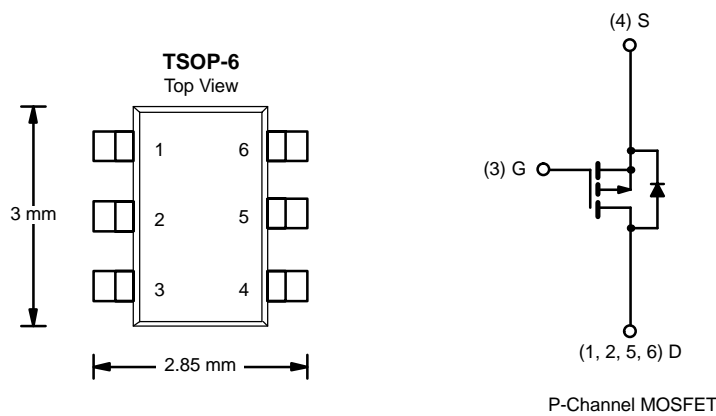




P-Channel 1.8-V (G-S) MOSFET

TrenchFET[®]
Power MOSFETs
1.8-V Rated

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-12	0.050 @ $V_{GS} = -4.5$ V	± 5.2
	0.070 @ $V_{GS} = -2.5$ V	± 4.4
	0.095 @ $V_{GS} = -1.8$ V	± 3.8



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-12	V
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	$T_A = 25^\circ\text{C}$	I_D	± 5.2	A
	$T_A = 70^\circ\text{C}$		± 4.1	
Pulsed Drain Current		I_{DM}	± 20	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	-1.7	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	2.0	W
	$T_A = 70^\circ\text{C}$		1.3	
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	$t \leq 5$ sec	R_{thJA}		62.5	$^\circ\text{C/W}$
	Steady State		106		

Notes

- a. Surface Mounted on FR4 Board.
- b. $t \leq 5$ sec.



SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

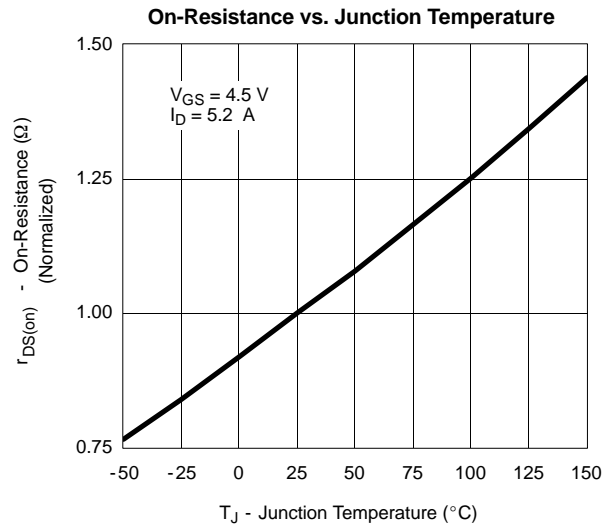
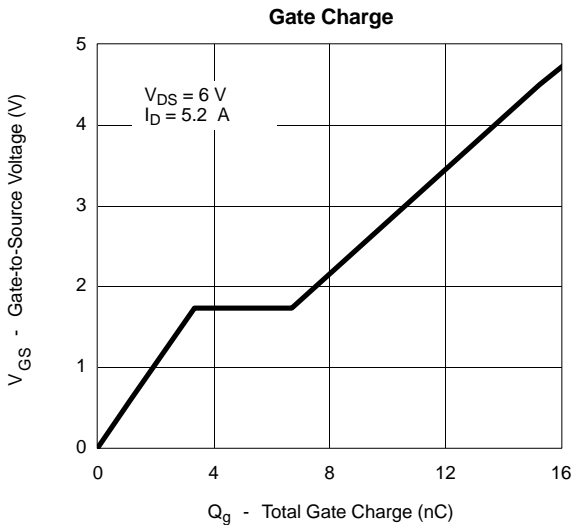
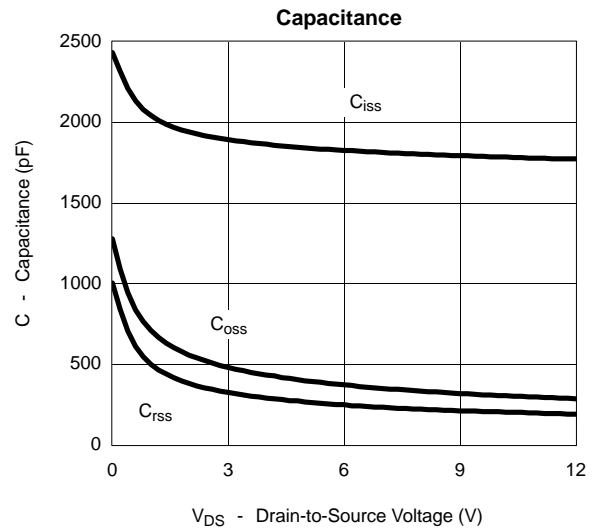
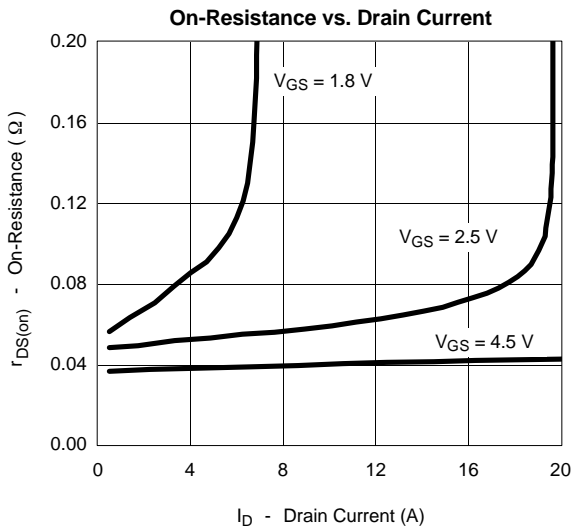
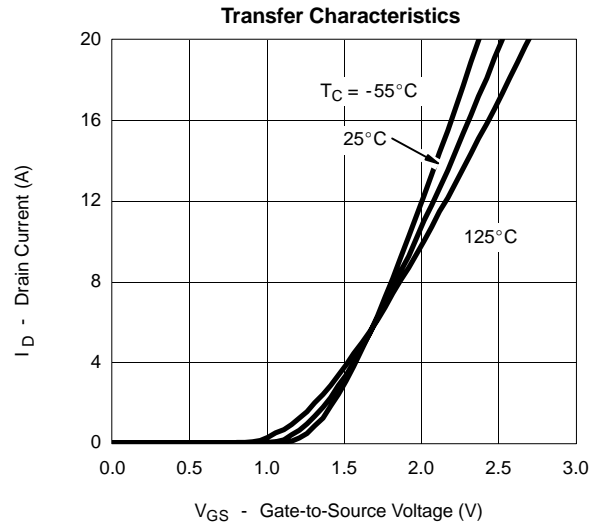
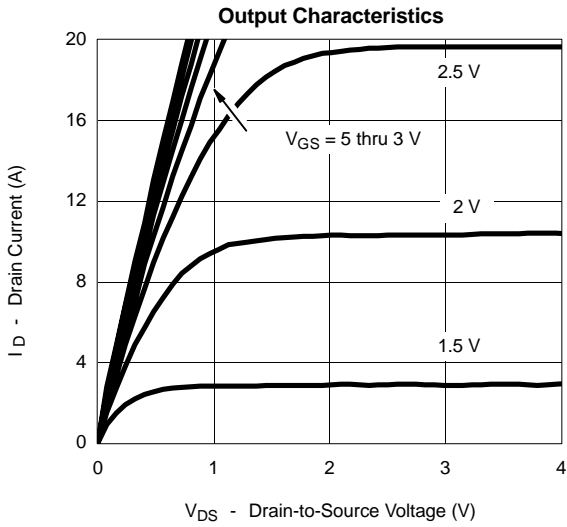
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -9.6 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -9.6 V, V _{GS} = 0 V, T _J = 70 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ -5 V, V _{GS} = -4.5 V	-15			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -5.2 A		0.040	0.050	Ω
		V _{GS} = -2.5 V, I _D = -4.4 A		0.056	0.070	
		V _{GS} = -1.8 V, I _D = -2.0 A		0.072	0.095	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -5.2 A		15		S
Diode Forward Voltage ^a	V _{SD}	I _S = -1.7 A, V _{GS} = 0 V		0.7	-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -6 V, V _{GS} = -4.5 V, I _D = -5.2 A		16	25	nC
Gate-Source Charge	Q _{gs}			3.5		
Gate-Drain Charge	Q _{gd}			2.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -6 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		20	40	ns
Rise Time	t _r			45	90	
Turn-Off Delay Time	t _{d(off)}			100	200	
Fall Time	t _f			75	150	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -1.7 A, di/dt = 100 A/μs		60	

Notes

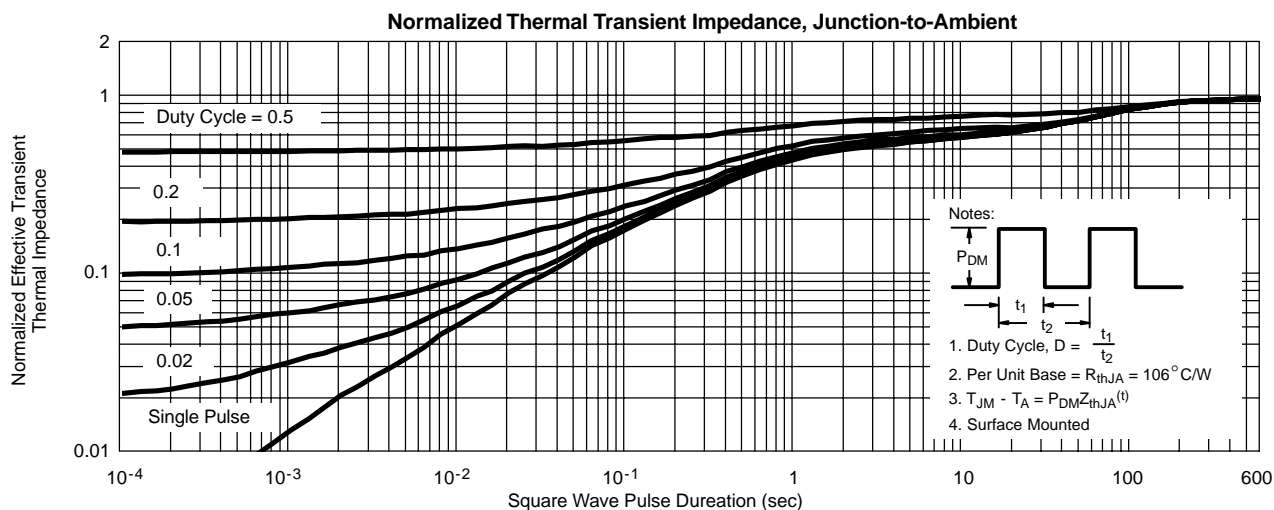
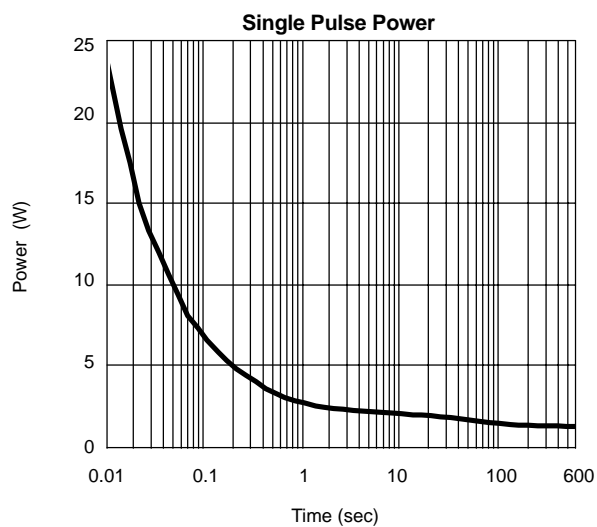
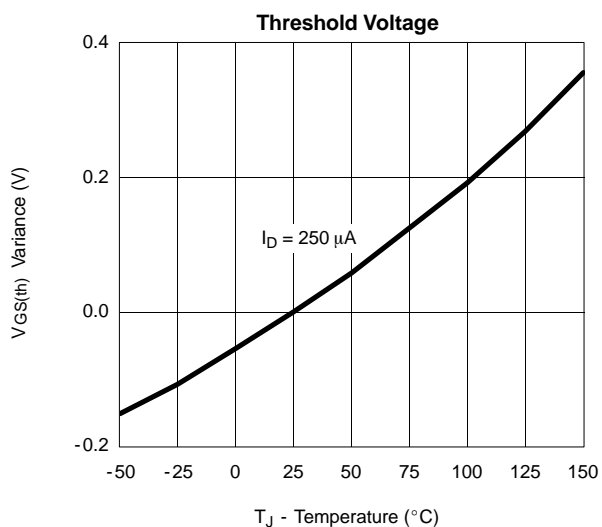
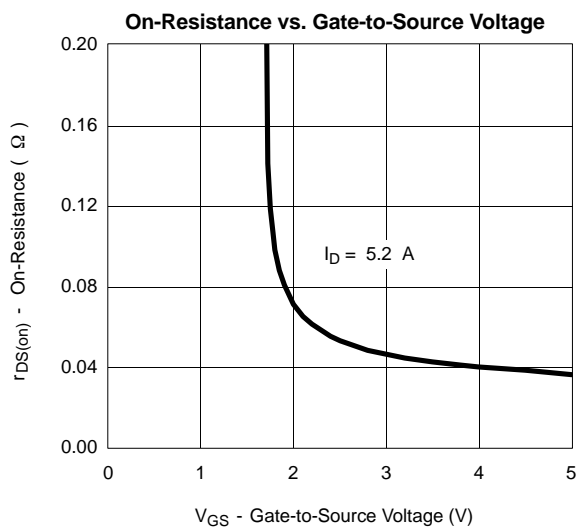
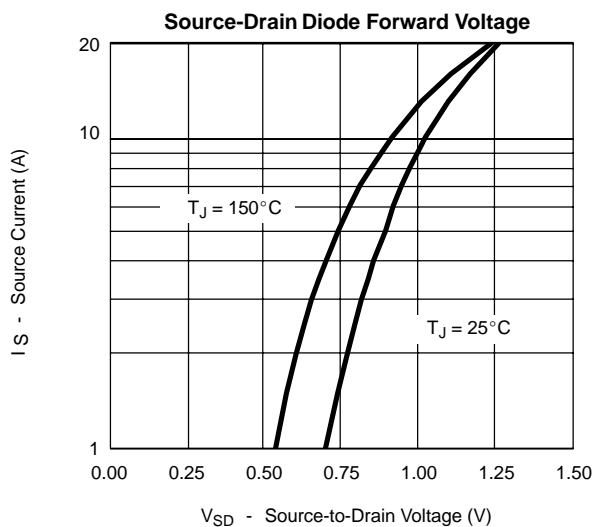
- a. Guaranteed by design, not subject to production testing.
- b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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