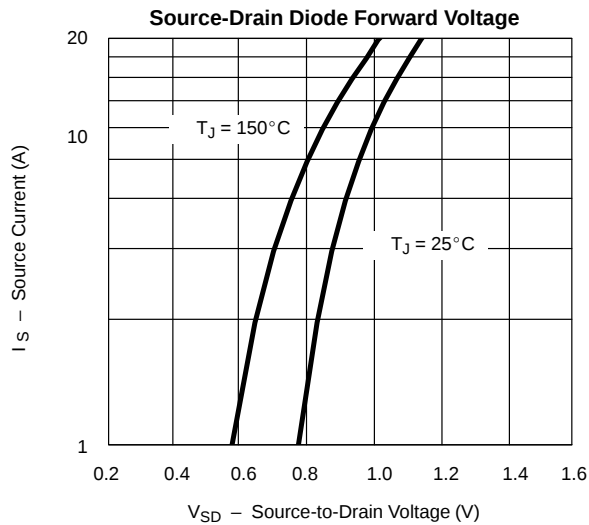
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL





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