



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

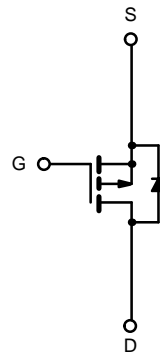
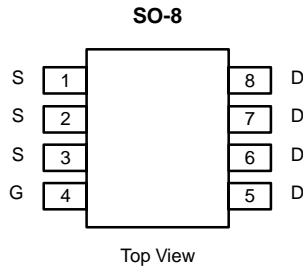
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-20	0.017 @ $V_{GS} = -4.5$ V	-9
	0.023 @ $V_{GS} = -2.5$ V	-7
	0.032 @ $V_{GS} = -1.8$ V	-6

FEATURES

- TrenchFET® Power MOSFETS

APPLICATIONS

- Load Switch
 - Game Stations
 - Notebooks
 - Desktops



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	V_{DS}	-20		V	
Gate-Source Voltage	V_{GS}	± 8			
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	-9	-6.5	A
		$T_A = 70^\circ\text{C}$	-7	-5.0	
Pulsed Drain Current	I_{DM}	-30			
continuous Source Current (Diode Conduction) ^a	I_S	-2.1	-1.3		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	2.5	1.35	W
		$T_A = 70^\circ\text{C}$	1.6	0.87	
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}	$t \leq 10$ sec	38	50	$^\circ\text{C/W}$
		Steady State	71	92	
Maximum Junction-to-Foot (Drain)	R_{thJF}	19	25		

Notes

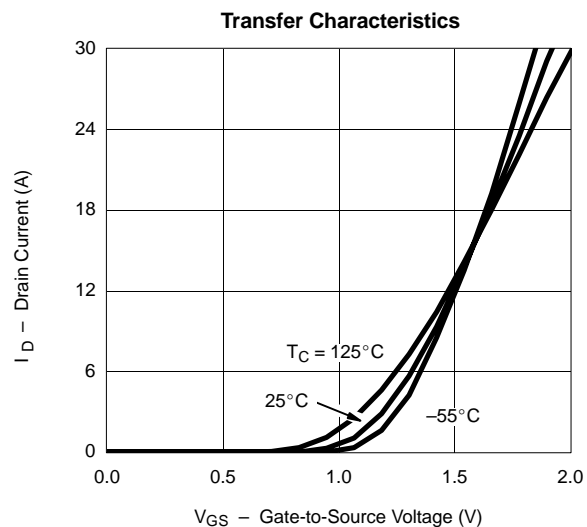
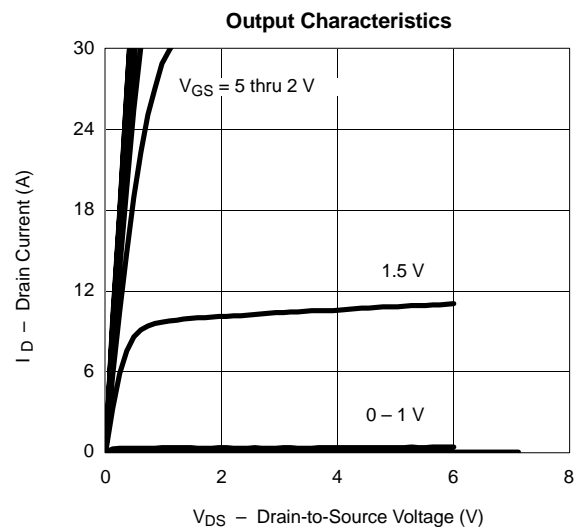
a Surface Mounted on 1" x 1" FR4 Board.

SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16\ \text{V}, V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -16\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			-10	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	20			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -7.4\ \text{A}$		0.014	0.017	Ω
		$V_{GS} = -2.5\ \text{V}, I_D = -6.3\ \text{A}$		0.018	0.023	
		$V_{GS} = -1.8\ \text{V}, I_D = -5.5\ \text{A}$		0.024	0.032	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15\ \text{V}, I_D = -7.4\ \text{A}$		28		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.3\ \text{A}, V_{GS} = 0\ \text{V}$		-0.64	-1.1	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10\ \text{V}, V_{GS} = -5\ \text{V}, I_D = -7.4\ \text{A}$		30.5	50	nC
Gate-Source Charge	Q_{gs}		5.3			
Gate-Drain Charge	Q_{gd}		3.8			
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}, R_L = 15\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		30	50	ns
Rise Time	t_r		30	50		
Turn-Off Delay Time	$t_{d(off)}$		110	200		
Fall Time	t_f		65	110		
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.3\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		45	80	

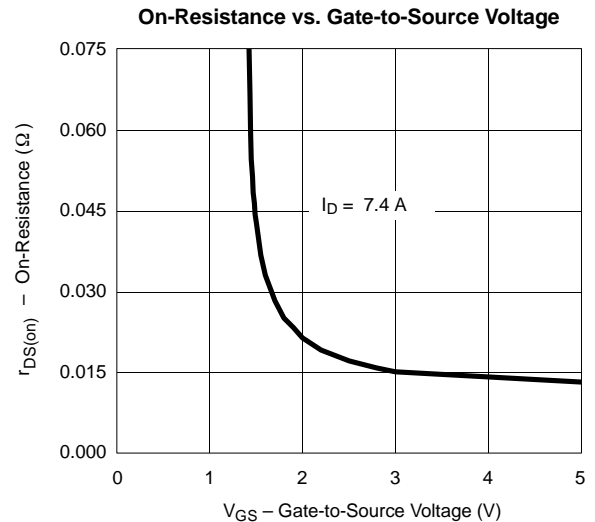
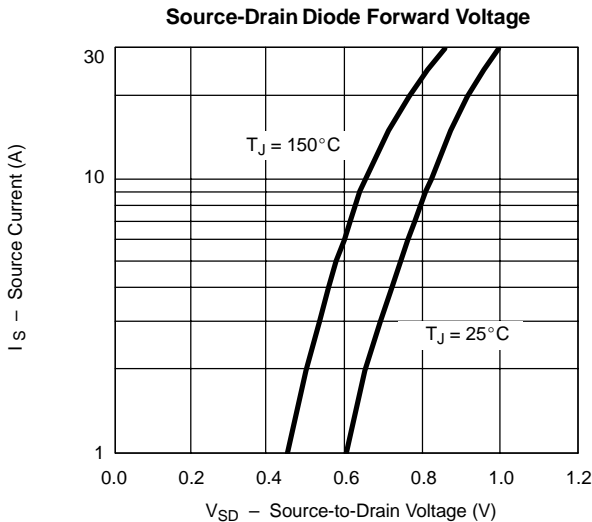
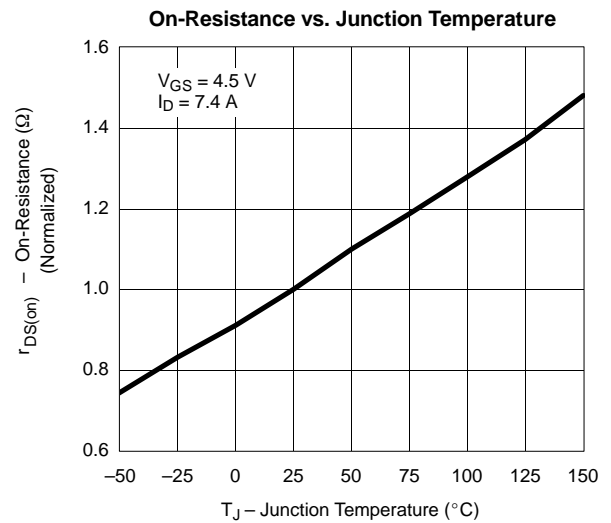
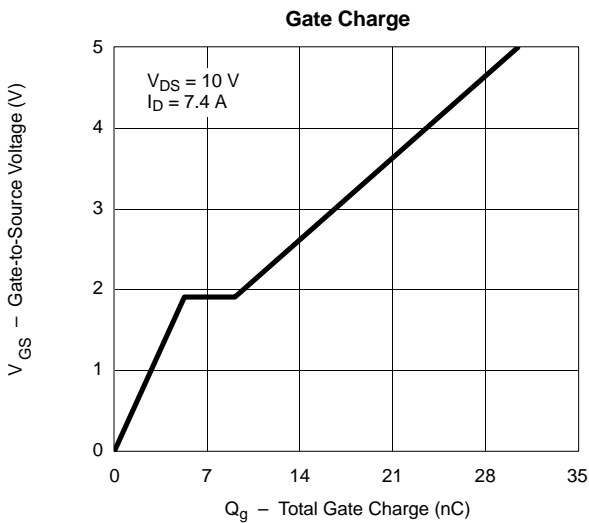
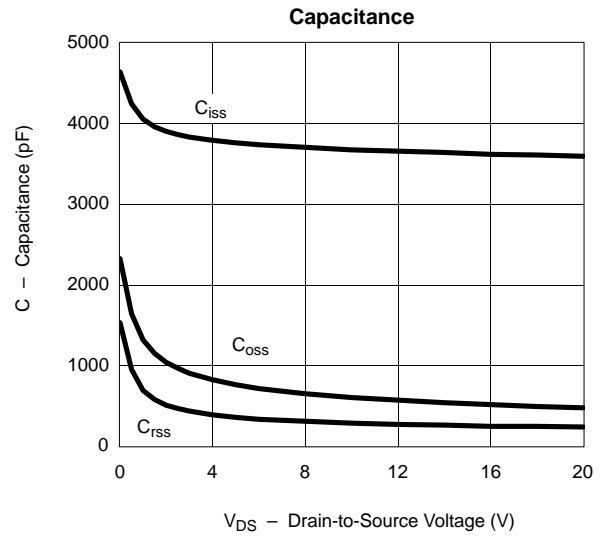
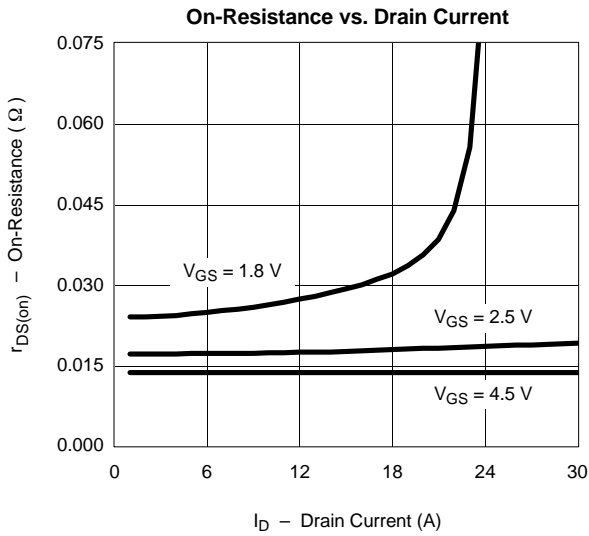
Notes

- a Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
b Guaranteed by design, not subject to production testing.

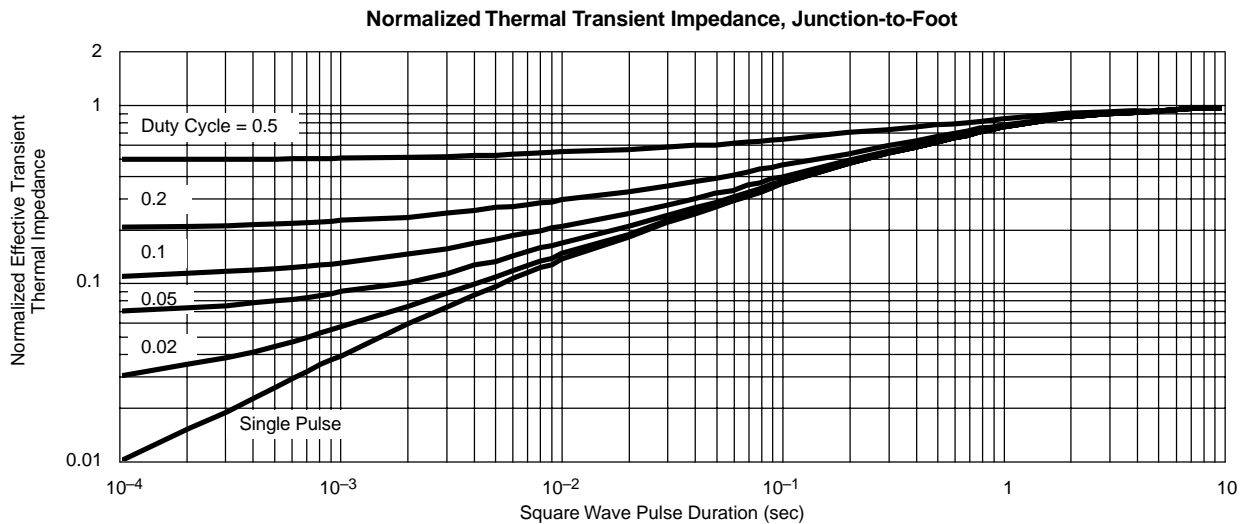
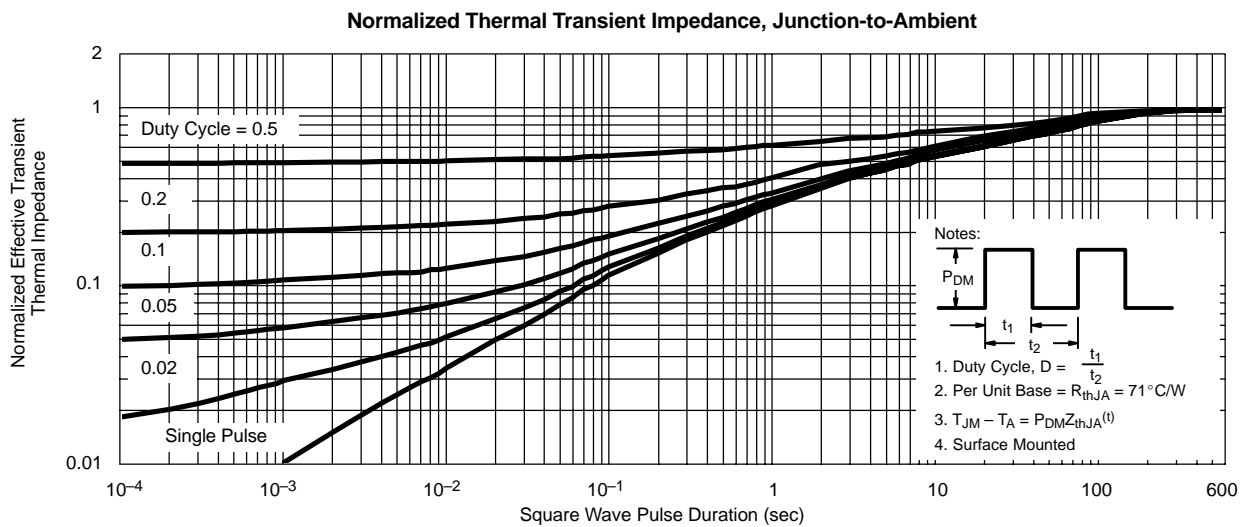
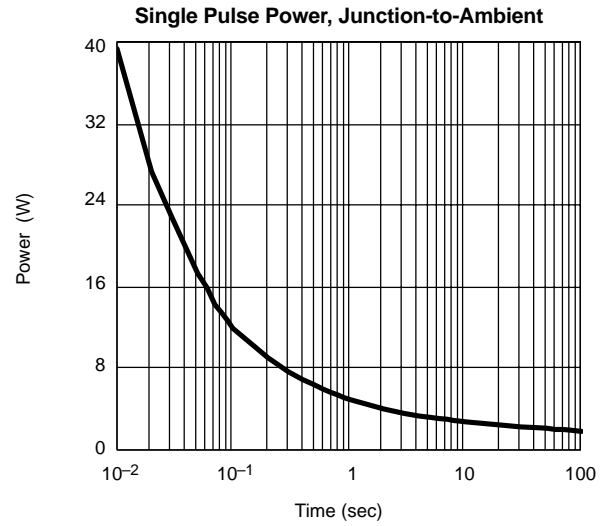
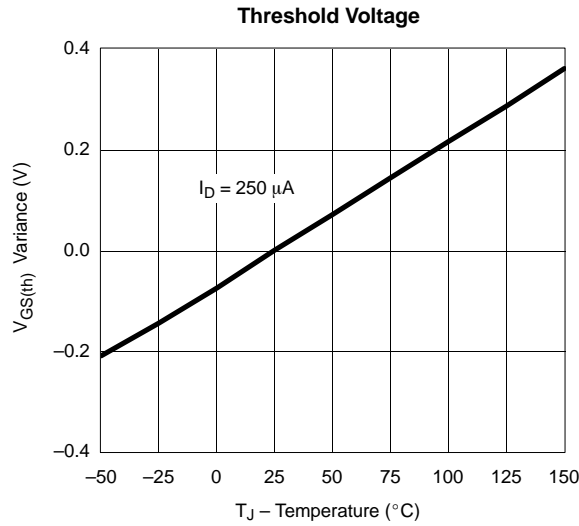
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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