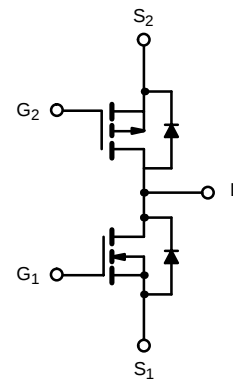
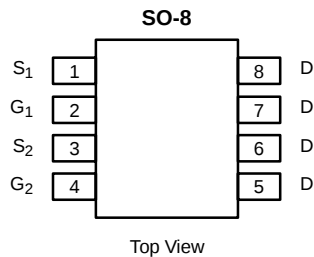




N- and P-Channel 30-V (D-S) MOSFET

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°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	T _A = 25°C	I _D	± 6.5	± 5.7	A
	T _A = 70°C		± 5.4	± 4.0	
Pulsed Drain Current		I _{DM}	± 20	± 20	
Continuous Source Current (Diode Conduction) ^a		I _S	1.7	−1.7	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.4		W
	T _A = 70°C		1.5		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C

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

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)}	P-Ch		3.6			
		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	

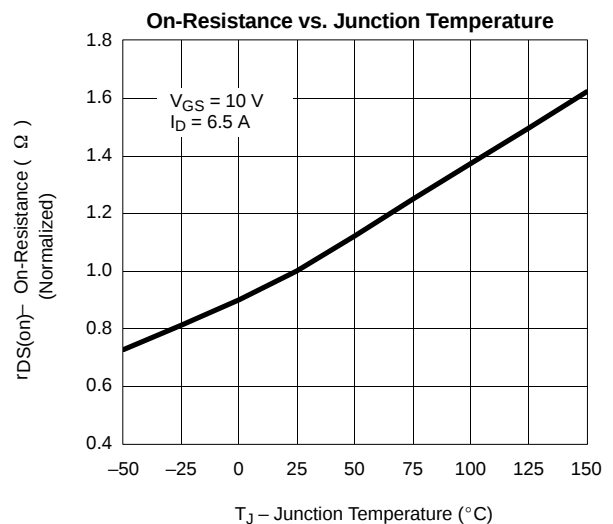
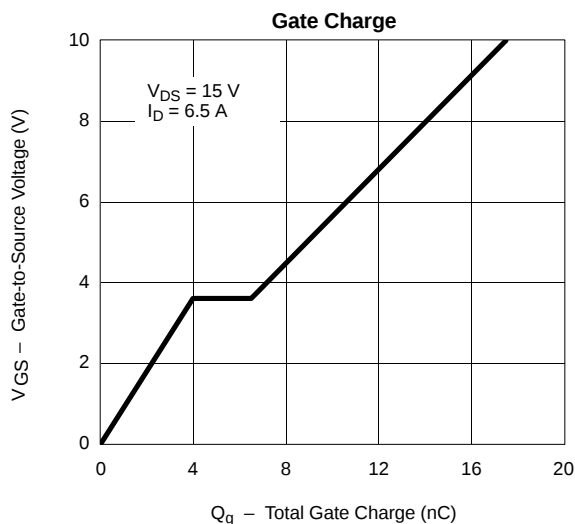
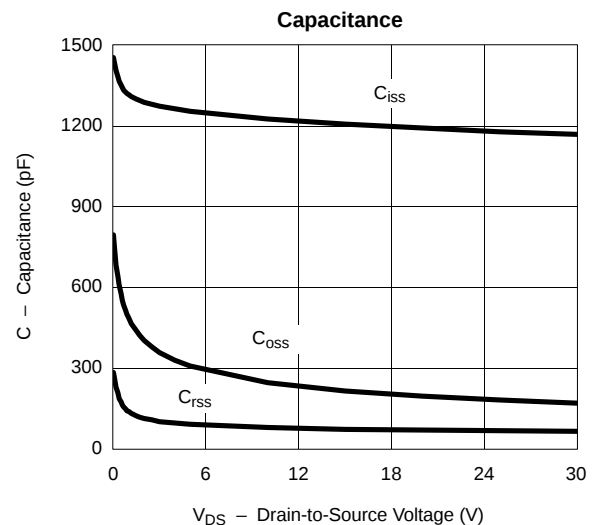
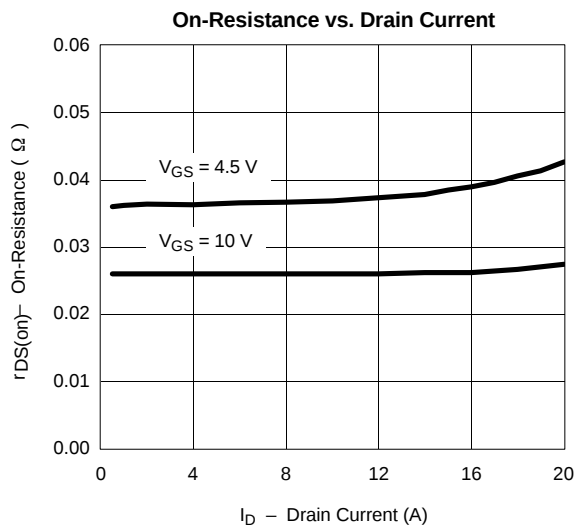
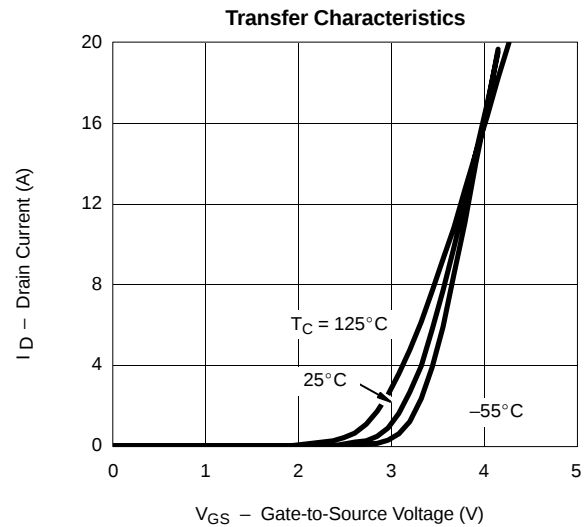
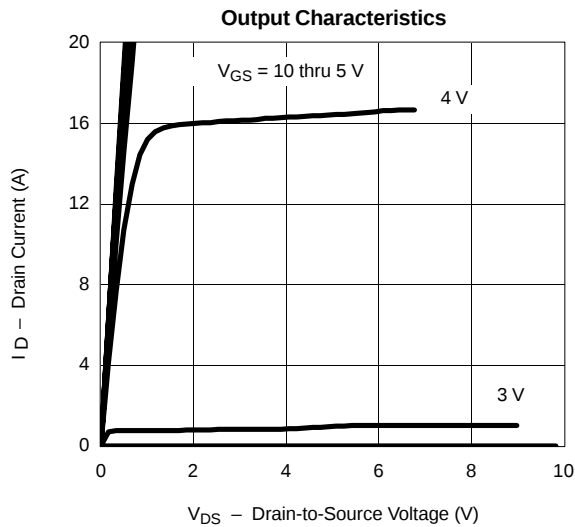
Notes

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



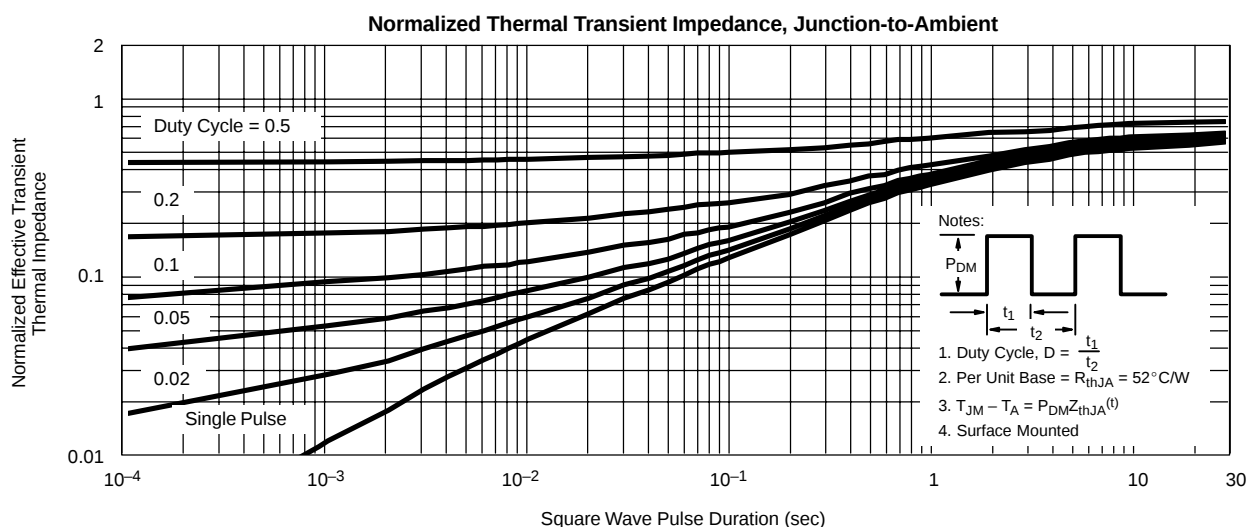
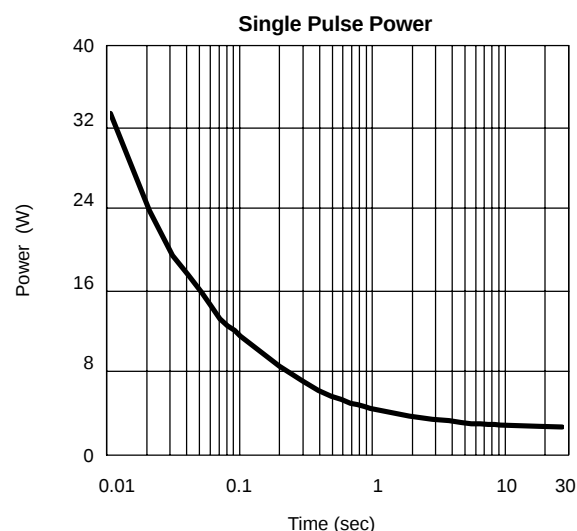
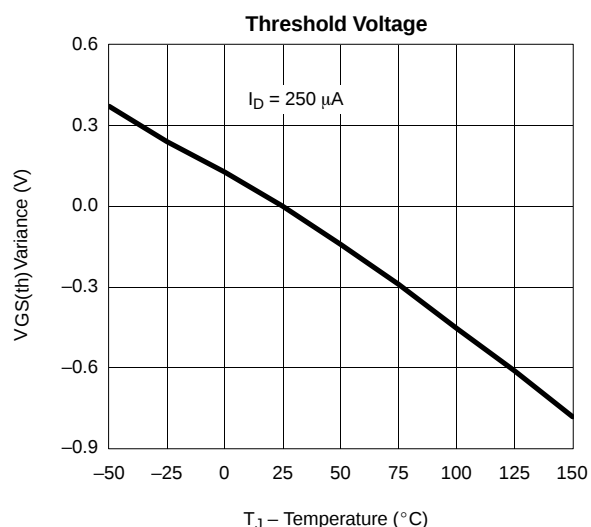
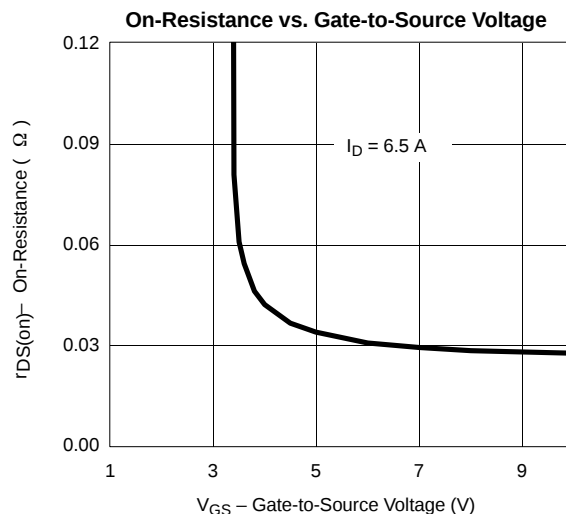
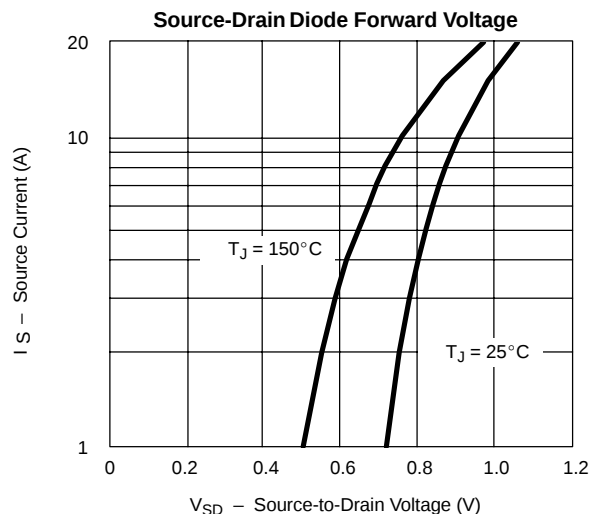
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

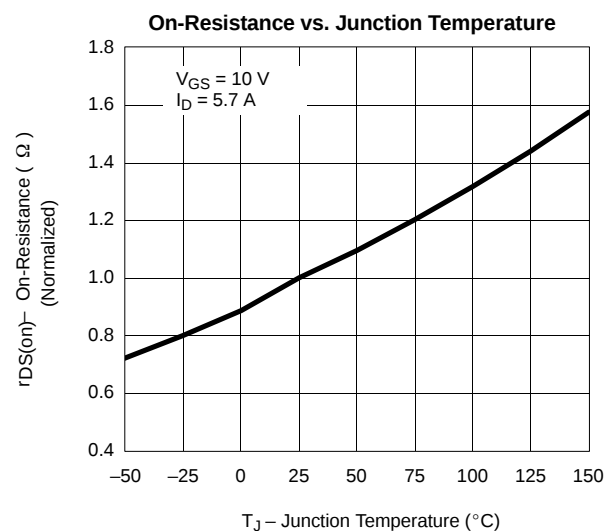
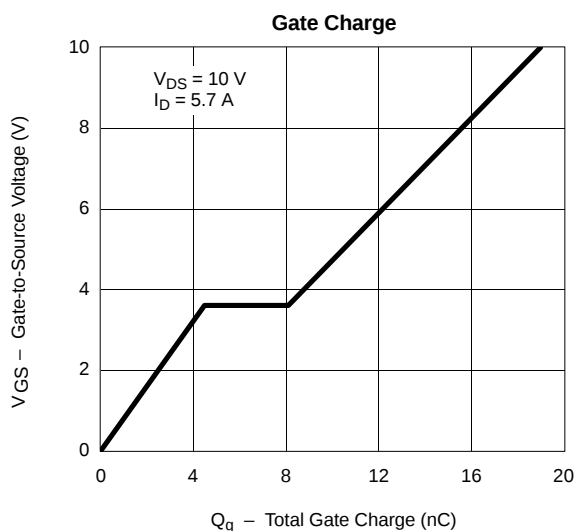
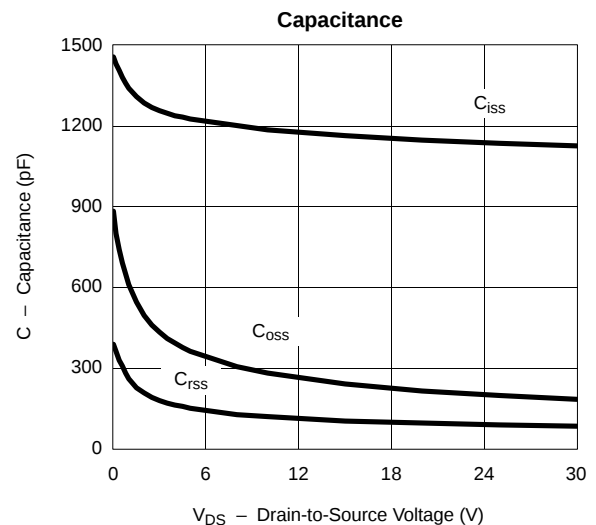
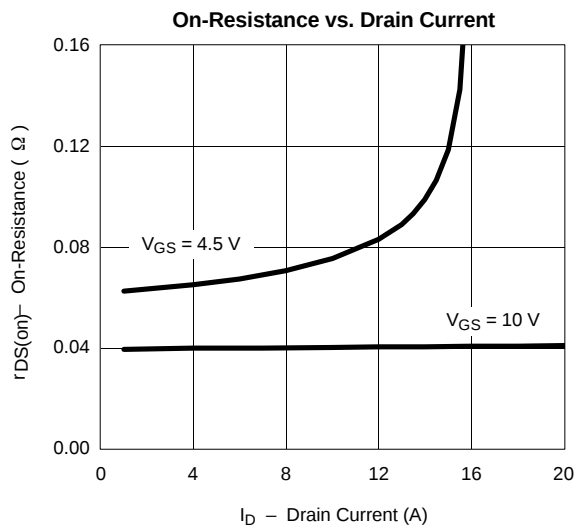
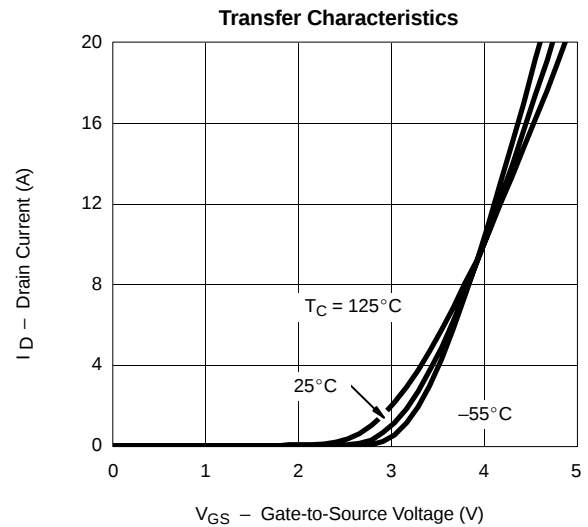
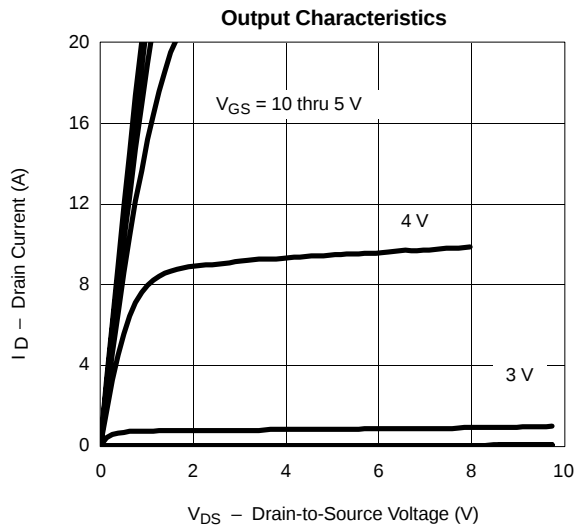
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

P-CHANNEL

