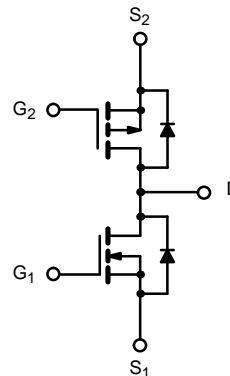
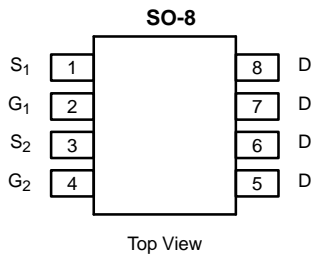




Complementary MOSFET Half-Bridge (N- and P-Channel)

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.030 @ $V_{GS} = 4.5$ V	± 7.0
		0.040 @ $V_{GS} = 2.5$ V	± 6.0
P-Channel	-20	0.065 @ $V_{GS} = -4.5$ V	± 4.5
		0.100 @ $V_{GS} = -2.5$ V	± 3.5



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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 ($T_J = 150^\circ\text{C}$) ^{a, b}	I_D	$T_A = 25^\circ\text{C}$	± 7.0	A
		$T_A = 70^\circ\text{C}$	± 5.5	
Pulsed Drain Current	I_{DM}	± 30	± 20	A
Continuous Source Current (Diode Conduction) ^{a, b}	I_S	1.7	-1.7	
Maximum Power Dissipation ^{a, b}	P_D	$T_A = 25^\circ\text{C}$	2.5	W
		$T_A = 70^\circ\text{C}$	1.6	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS							
Parameter	Symbol	N-Channel		P-Channel		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient ^a	R_{thJA}	$t \leq 10$ sec	38	50	40	50	$^\circ\text{C/W}$
		Steady-State	73	95	73	95	
Maximum Junction-to-Foot	R_{thJC}	Steady-State	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	0.6			V
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-0.6			
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} = 16 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch		5		
		V _{DS} = -16 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} = 4.5 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} = 4.5 V, I _D = 7.0 A	N-Ch		0.022	0.030	Ω
		V _{GS} = -4.5 V, I _D = -4.5 A	P-Ch		0.058	0.065	
		V _{GS} = 2.5 V, I _D = 6.0 A	N-Ch		0.030	0.040	
		V _{GS} = -2.5 V, I _D = -3.5 A	P-Ch		0.087	0.100	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 7.0 A	N-Ch		22	S	
		V _{DS} = -15 V, I _D = -4.5 A	P-Ch		10		
Diode Forward Voltage ^b	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V	N-Ch		0.70	1.2	V
		I _S = -1.7 A, V _{GS} = 0 V	P-Ch		-0.80	-1.2	
Dynamic^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 3.5 A P-Channel V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -4.5 A	N-Ch		13	25	nC
Gate-Source Charge	Q _{gs}		P-Ch		8.5	15	
			N-Ch		3.0		
Gate-Drain Charge	Q _{gd}		P-Ch		2.8		
		N-Ch		3.3			
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω P-Channel V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω	N-Ch		22	40	ns
			P-Ch		15	30	
Rise Time	t _r		N-Ch		40	80	
			P-Ch		32	60	
Turn-Off Delay Time	t _{d(off)}		N-Ch		50	100	
			P-Ch		57	100	
Fall Time	t _f		N-Ch		20	40	
			P-Ch		40	80	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.7 A, di/dt = 100 A/μs	N-Ch		40	80	
			P-Ch		40	80	

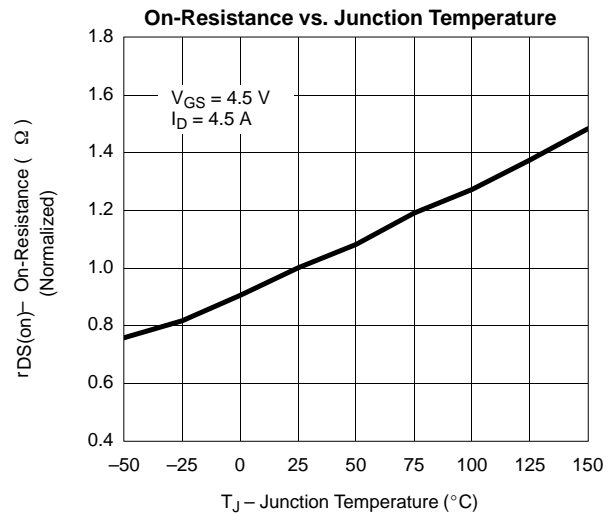
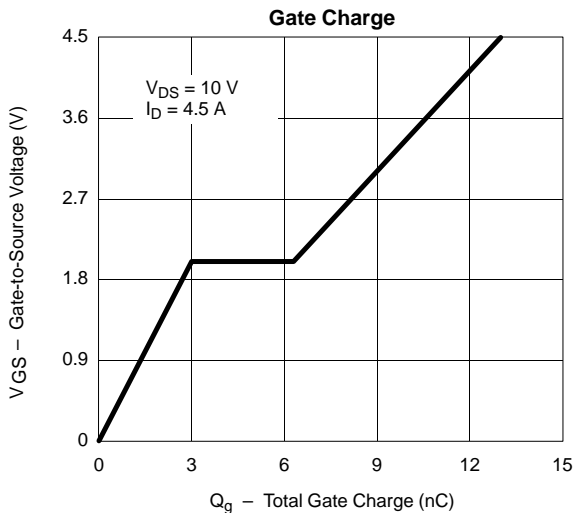
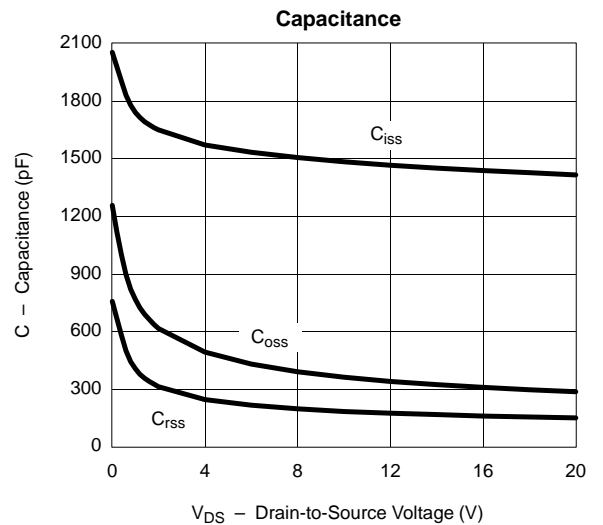
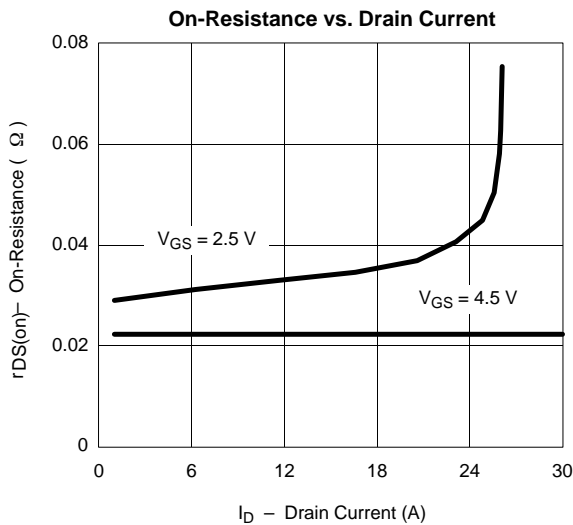
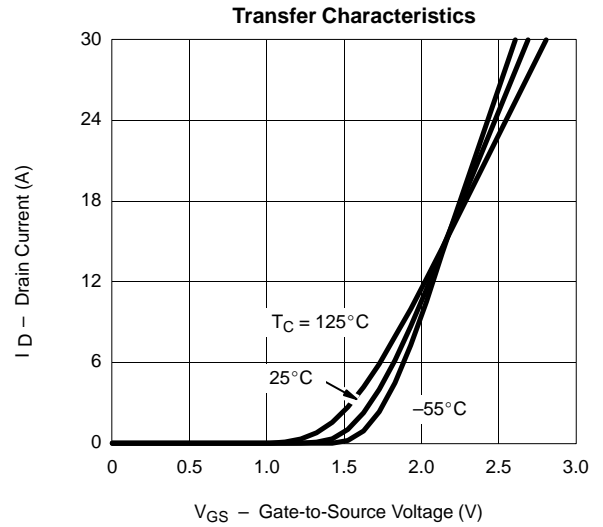
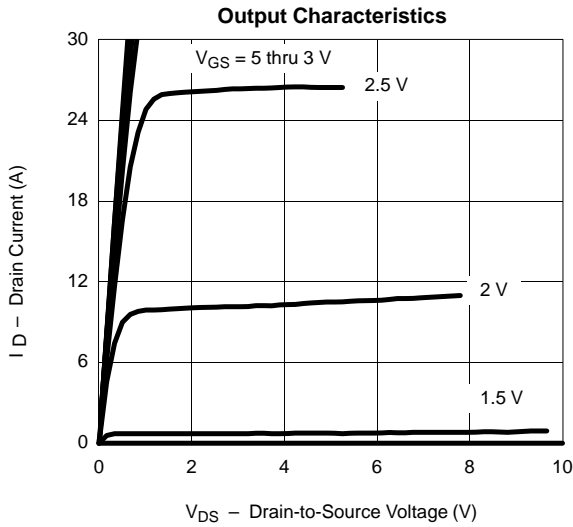
Notes

- 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)

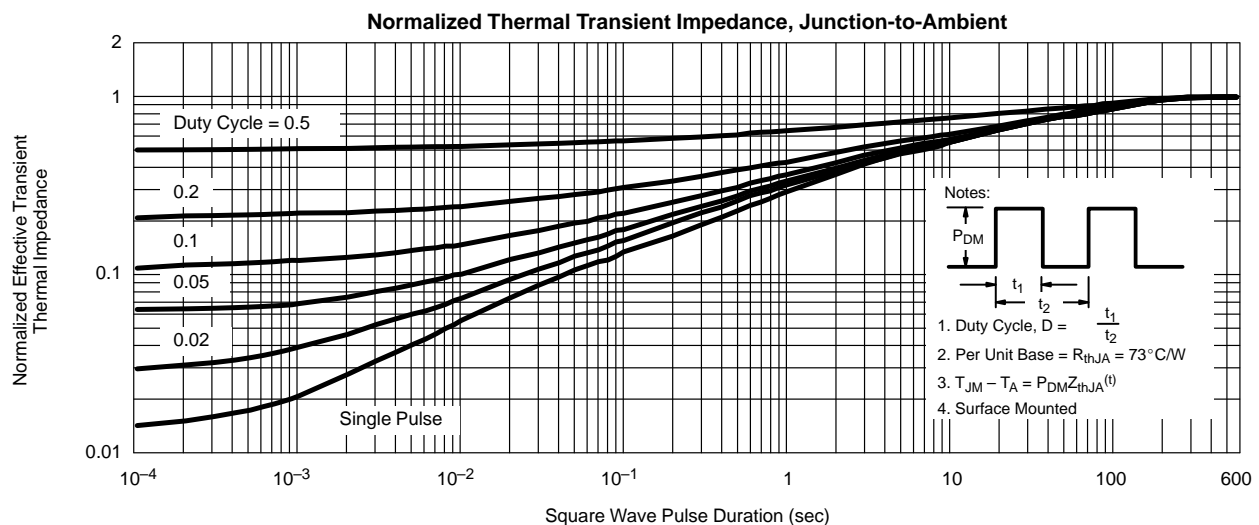
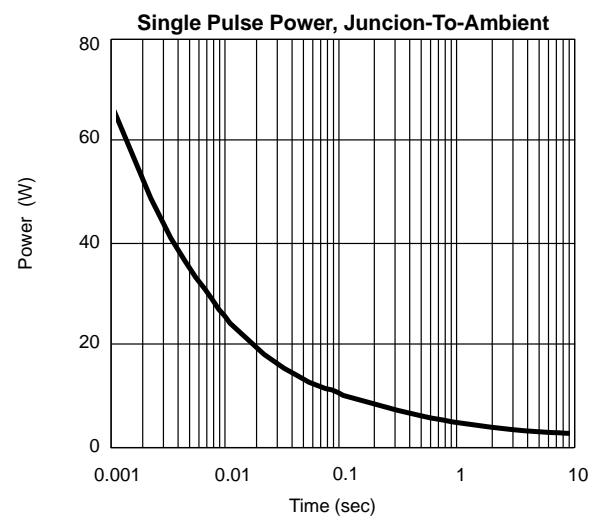
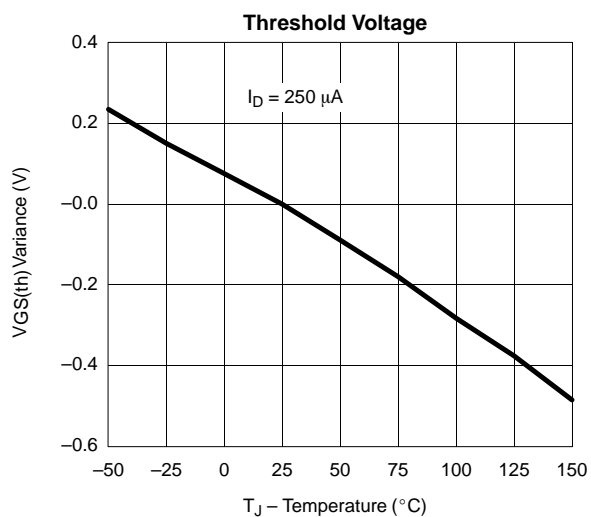
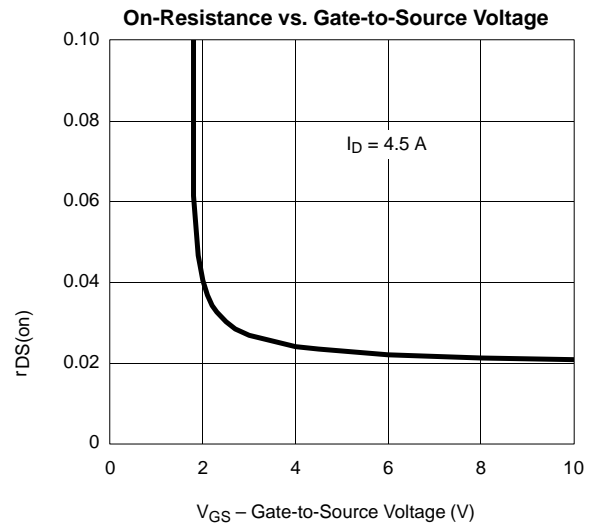
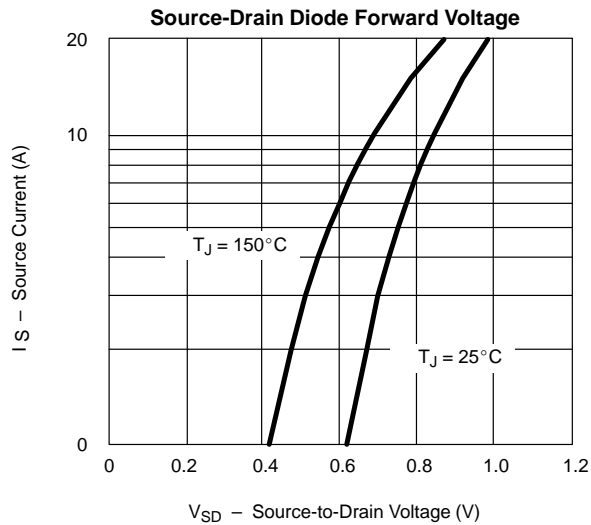
N-CHANNEL





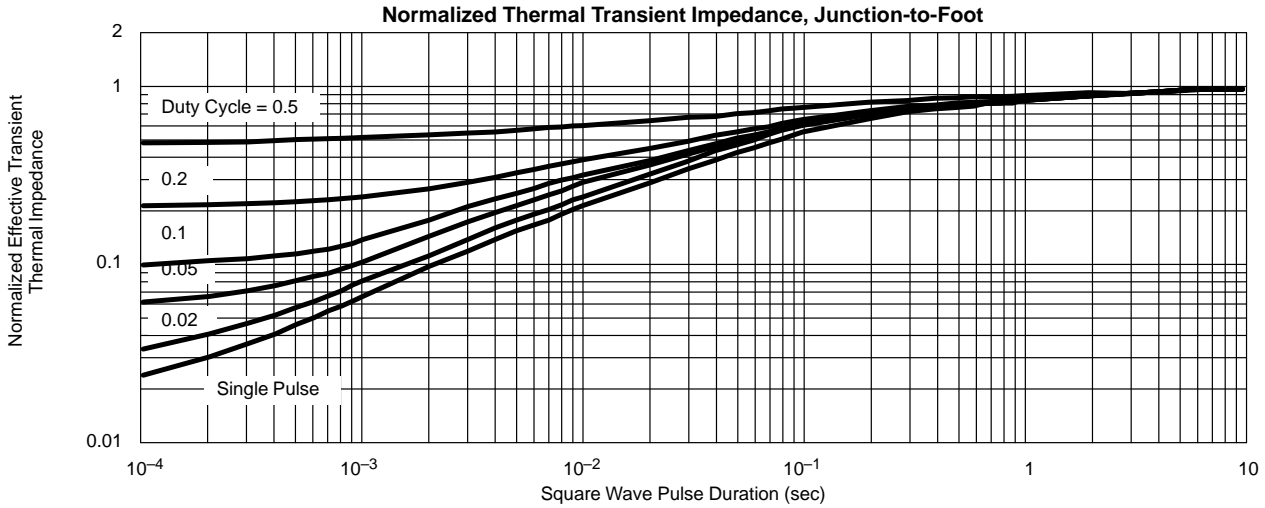
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL

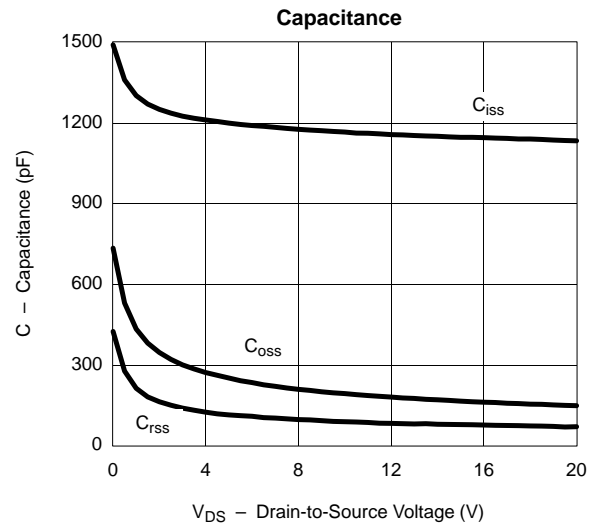
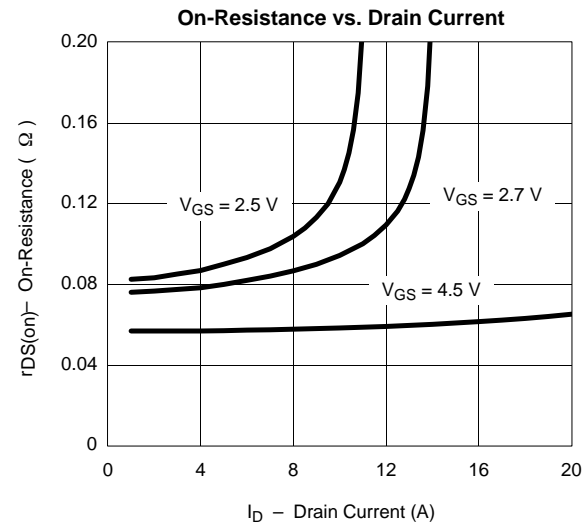
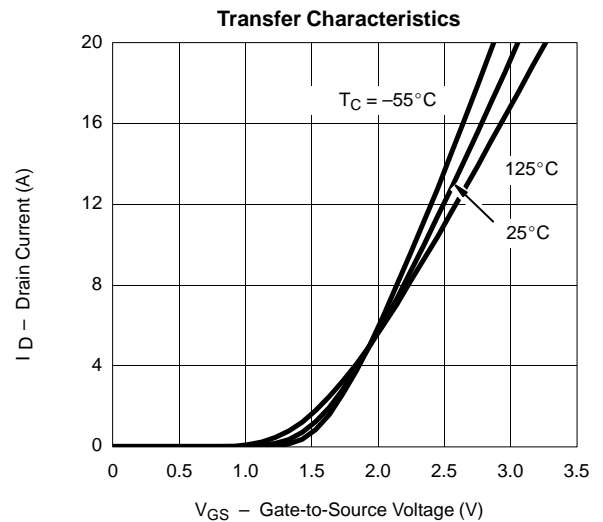
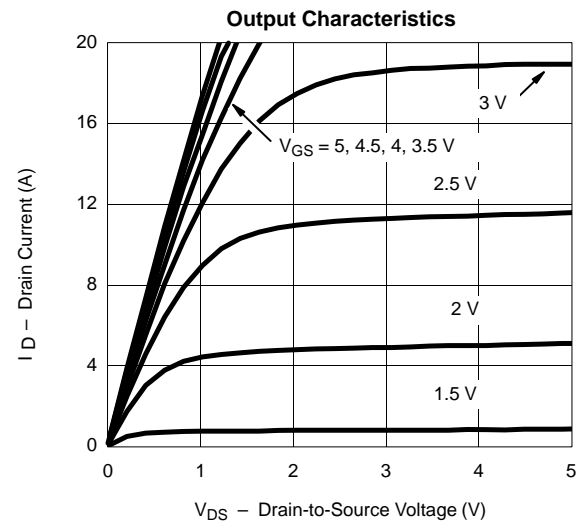




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL



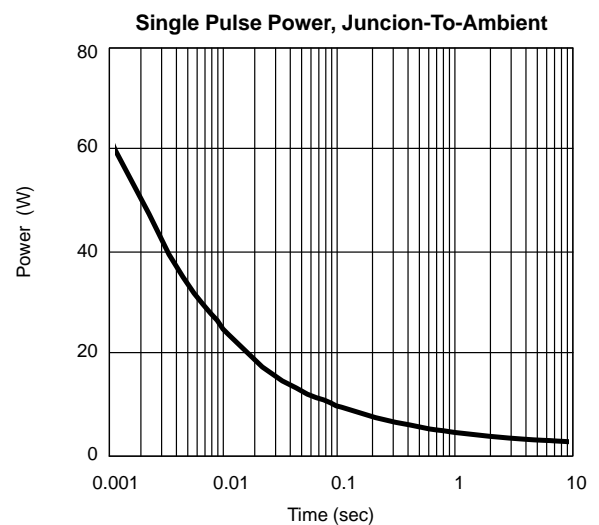
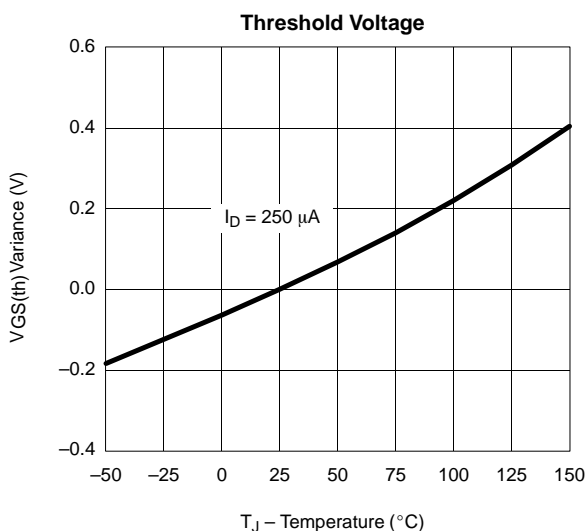
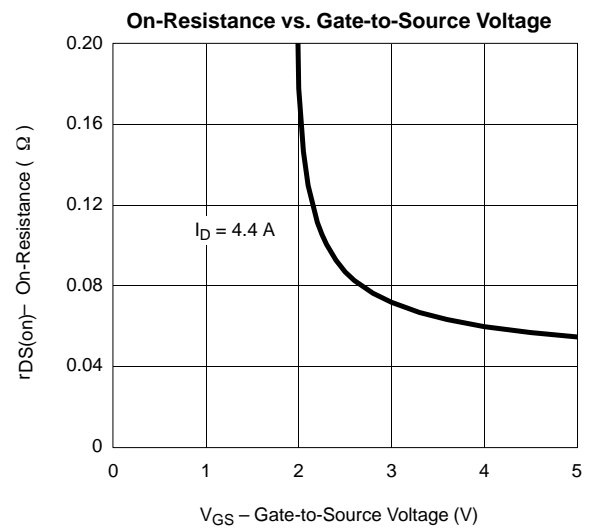
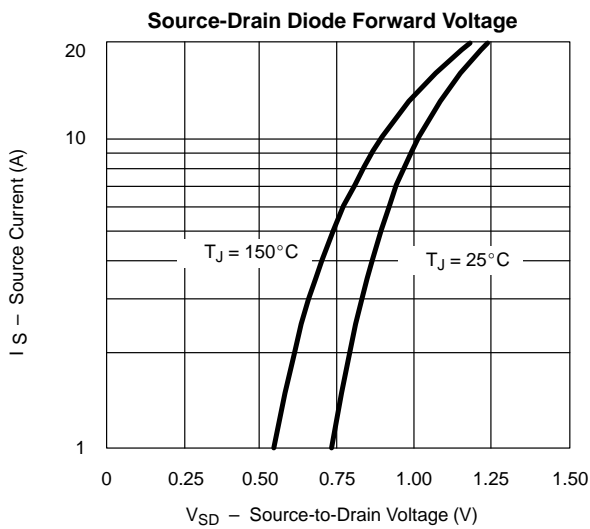
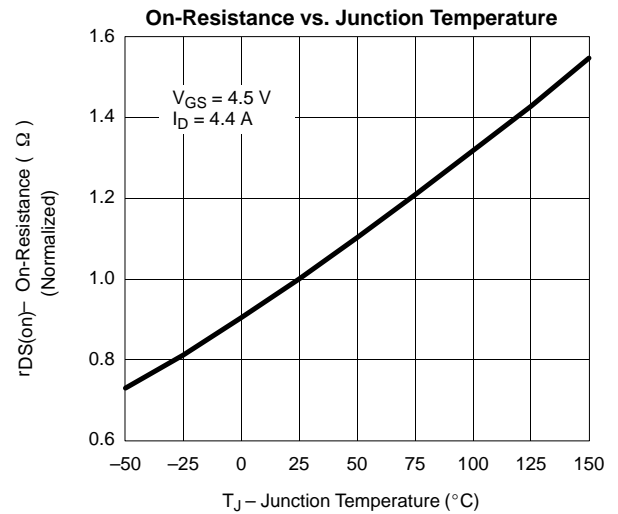
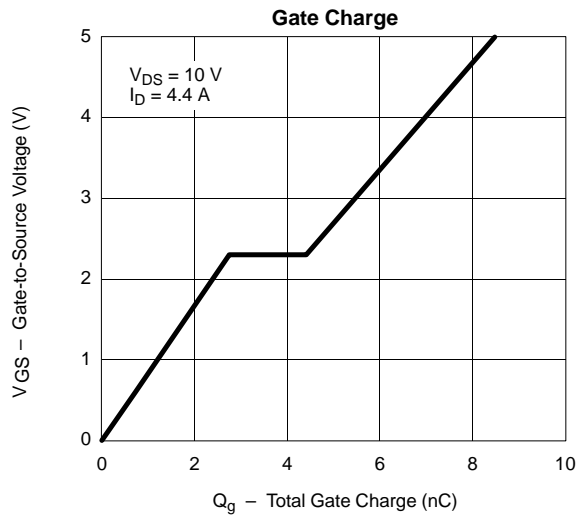
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) P-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL





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

