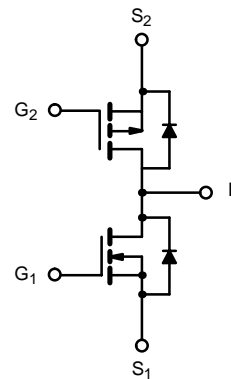
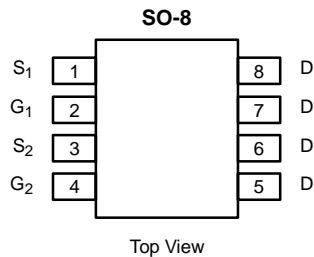




N- and P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	30	0.035 @ $V_{GS} = 10$ V	± 6.5
		0.050 @ $V_{GS} = 4.5$ V	± 5.4
P-Channel	-30	0.045 @ $V_{GS} = -10$ V	± 5.7
		0.090 @ $V_{GS} = -4.5$ V	± 4.0

TrenchFET[®]
Power MOSFETs



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	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	± 6.5	A
		$T_A = 70^\circ\text{C}$	± 5.4	
Pulsed Drain Current	I_{DM}	± 20	± 20	A
Continuous Source Current (Diode Conduction) ^a	I_S	1.7	-1.7	A
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	2.4	W
		$T_A = 70^\circ\text{C}$	1.5	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	N- or P-Channel	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	52	$^\circ\text{C}/\text{W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ 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} = 30 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = -30 V, V _{GS} = 0 V	P-Ch			-1	
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch			5	
		V _{DS} = -30 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	20			A
		V _{DS} ≥ -5 V, V _{GS} = -10 V	P-Ch	-20			
		V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	5			
		V _{DS} ≥ -5 V, V _{GS} = -4.5 V	P-Ch	-5			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.5 A	N-Ch		0.027	0.035	Ω
		V _{GS} = -10 V, I _D = -5.7 A	P-Ch		0.036	0.045	
		V _{GS} = 4.5 V, I _D = 5.4 A	N-Ch		0.038	0.050	
		V _{GS} = -4.5 V, I _D = -4.0 A	P-Ch		0.060	0.090	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 6.5 A	N-Ch		15		S
		V _{DS} = -15 V, I _D = -5.7 A	P-Ch		9		
Diode Forward Voltage ^a	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V	N-Ch		0.75	1.2	V
		I _S = -1.7 A, V _{GS} = 0 V	P-Ch		-0.75	-1.2	
Dynamic^b							
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 10 V, I _D = 6.5 A P-Channel V _{DS} = -15 V, V _{GS} = -10 V, I _D = -5.7 A	N-Ch		18	35	nC
Gate-Source Charge	Q _{gs}		P-Ch		19	40	
			N-Ch		4.2		
Gate-Drain Charge	Q _{gd}		P-Ch		4.5		
		N-Ch		3.5			
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	N-Ch		13	30	ns
			P-Ch		13	30	
Rise Time	t _r		N-Ch		12	30	
			P-Ch		15	30	
Turn-Off Delay Time	t _{d(off)}		N-Ch		31	60	
			P-Ch		37	70	
Fall Time	t _f		N-Ch		10	30	
			P-Ch		14	30	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.7 A, di/dt = 100 A/μs	N-Ch		30	70	
		I _F = -1.7 A, di/dt = 100 A/μs	P-Ch		35	70	

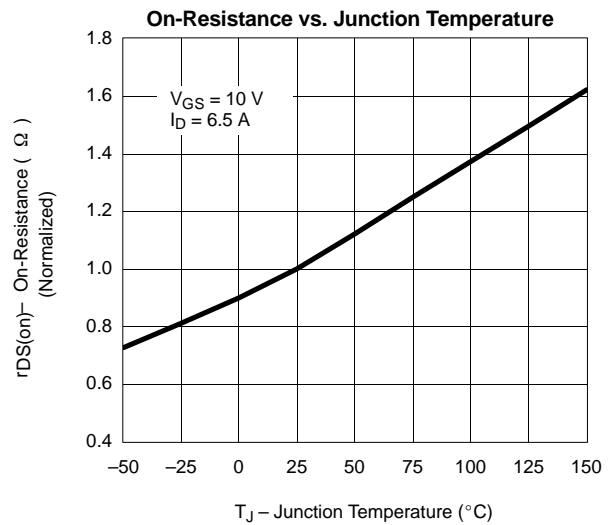
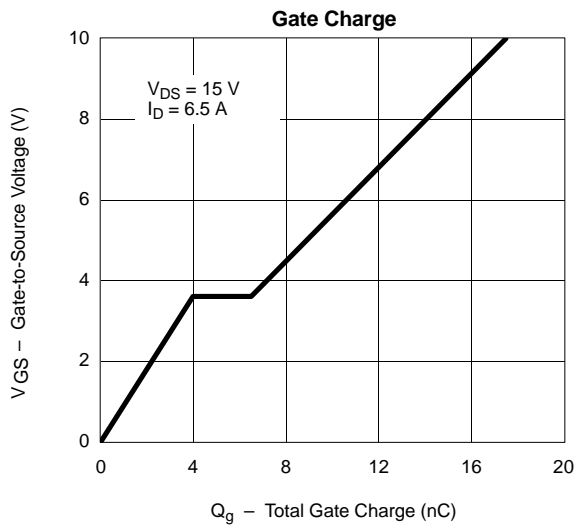
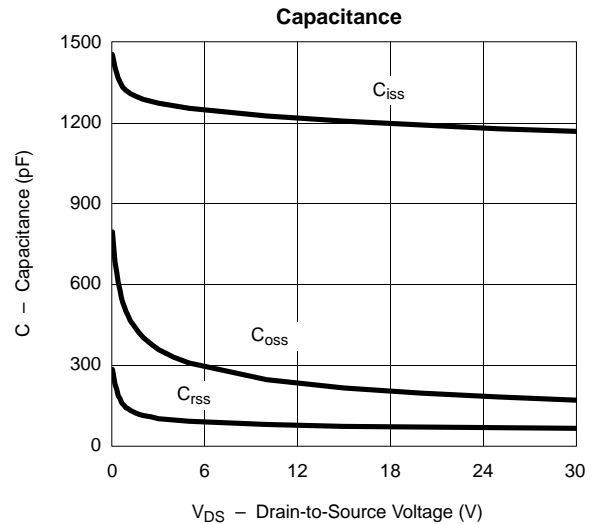
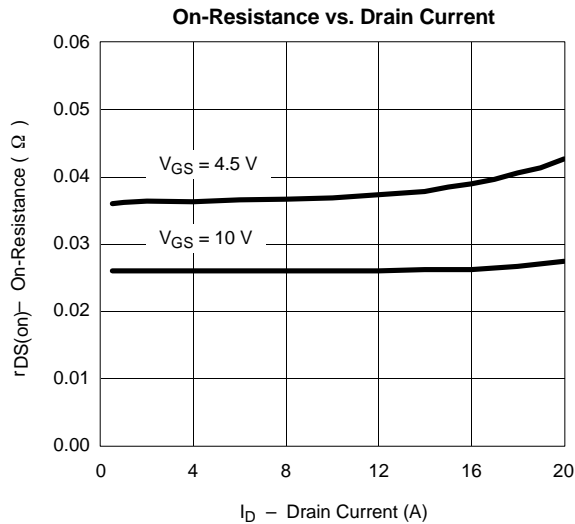
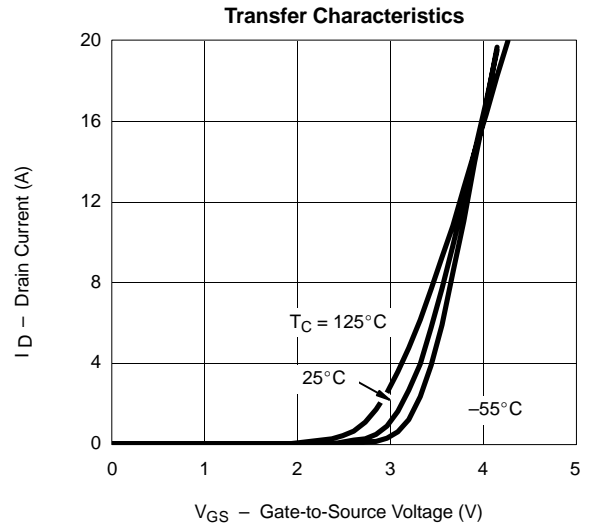
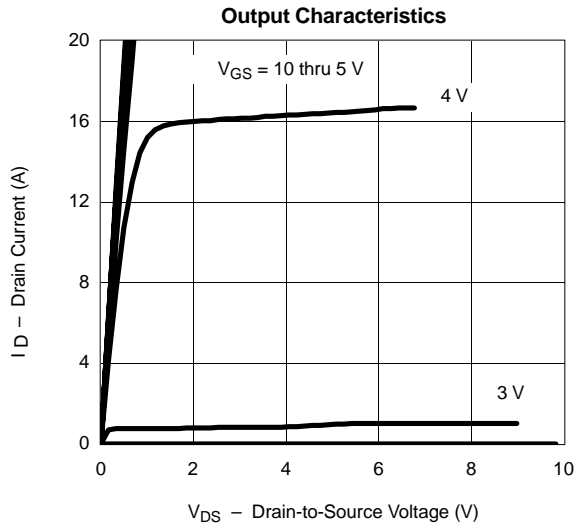
Notes

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



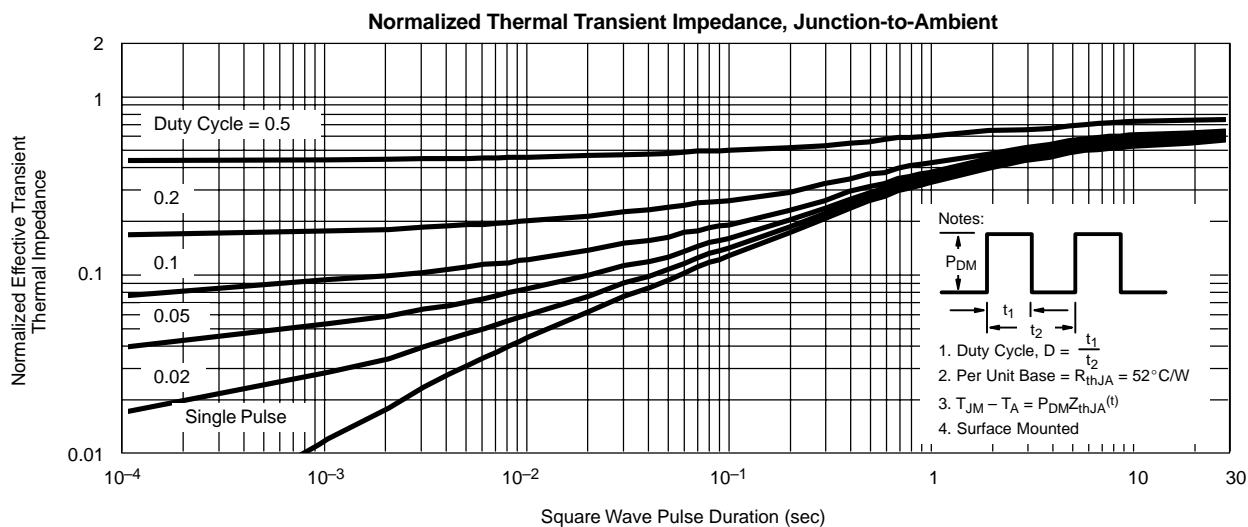
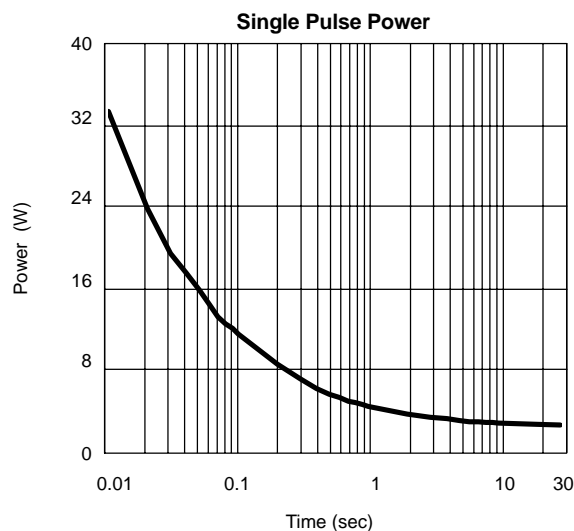
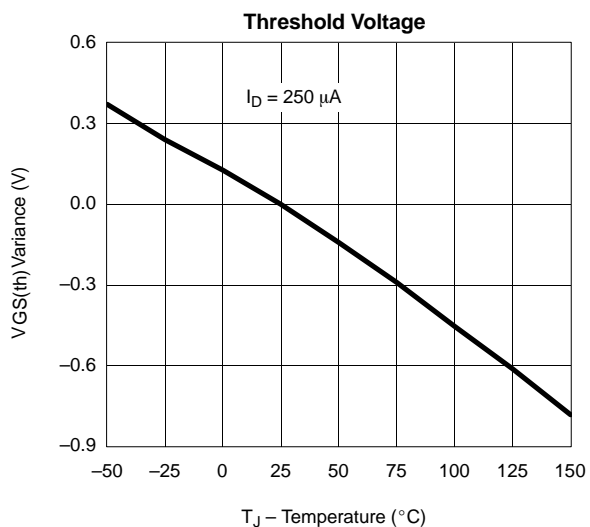
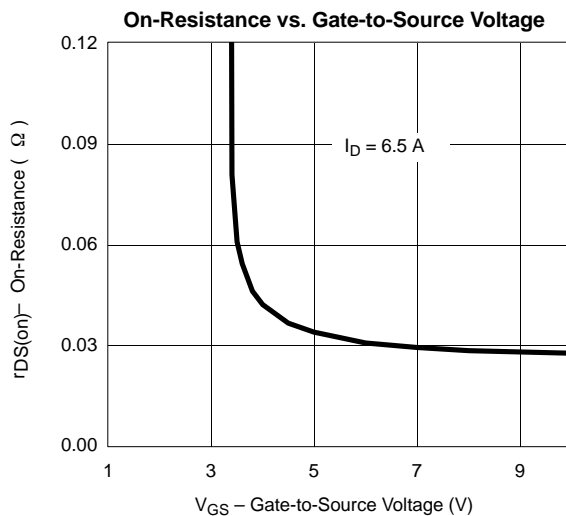
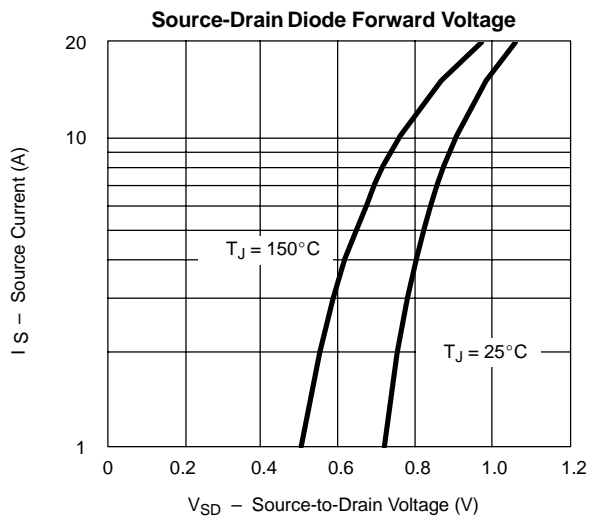
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

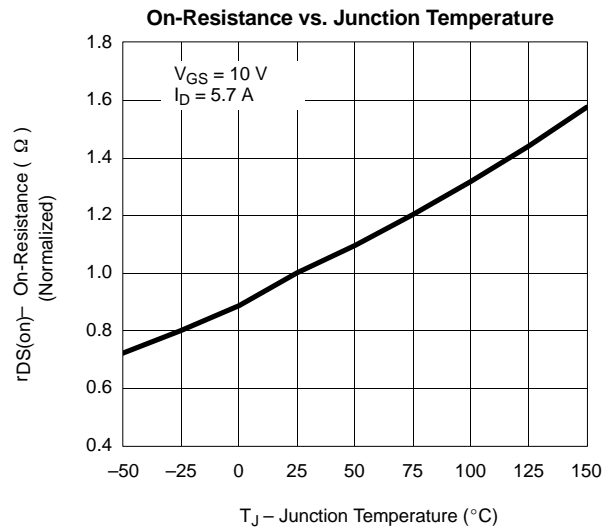
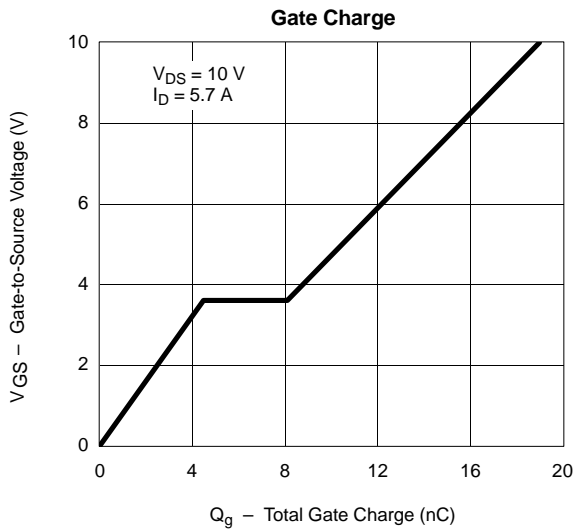
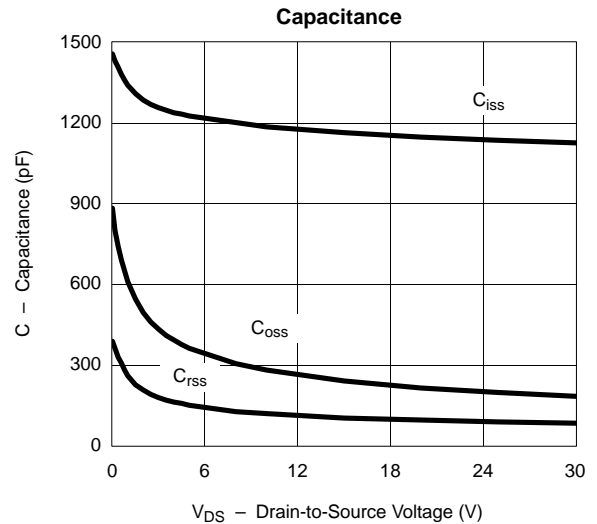
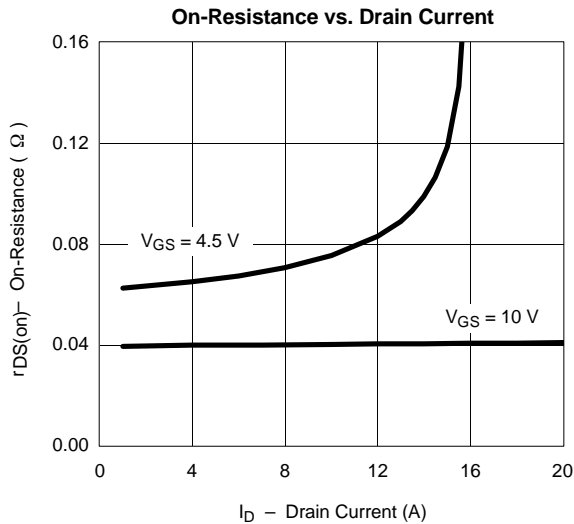
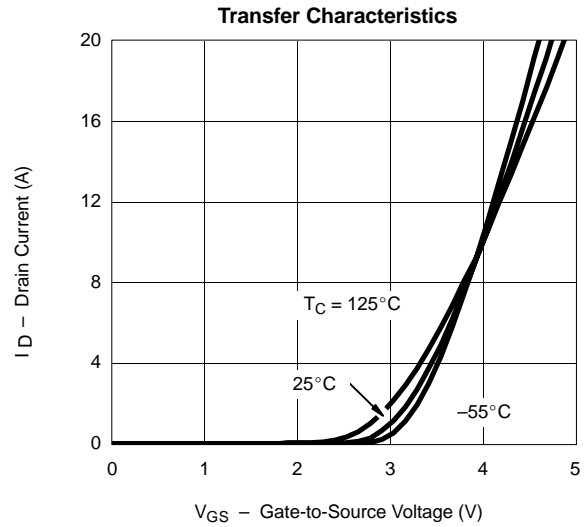
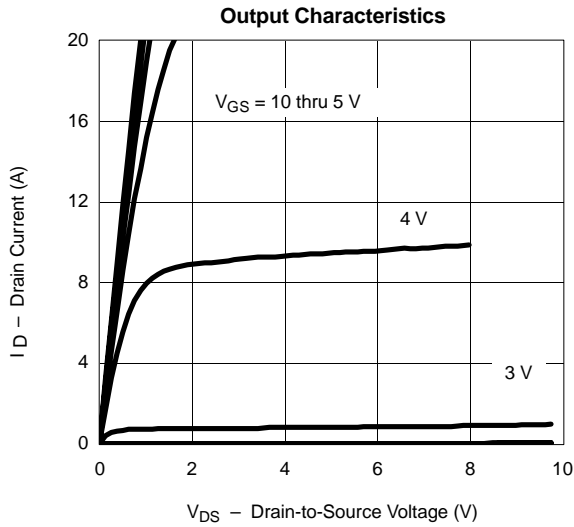
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

P-CHANNEL

