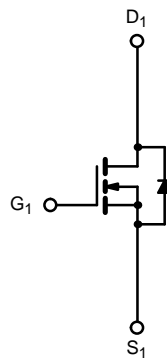
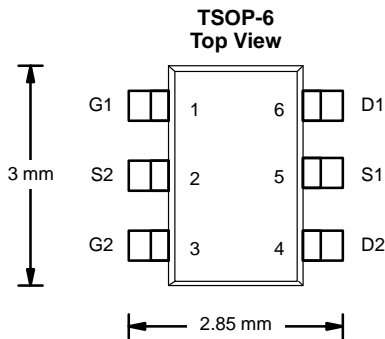




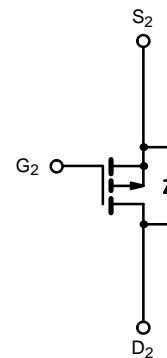
N- and P-Channel 30-V (D-S) MOSFET

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 ($T_A = 25^\circ\text{C}$ 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 ($T_J = 150^\circ\text{C}$) ^{a, b}	I_D	$T_A = 25^\circ\text{C}$	± 2.5	A
		$T_A = 70^\circ\text{C}$	± 2.0	
Pulsed Drain Current	I_{DM}	± 8	± 7	A
Continuous Source Current (Diode Conduction) ^{a, b}	I_S	1.05	-1.05	
Maximum Power Dissipation ^{a, b}	P_D	$T_A = 25^\circ\text{C}$	1.15	W
		$T_A = 70^\circ\text{C}$	0.73	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	$t \leq 5$ sec	93	$^\circ\text{C/W}$
		Steady State	130	
Maximum Junction-to-Lead	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		2.1	3.2	nC
Gate-Source Charge	Q _{gs}		P-Ch		2.4	3.6	
Gate-Drain Charge	Q _{gd}		N-Ch		0.7		
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} = -15 V, R _L = 15 Ω I _D ≅ -1 A, V _{GEN} = -10 V, R _G = 6 Ω	P-Ch		0.8		ns
Rise Time	t _r		N-Ch		7	11	
Turn-Off Delay Time	t _{d(off)}		P-Ch		8	12	
			N-Ch		9	14	
Fall Time	t _f		P-Ch		12	18	
			N-Ch		13	20	
Source-Drain Reverse Recovery Time	t _{rr}		P-Ch		12	18	
		N-Ch		5	8		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.05 A, di/dt = 100 A/μs	N-Ch		35	60	
		I _F = -1.05 A, di/dt = 100 A/μs	P-Ch		30	60	

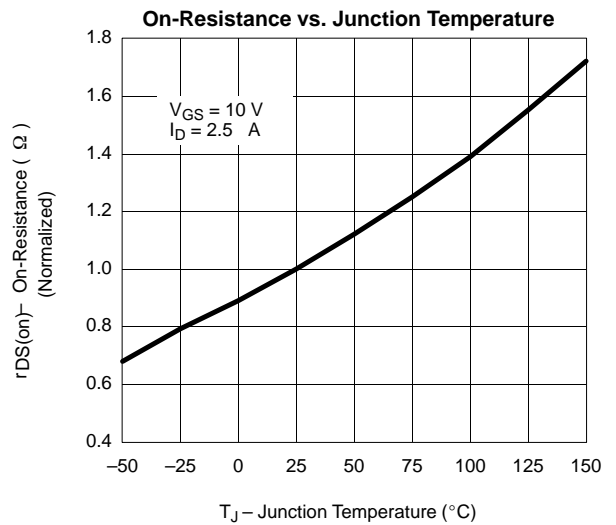
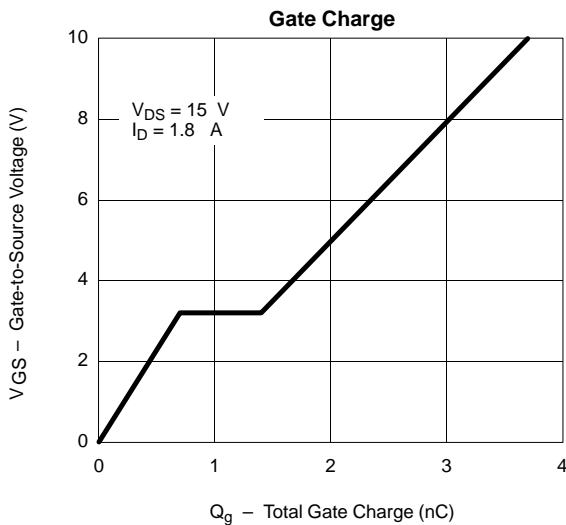
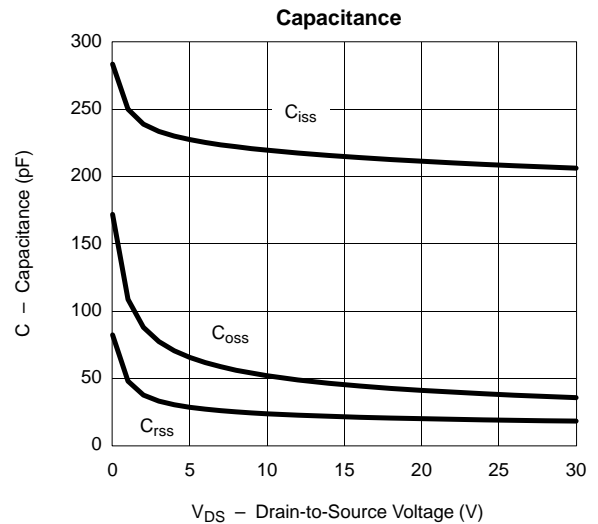
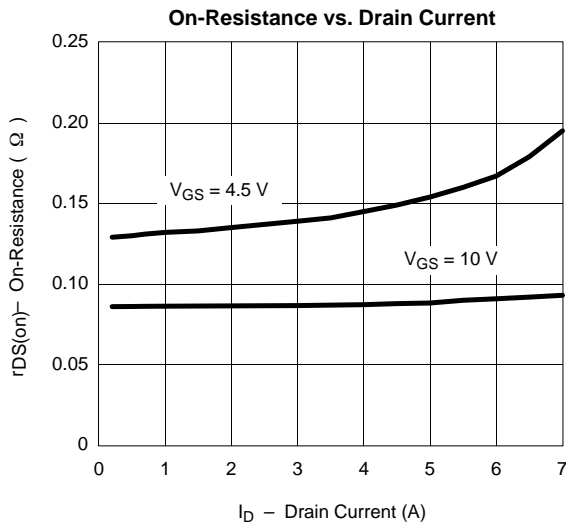
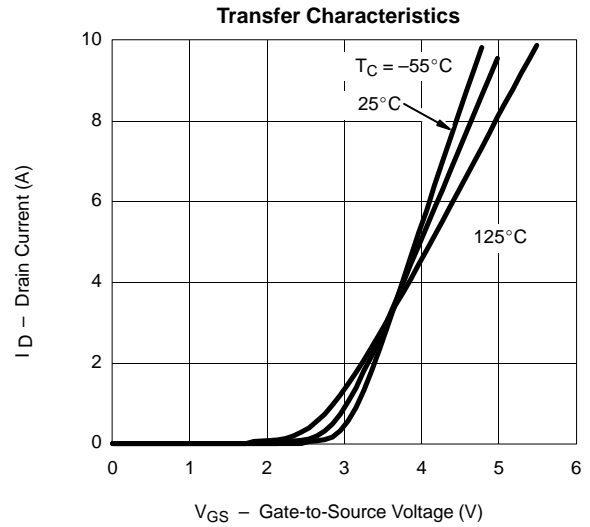
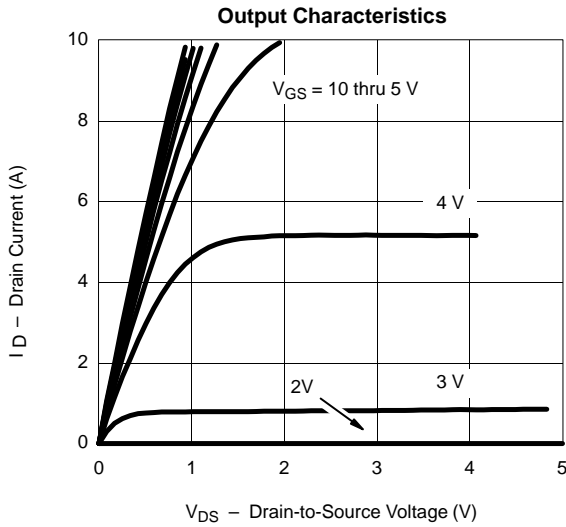
Notes

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



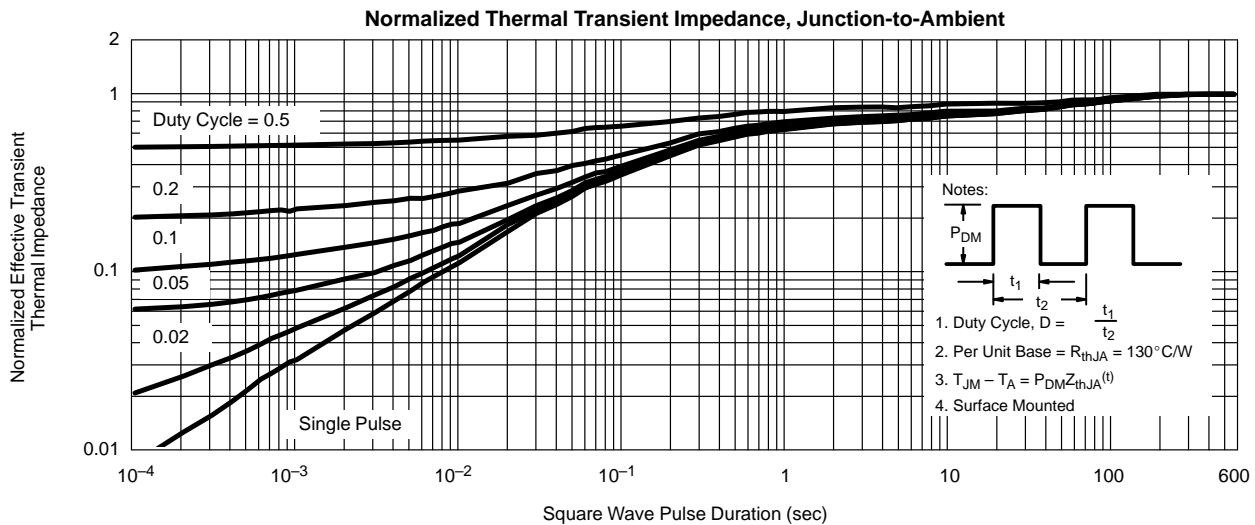
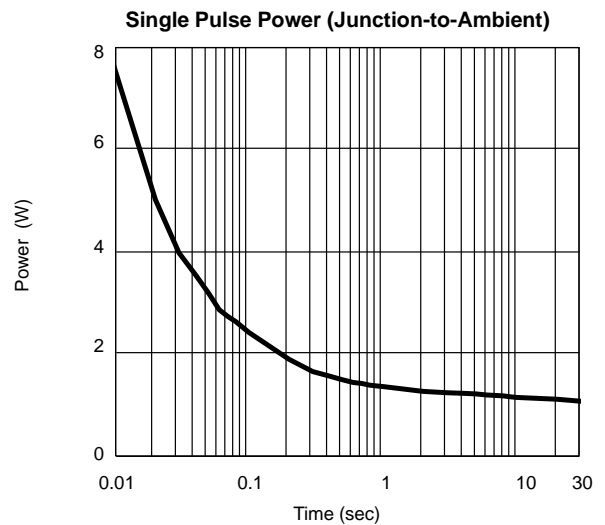
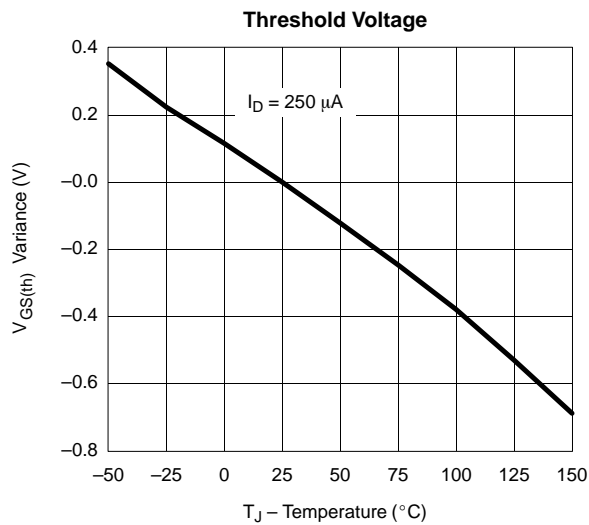
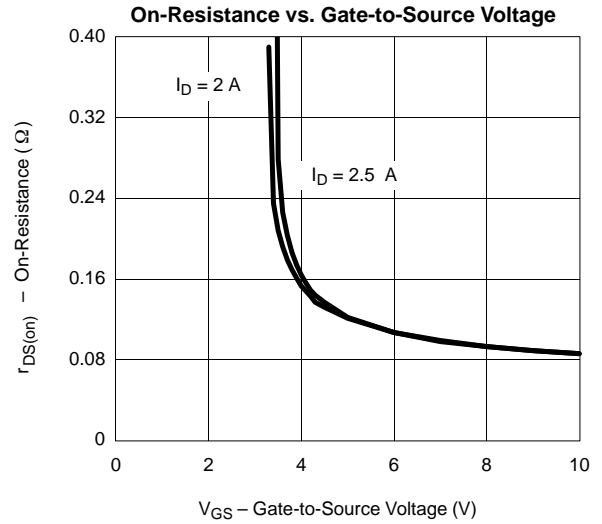
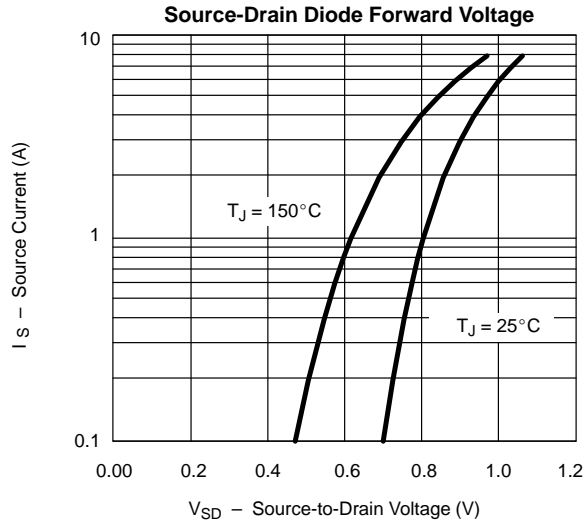
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



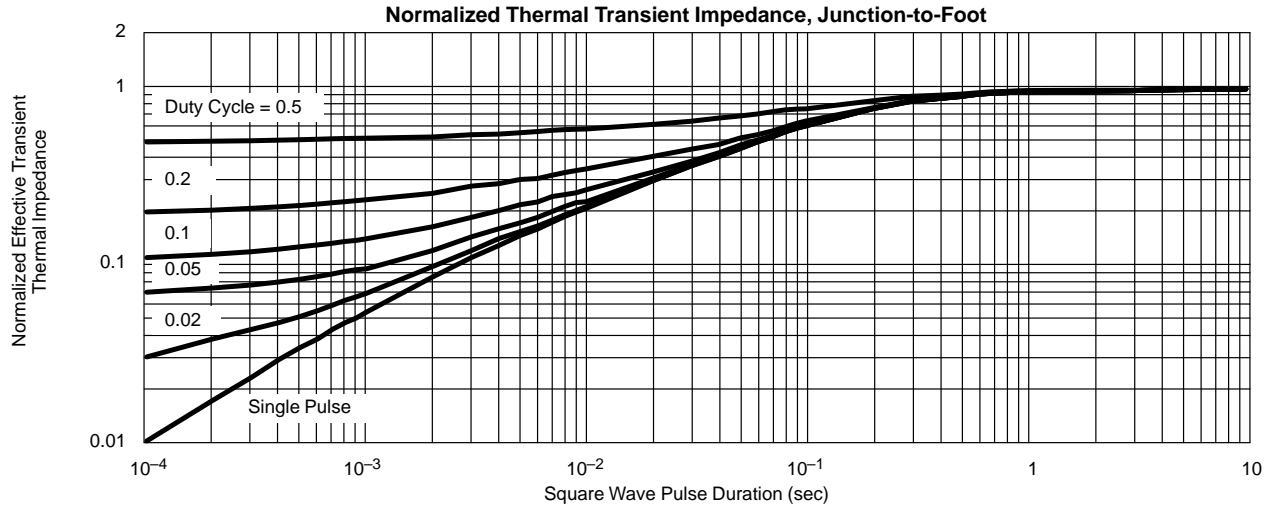


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL

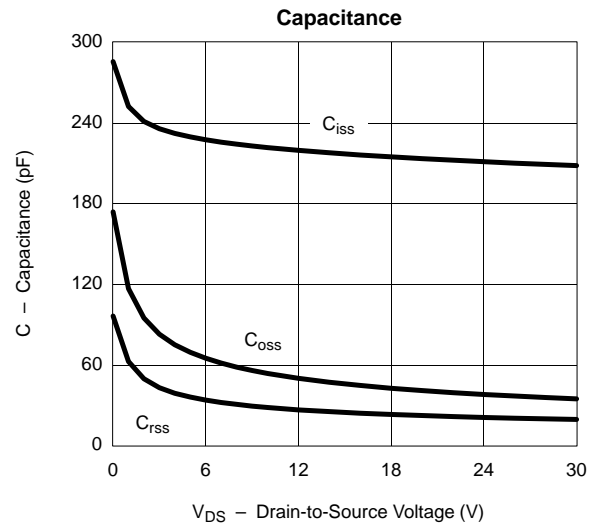
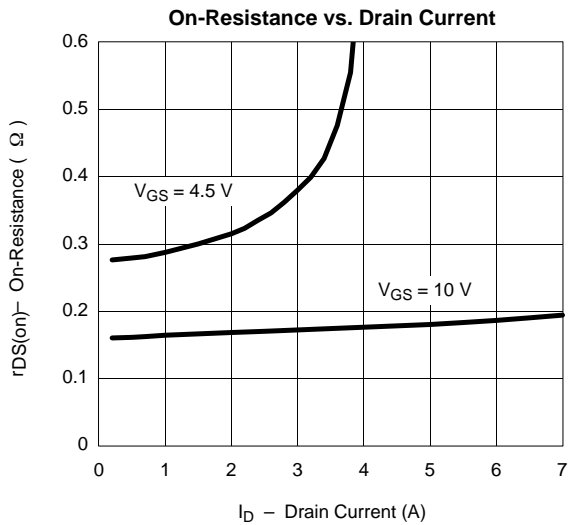
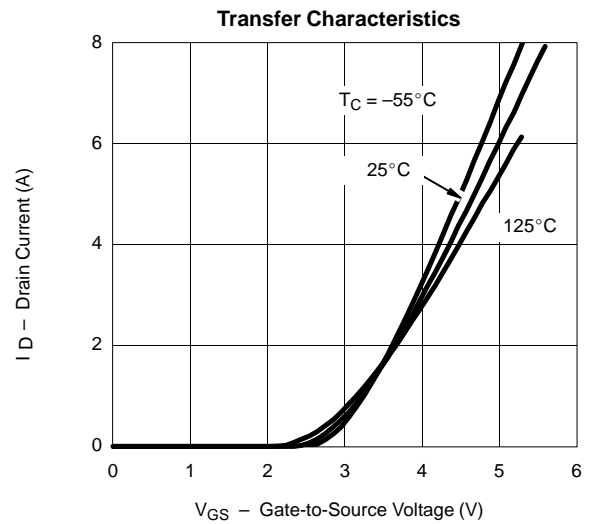
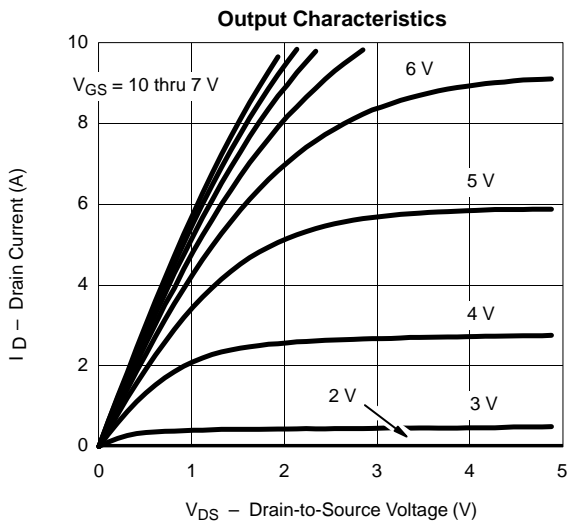




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL



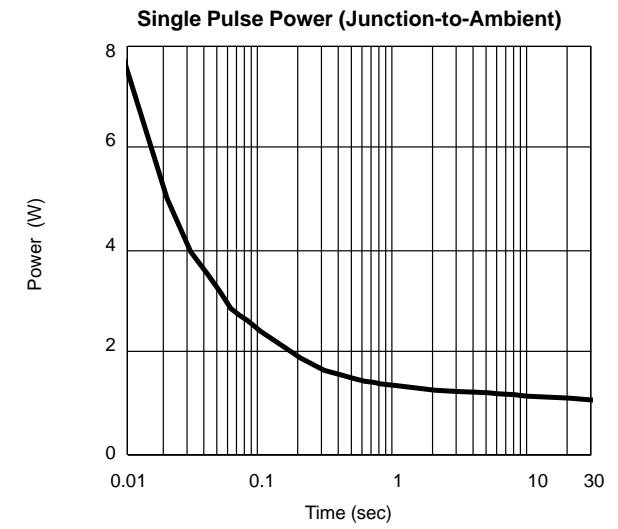
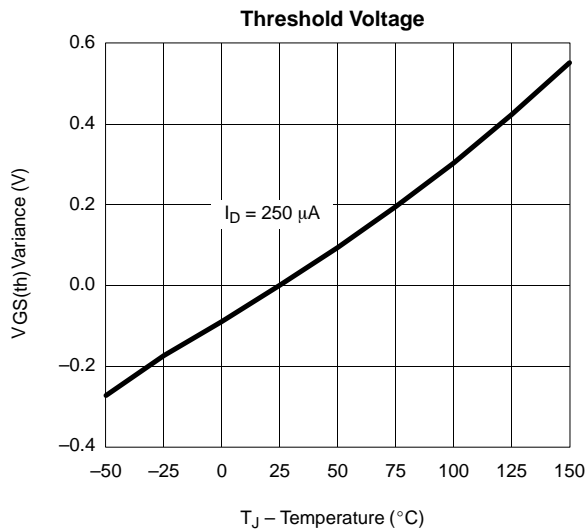
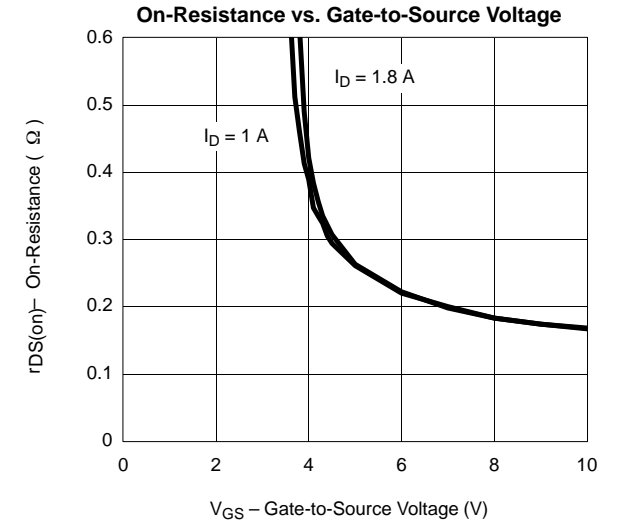
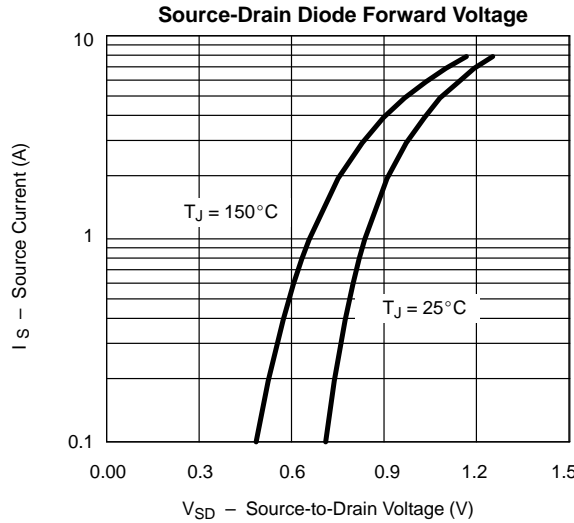
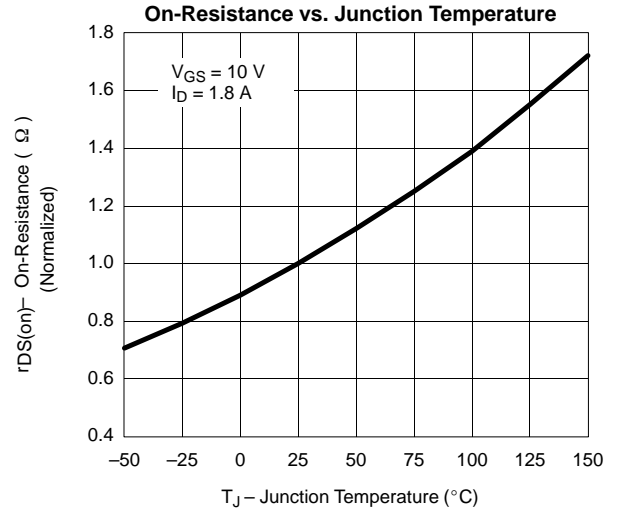
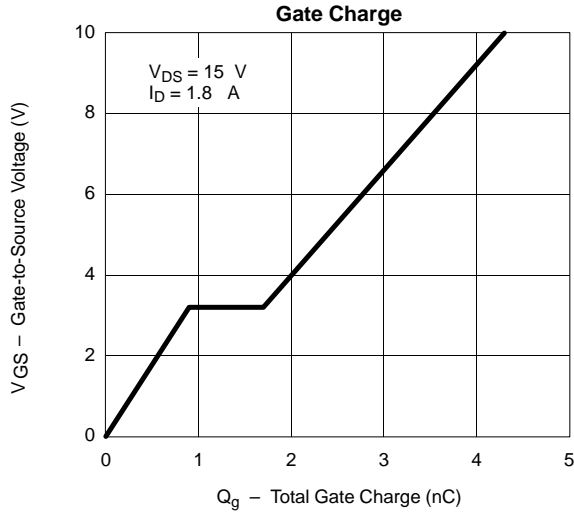
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) P-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) P-CHANNEL

