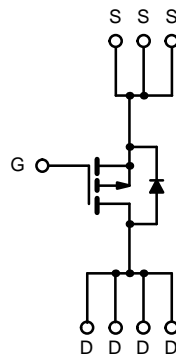
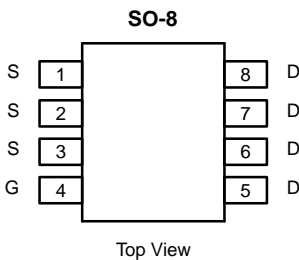




P-Channel 1.8-V (G-S) MOSFET

TrenchFET[®]
Power MOSFETs
1.8-V Rated

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-12	0.011 @ $V_{GS} = -4.5$ V	± 12
	0.014 @ $V_{GS} = -2.5$ V	± 11
	0.020 @ $V_{GS} = -1.8$ V	± 9



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}	$T_A = 25^\circ\text{C}$	± 12	A
	$T_A = 70^\circ\text{C}$	± 9.8	
Pulsed Drain Current	I_{DM}	± 40	A
Continuous Source Current (Diode Conduction) ^{a, b}	I_S	-2.1	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	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	Typical	Maximum	Unit	
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec		50	$^\circ\text{C/W}$	
	Steady State	80			

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	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} ≥ -10 V, V _{GS} = -4.5 V	-20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -12 A		0.0085	0.011	Ω
		V _{GS} = -2.5 V, I _D = -11 A		0.011	0.014	
		V _{GS} = -1.8 V, I _D = -9 A		0.015	0.020	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -12 A		55		S
Diode Forward Voltage ^a	V _{SD}	I _S = -2.1 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 = -12 A		85	120	nC
Gate-Source Charge	Q _{gs}			17		
Gate-Drain Charge	Q _{gd}			15		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -6 V, R _L = 6 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		40	80	ns
Rise Time	t _r			60	120	
Turn-Off Delay Time	t _{d(off)}			470	900	
Fall Time	t _f			230	450	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -2.1 A, di/dt = 100 A/μs		80	

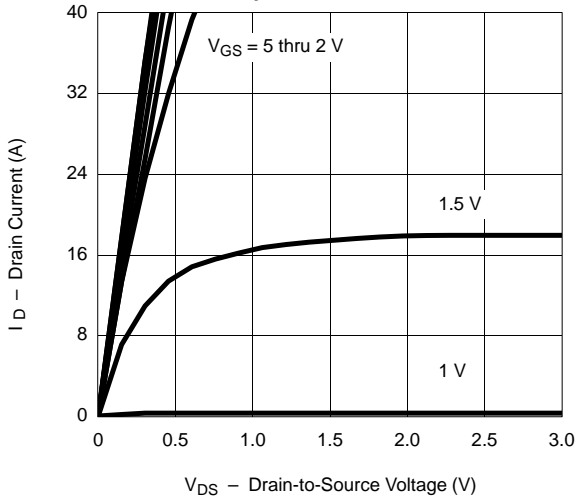
Notes

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

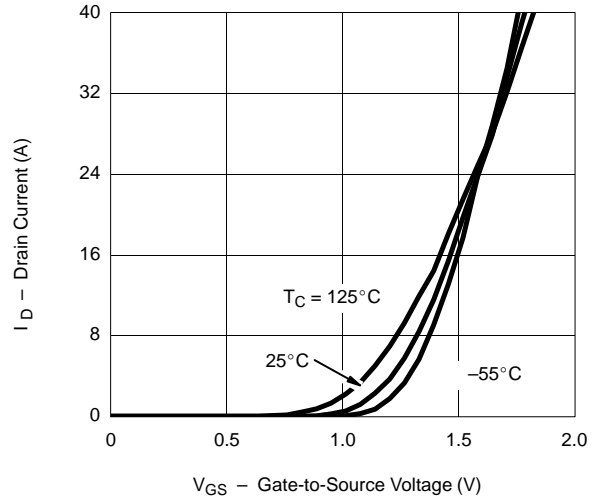


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

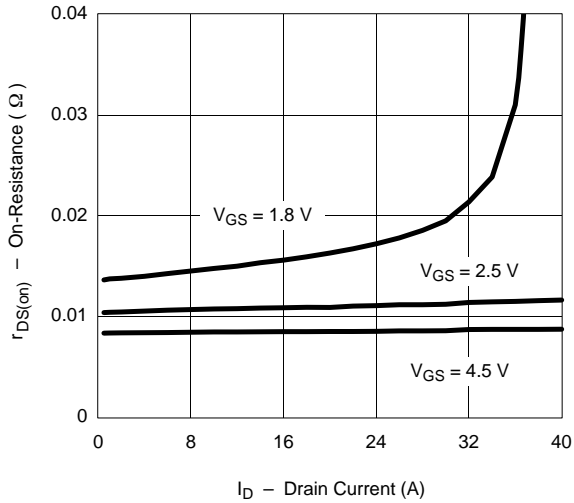
Output Characteristics



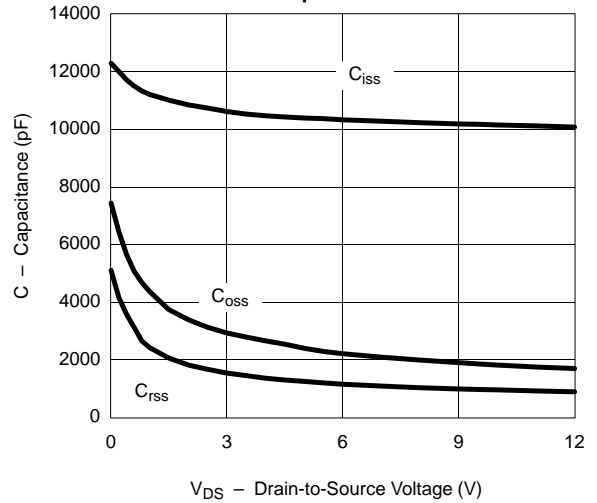
Transfer Characteristics



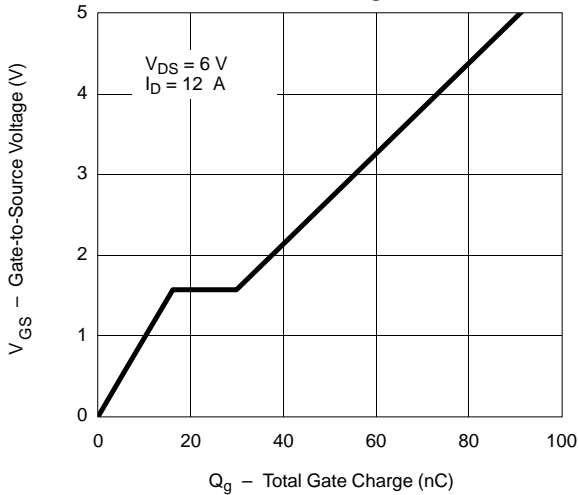
On-Resistance vs. Drain Current



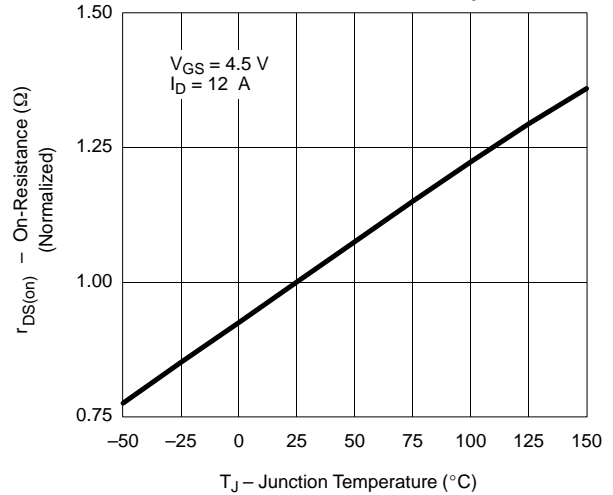
Capacitance



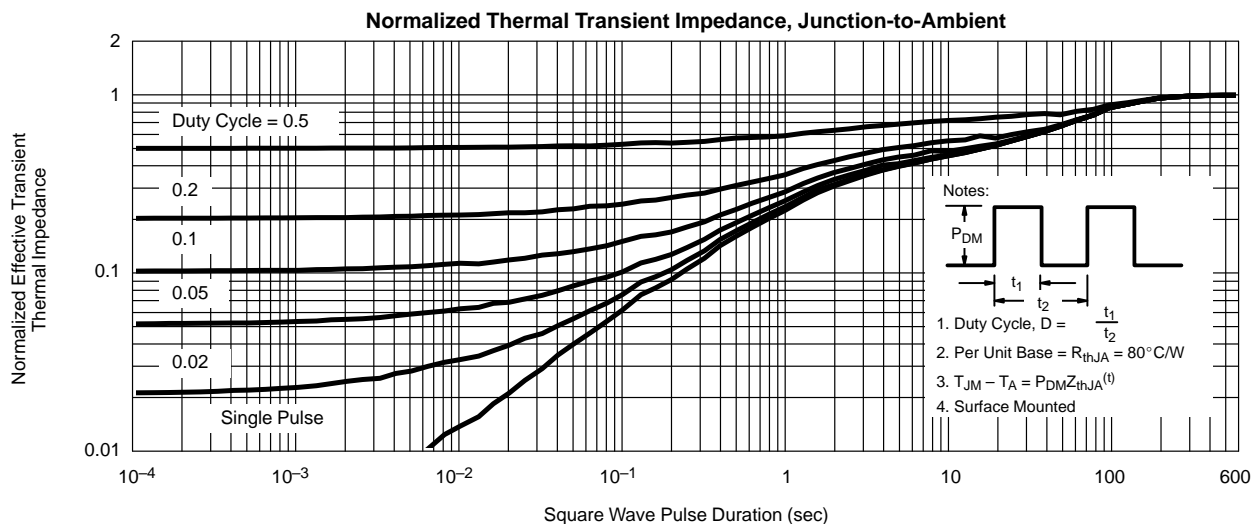
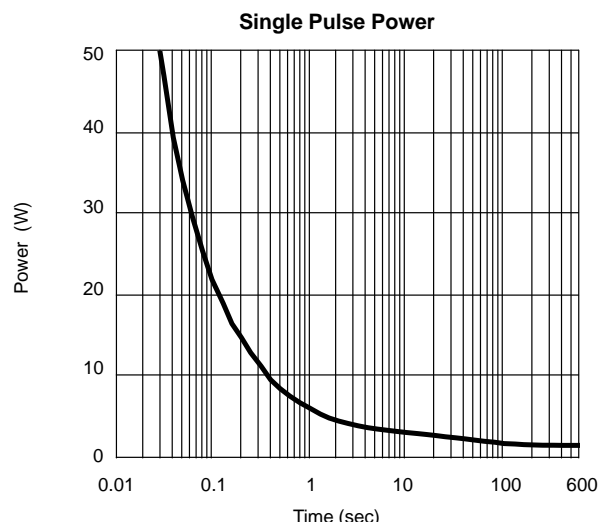
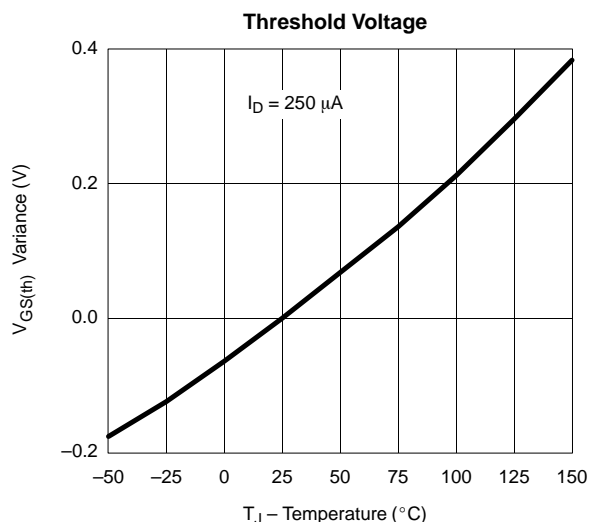
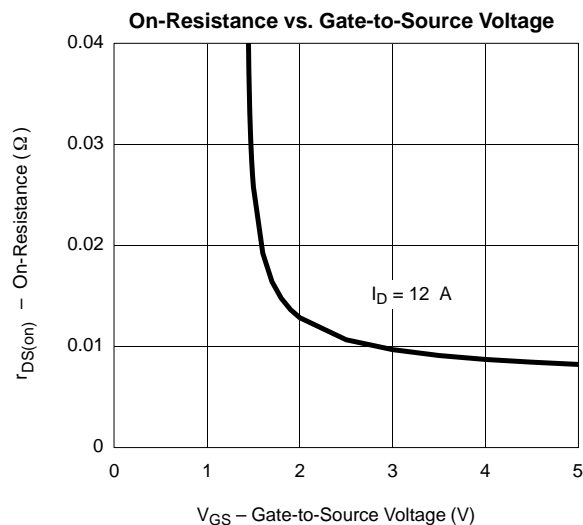
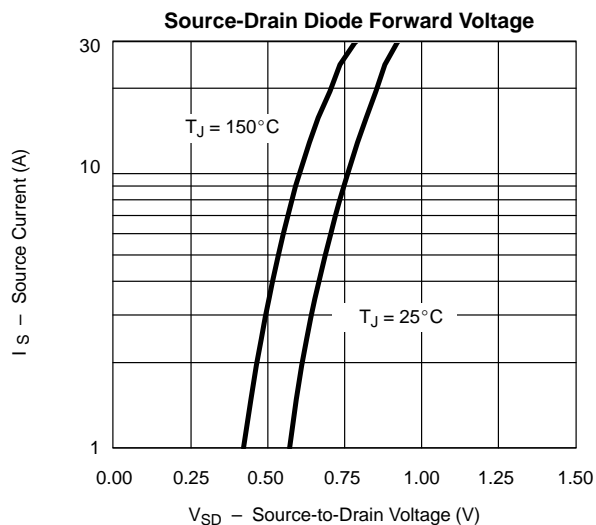
Gate Charge



On-Resistance vs. Junction Temperature



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





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