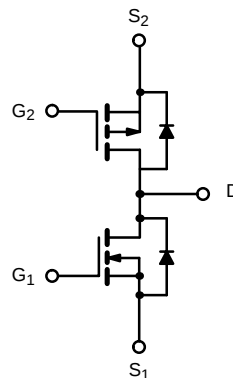
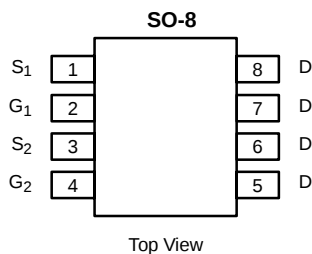




Complementary MOSFET Half-Bridge (N- and P-Channel)

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	30	0.018 @ $V_{GS} = 10$ V	± 9
		0.027 @ $V_{GS} = 4.5$ V	± 7.4
P-Channel	-8	0.042 @ $V_{GS} = -4.5$ V	± 6.2
		0.060 @ $V_{GS} = -2.5$ V	± 5.2



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		V _{DS}	30	-8	V
Gate-Source Voltage		V _{GS}	± 20	± 8	
Continuous Drain Current (T _J = 150°C) ^{a, b}	T _A = 25°C	I _D	± 9	± 6.2	A
	T _A = 70°C		± 7.4	± 5.0	
Pulsed Drain Current		I _{DM}	± 30	± 20	
Continuous Source Current (Diode Conduction) ^{a, b}		I _S	1.7	-1.7	
Maximum Power Dissipation ^{a, b}	T _A = 25°C	P _D	2.5		W
	T _A = 70°C		1.6		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS							
Parameter		Symbol	N-Channel		P-Channel		Unit
			Typ	Max	Typ	Max	
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}	38	50	40	50	$^\circ\text{C/W}$
	Steady-State		73	95	73	95	
Maximum Junction-to-Foot	Steady-State	R_{thJC}	17	22	20	26	

Notes

- a. Surface Mounted on FR4 Board.
b. $t \leq 10$ 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			V	
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-0.45				
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V	N-Ch			±100	nA	
		V _{DS} = 0 V, V _{GS} = ±8 V	P-Ch			±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	N-Ch			1	μA	
		V _{DS} = -6.4 V, V _{GS} = 0 V	P-Ch			-1		
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 55°C	N-Ch			5		
		V _{DS} = -6.4 V, V _{GS} = 0 V, T _J = 55°C	P-Ch			-5		
On-State Drain Current ^b	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N-Ch	30			A	
		V _{DS} = -5 V, V _{GS} = -4.5 V	P-Ch	-20				
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 9 A	N-Ch		0.015	0.018	Ω	
		V _{GS} = -4.5 V, I _D = -6.2 A	P-Ch		0.034	0.042		
		V _{GS} = 4.5 V, I _D = 7.4 A	N-Ch		0.022	0.027		
		V _{GS} = -2.5 V, I _D = -5.2 A	P-Ch		0.048	0.060		
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 9 A	N-Ch		20		S	
		V _{DS} = -15 V, I _D = -6.2 A	P-Ch		14			
Diode Forward Voltage ^b	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V	N-Ch		0.71	1.1	V	
		I _S = -1.7 A, V _{GS} = 0 V	P-Ch		-0.70	-1.1		
Dynamic ^a								
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 5 V, I _D = 9 A P-Channel V _{DS} = -4 V, V _{GS} = -5 V, I _D = -6.2 A	N-Ch		4.5	20	nC	
			P-Ch		15	25		
Gate-Source Charge	Q _{gs}		N-Ch		3.3			
			P-Ch		3.0			
Gate-Drain Charge	Q _{gd}		N-Ch		6.6			
			P-Ch		2.0			
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω P-Channel V _{DD} = -4 V, R _L = 4 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω	N-Ch		13	20	ns	
			P-Ch		20	40		
Rise Time	t _r		N-Ch		9	18		
			P-Ch		50	100		
Turn-Off Delay Time	t _{d(off)}		N-Ch		35	50		
			P-Ch		110	220		
Fall Time	t _f		N-Ch		17	30		
			P-Ch		60	120		
Source-Drain Reverse Recovery Time	t _{rr}		N-Ch		35	70		
			P-Ch		60	100		

Notes

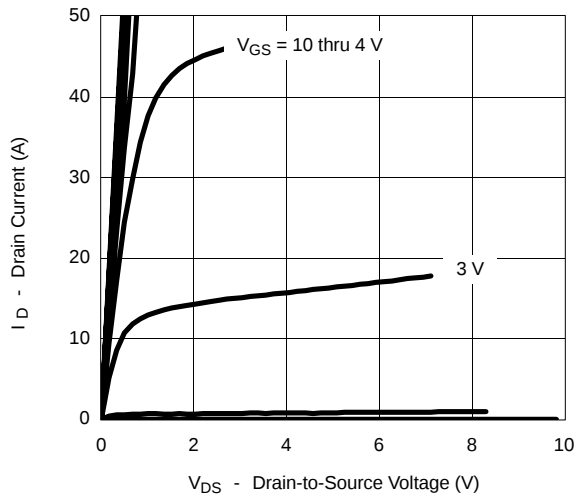
- a. Guaranteed by design, not subject to production testing.
 b. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.



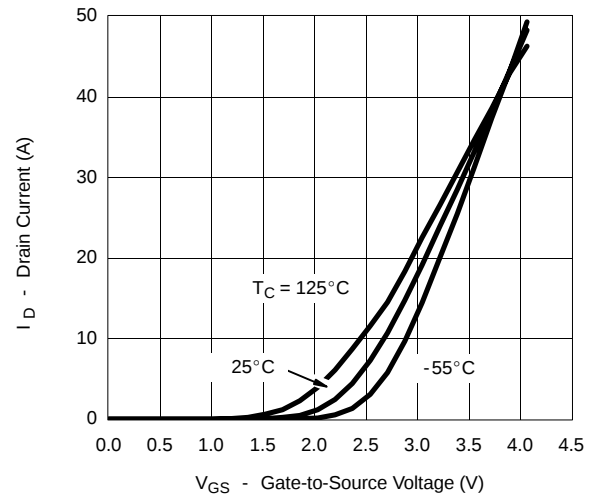
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

NCHANNEL

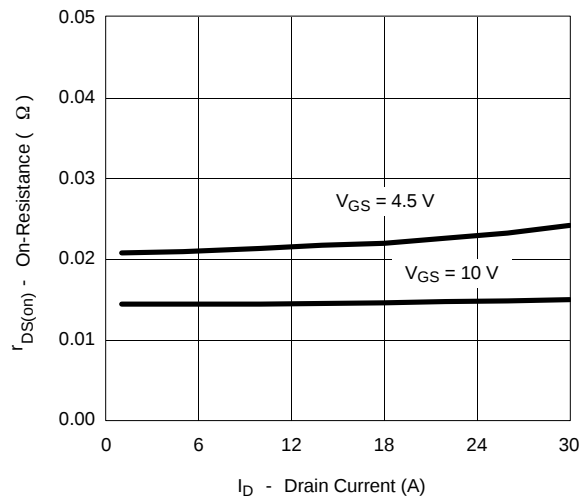
Output Characteristics



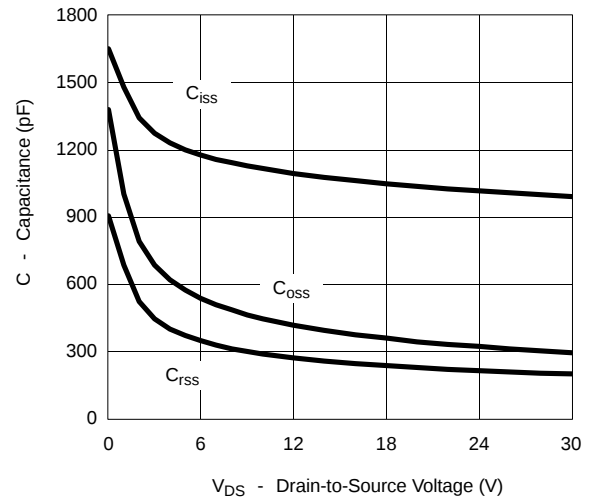
Transfer Characteristics



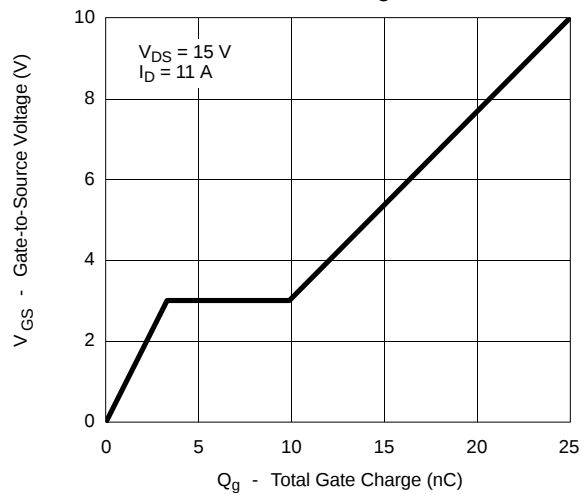
On-Resistance vs. Drain Current



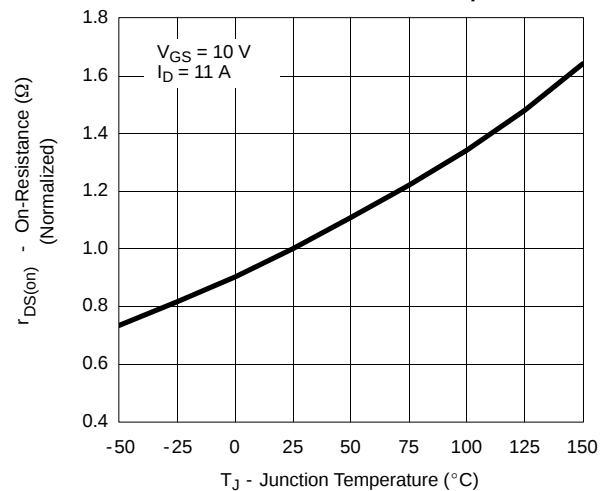
Capacitance



Gate Charge

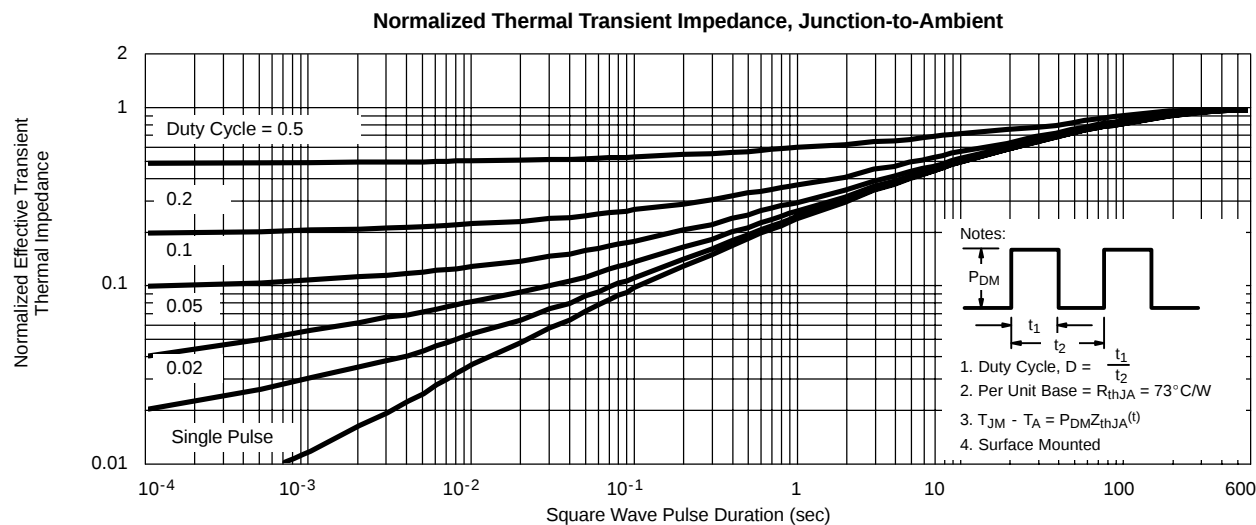
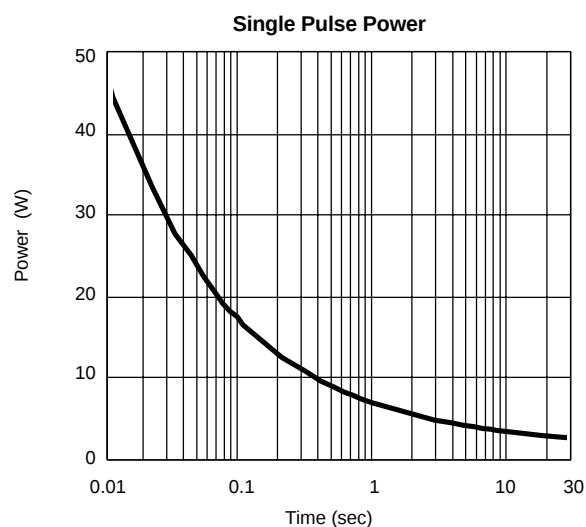
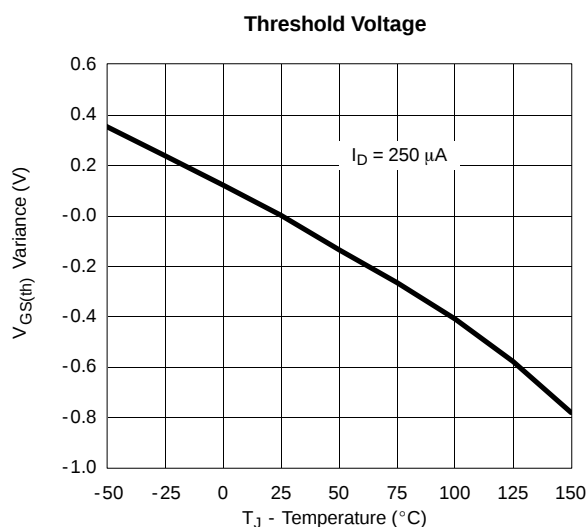
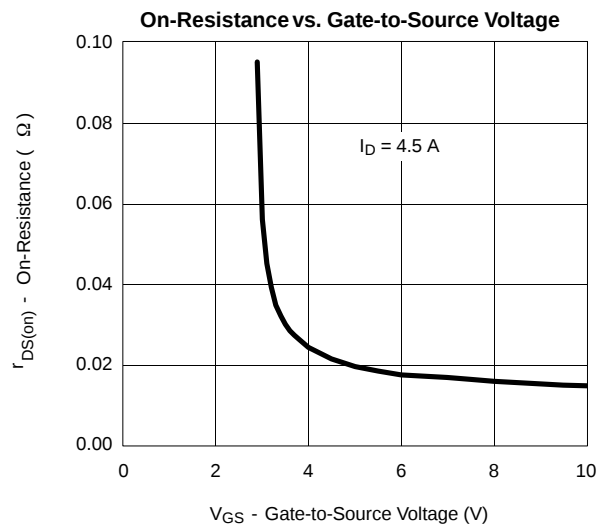
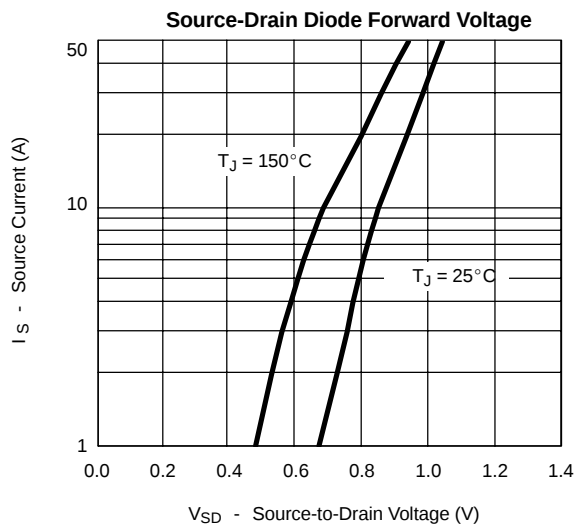


On-Resistance vs. Junction Temperature



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

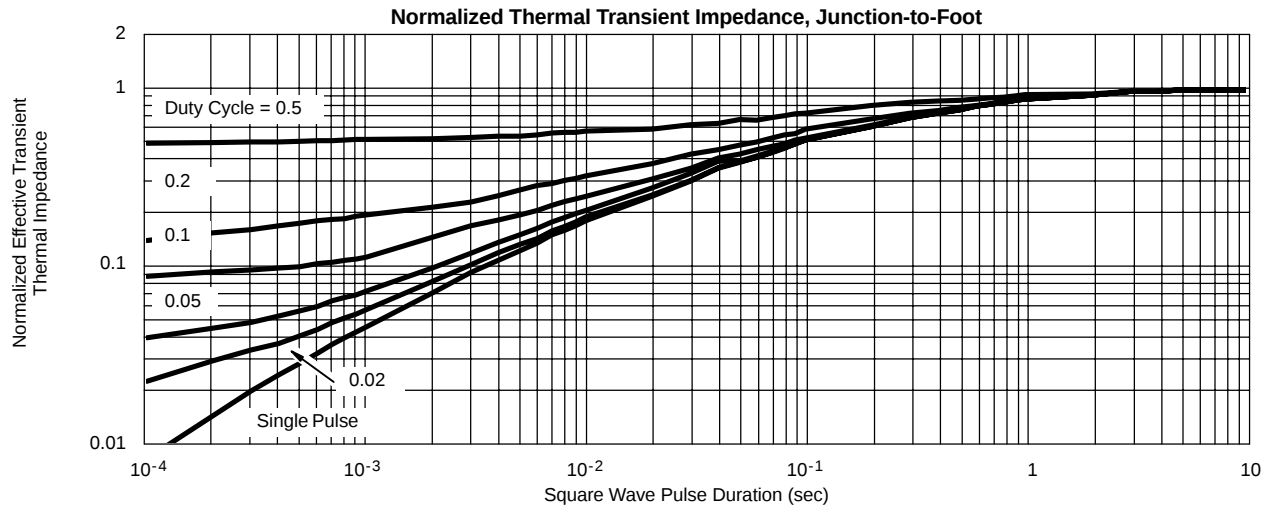
NCHANNEL





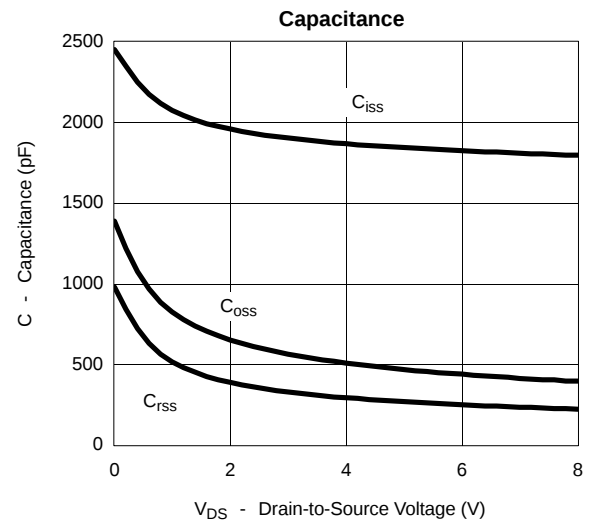
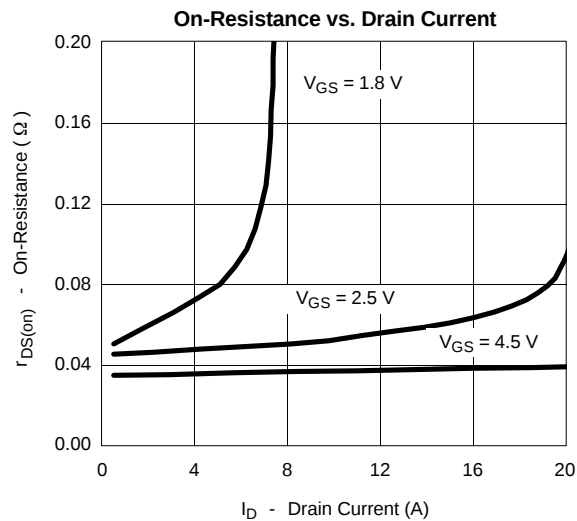
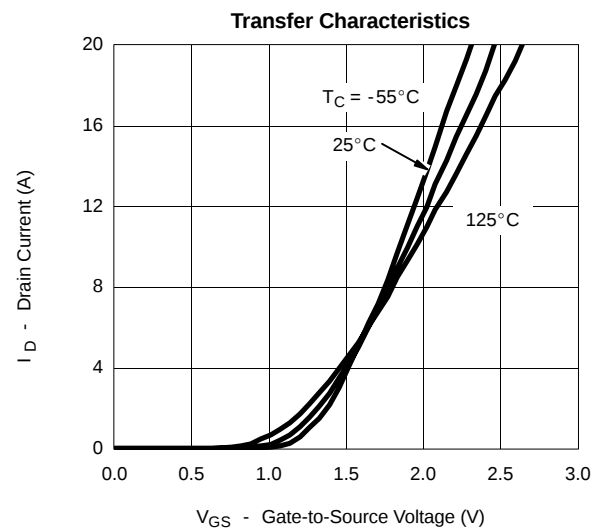
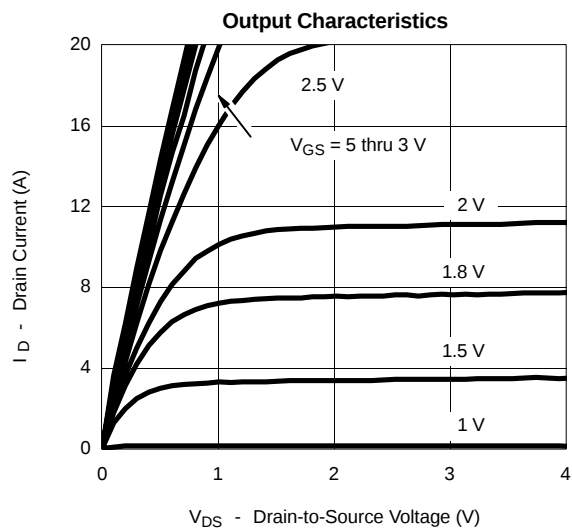
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

NCHANNEL



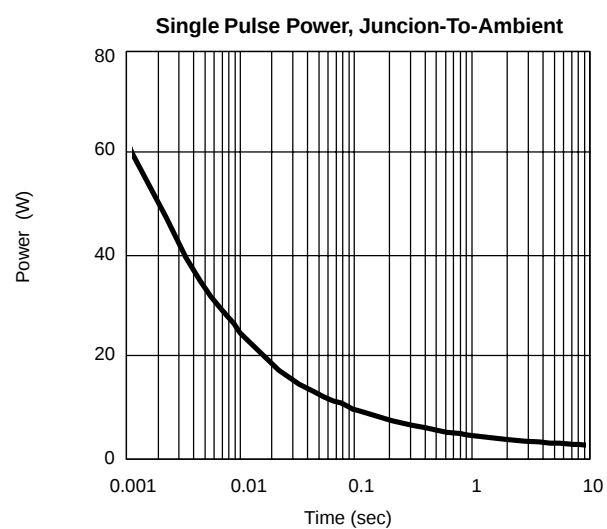
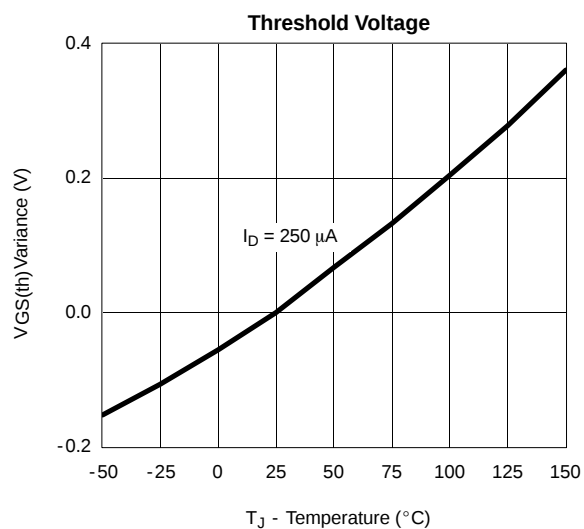
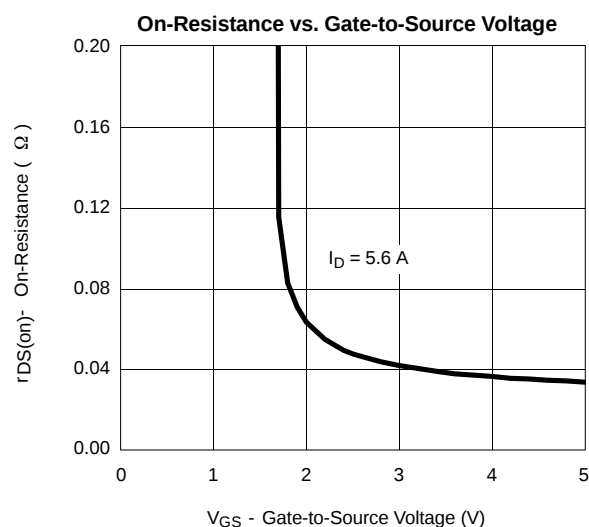
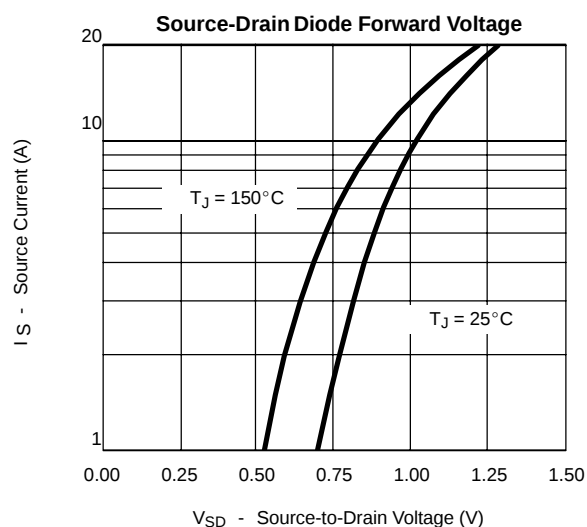
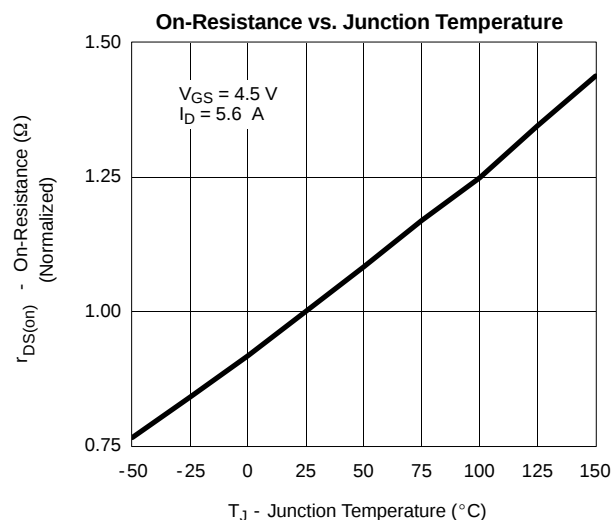
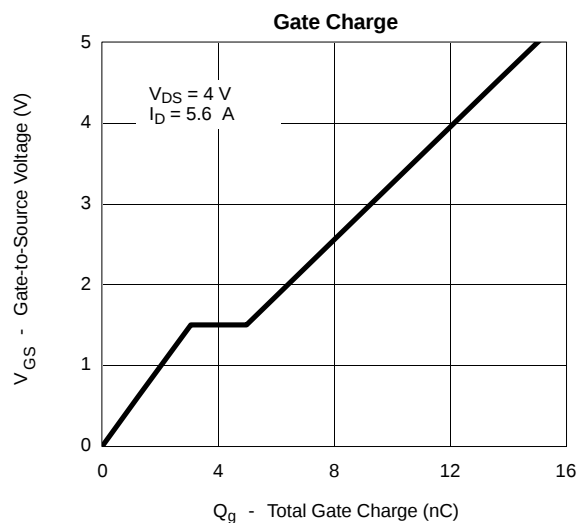
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

PCHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

PCHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

PCHANNEL

