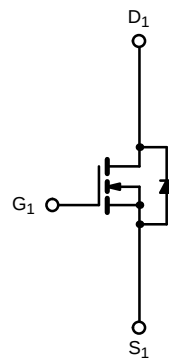
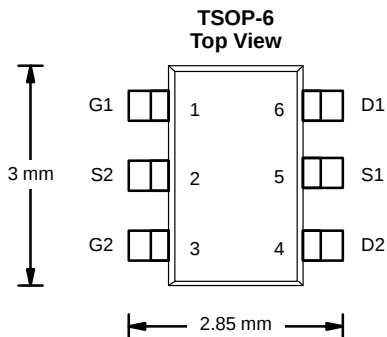


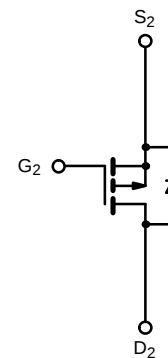


N- and P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	30	0.105 @ $V_{GS} = 10$ V	± 2.5
		0.175 @ $V_{GS} = 4.5$ V	± 2.0
P-Channel	-30	0.200 @ $V_{GS} = -10$ V	± 1.8
		0.360 @ $V_{GS} = -4.5$ V	± 1.2

TrenchFET[®]
Power MOSFETs

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}	30	−30	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current (T _J = 150°C) ^{a, b}	T _A = 25°C	I _D	± 2.5	± 1.8	A
	T _A = 70°C		± 2.0	± 1.2	
Pulsed Drain Current		I _{DM}	± 8	± 7	
Continuous Source Current (Diode Conduction) ^{a, b}		I _S	1.05	−1.05	
Maximum Power Dissipation ^{a, b}	T _A = 25°C	P _D	1.15		W
	T _A = 70°C		0.73		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	93	110	$^\circ\text{C/W}$
	Steady State		130	150	
Maximum Junction-to-Lead	Steady State	R_{thJL}	75	90	

Notes

a. Surface Mounted on FR4 Board.

b. $t \leq 5$ sec

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	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	N-Ch P-Ch			±100 ±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = −24 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} = −24 V, V _{GS} = 0 V, T _J = 55°C	P-Ch			−5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N-Ch	5			A
		V _{DS} = −5 V, V _{GS} = −10 V	P-Ch	−5			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 2.5 A	N-Ch		0.085	0.105	Ω
		V _{GS} = −10 V, I _D = −1.8 A	P-Ch		0.165	0.200	
		V _{GS} = 4.5 V, I _D = 2.0 A	N-Ch		0.140	0.175	
		V _{GS} = −4.5 V, I _D = −1.2 A	P-Ch		0.298	0.360	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 2.5 A	N-Ch		4.3		S
		V _{DS} = −15 V, I _D = −1.8 A	P-Ch		2.4		
Diode Forward Voltage ^a	V _{SD}	I _S = 1.05 A, V _{GS} = 0 V	N-Ch		0.81	1.10	V
		I _S = −1.05 A, V _{GS} = 0 V	P-Ch		−0.83	−1.10	
Dynamic ^b							
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 5 V, I _D = 1.8 A P-Channel V _{DS} = −15 V, V _{GS} = −5 V, I _D = −1.8 A	N-Ch P-Ch		2.1 2.4	3.2 3.6	nC
Gate-Source Charge	Q _{gs}		N-Ch P-Ch		0.7 0.9		
Gate-Drain Charge	Q _{gd}		N-Ch P-Ch		0.7 0.8		
Turn-On Delay Time	t _{d(on)}		N-Ch P-Ch		7 8	11 12	
Rise Time	t _r	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} = −15 V, R _L = 15 Ω I _D ≅ −1 A, V _{GEN} = −10 V, R _G = 6 Ω	N-Ch P-Ch		9 12	14 18	ns
Turn-Off Delay Time	t _{d(off)}		N-Ch P-Ch		13 12	20 18	
Fall Time	t _f		N-Ch P-Ch		5 7	8 11	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.05 A, di/dt = 100 A/μs I _F = −1.05 A, di/dt = 100 A/μs	N-Ch P-Ch		35 30	

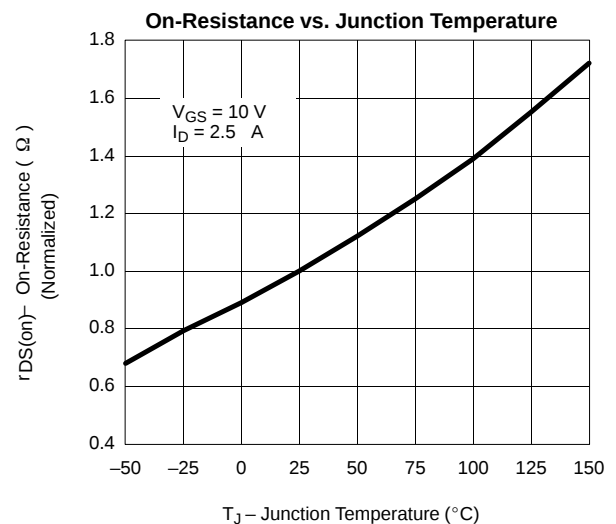
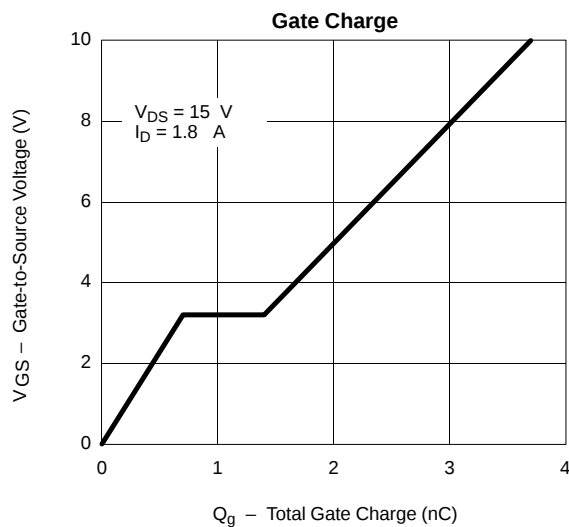
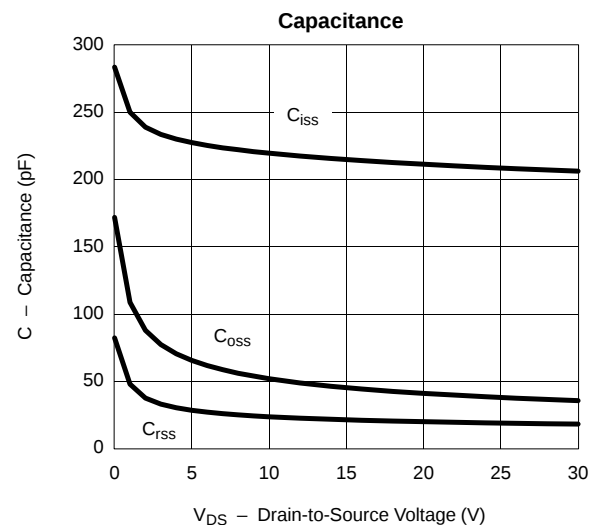
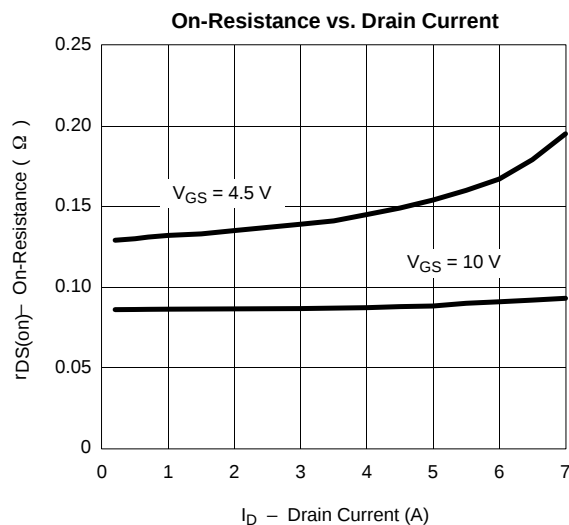
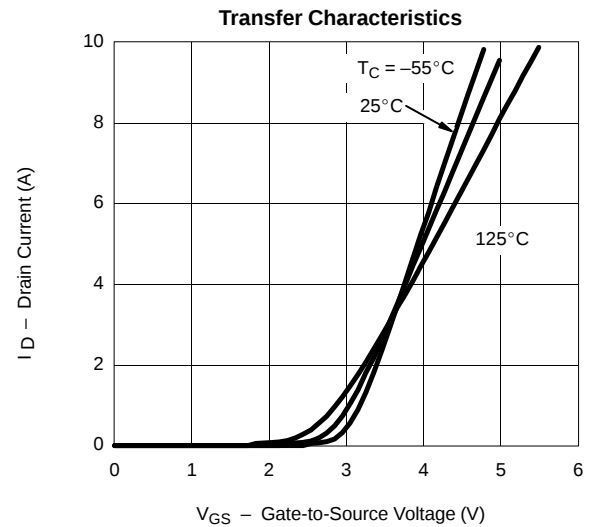
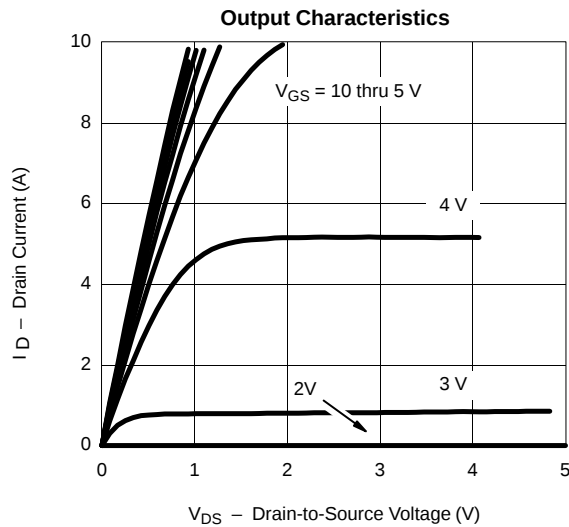
Notes

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



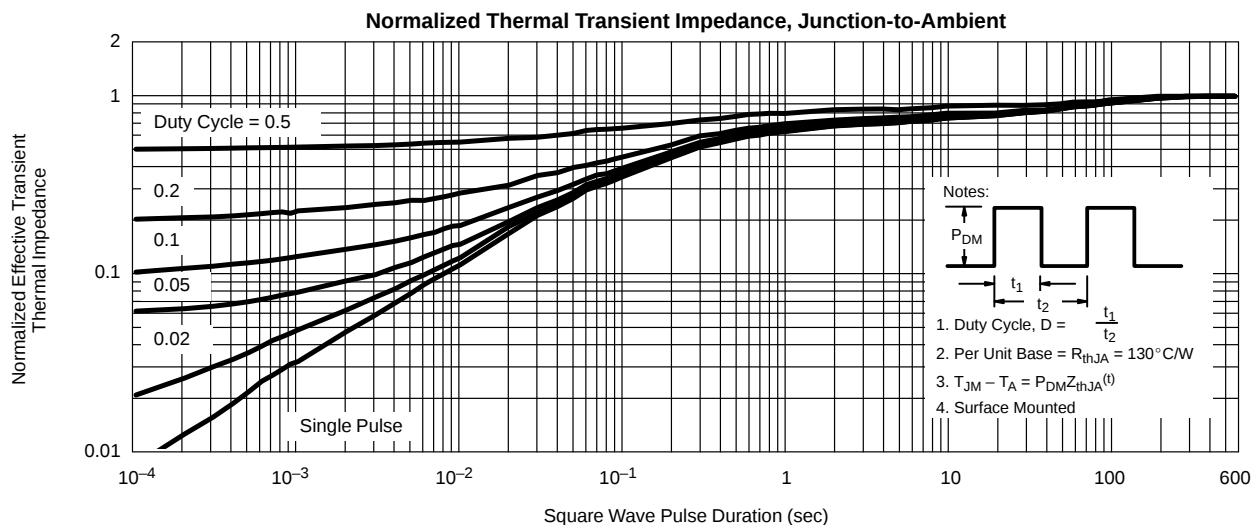
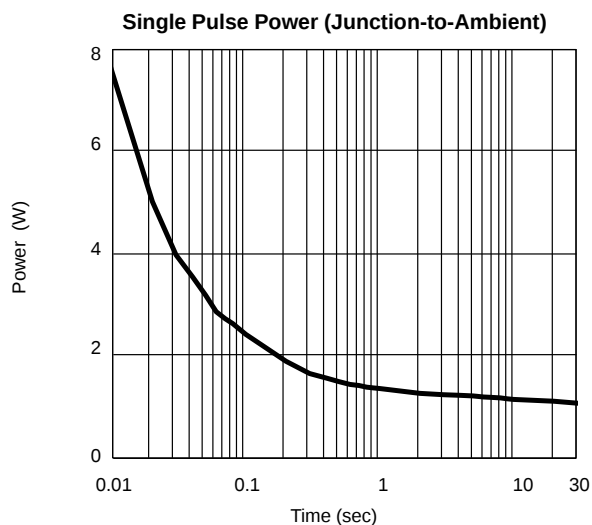
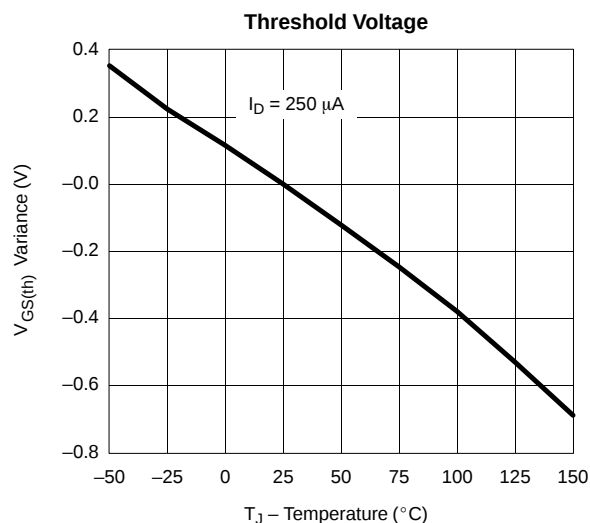
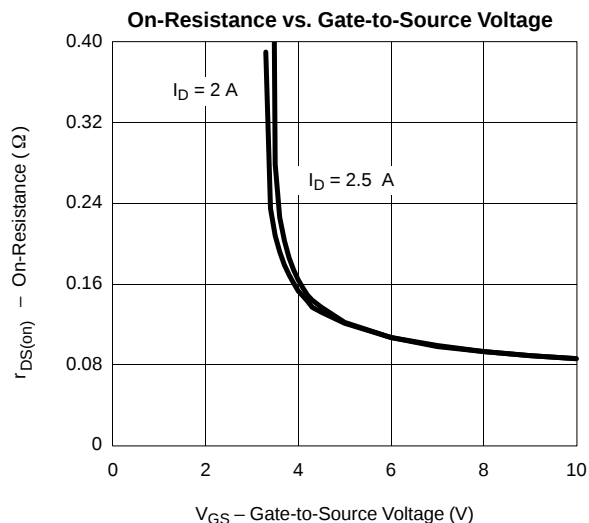
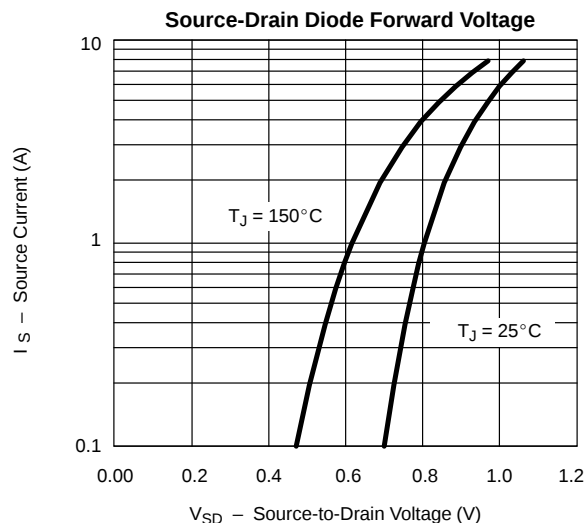
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

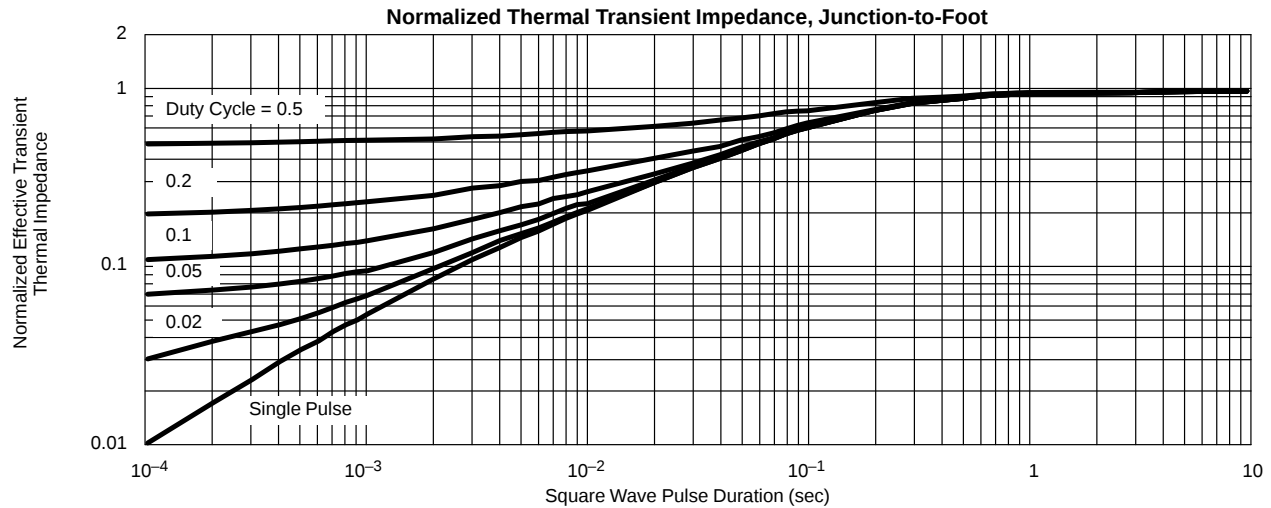
N-CHANNEL





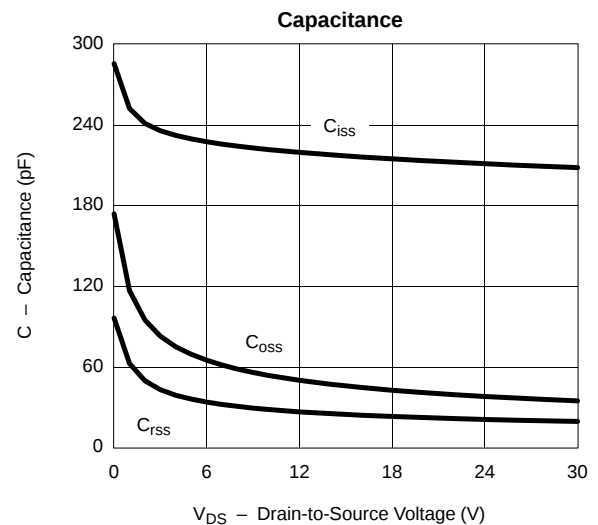
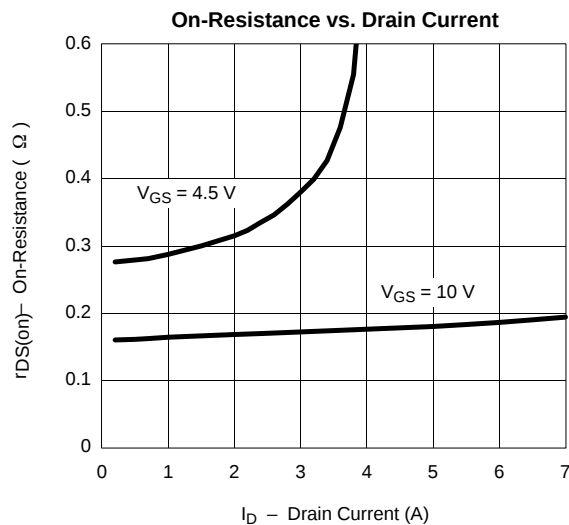
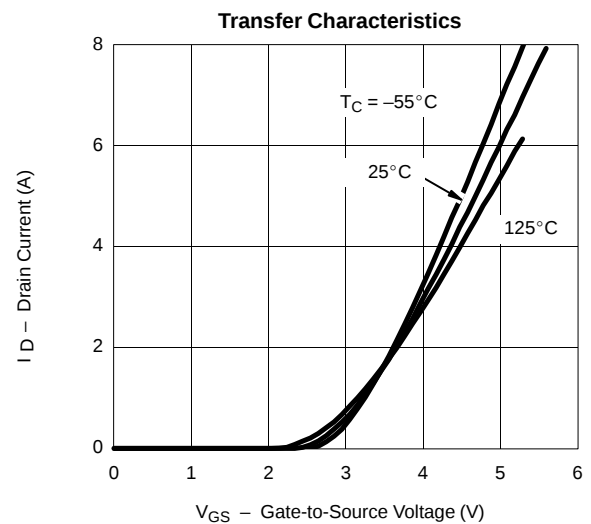
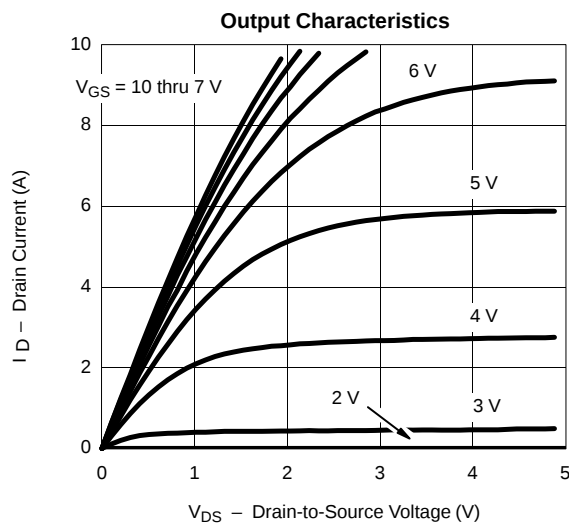
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



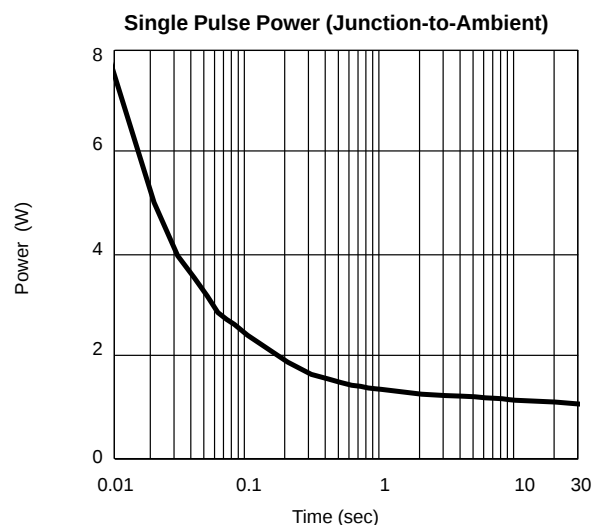
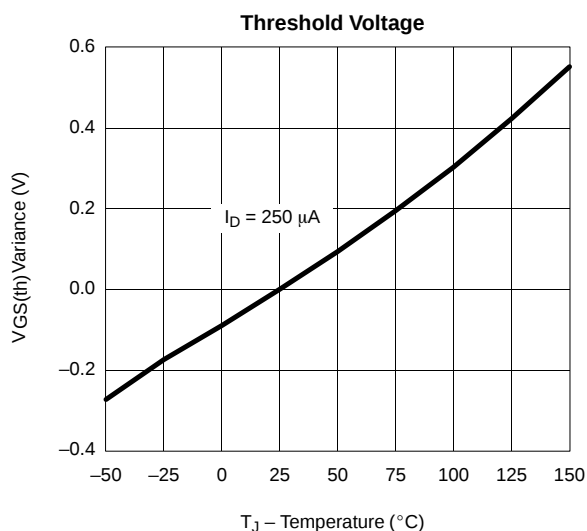
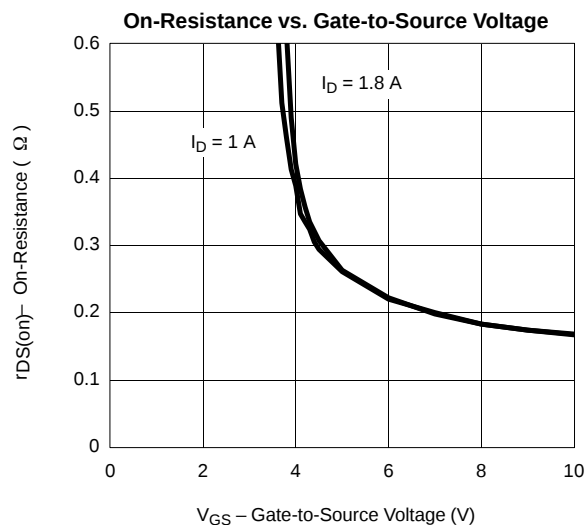
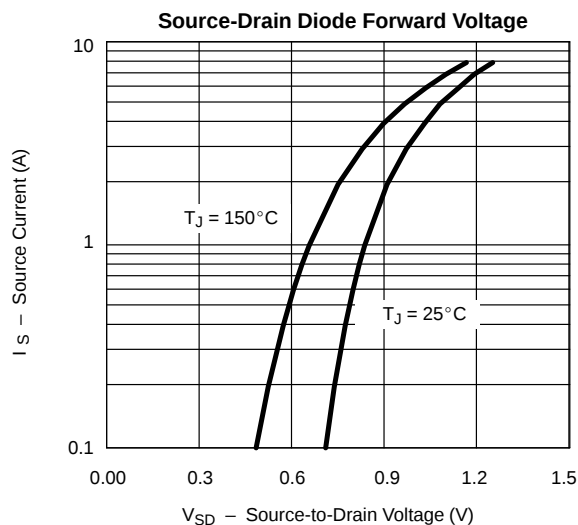
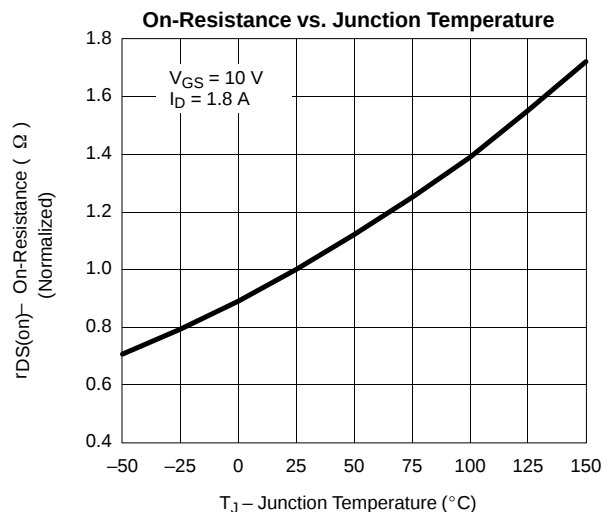
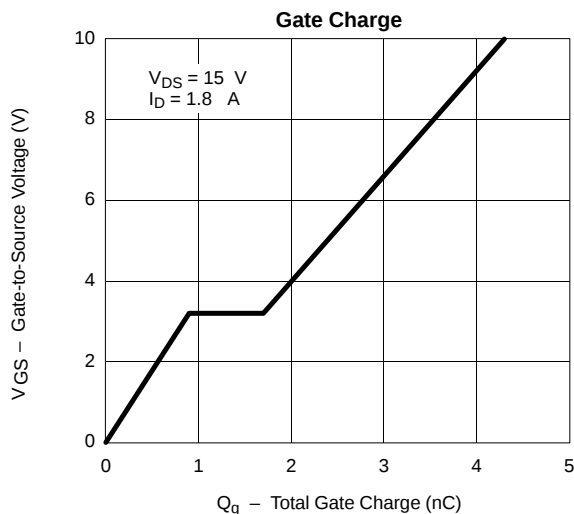
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

