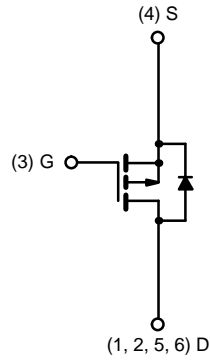
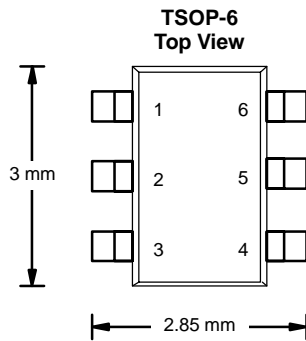




P-Channel 12-V (D-S) MOSFET

TrenchFET[®]
Power MOSFETs
1.8-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
-12	0.036 @ V _{GS} = -4.5 V	-6.3
	0.050 @ V _{GS} = -2.5 V	-5.3
	0.073 @ V _{GS} = -1.8 V	-4.4



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	V _{DS}	-12		V	
Gate-Source Voltage	V _{GS}	±8			
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	-6.3	-4.8	A
		T _A = 85°C	-4.6	-3.4	
Pulsed Drain Current	I _{DM}	-20			
Continuous Diode Current (Diode Conduction) ^a	I _S	-1.7	-0.9		
Maximum Power Dissipation ^a	P _D	T _A = 25°C	2.0	1.1	W
		T _A = 85°C	1.0	0.6	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	t ≤ 5 sec	R _{thJA}	45	62.5	°C/W
	Steady State		90	110	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	25	30	

Notes

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

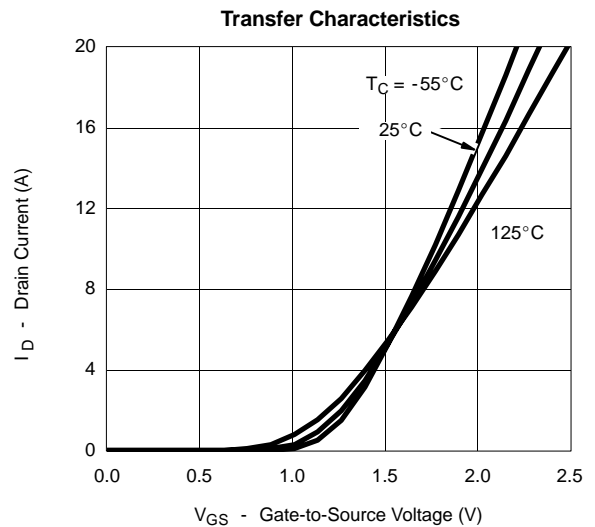
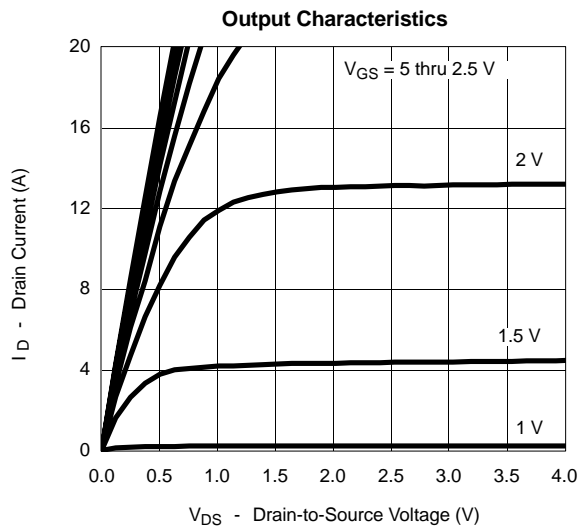


SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -9.6 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -9.6 V, V _{GS} = 0 V, T _J = 85 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -6.3 A		0.030	0.036	Ω
		V _{GS} = -2.5 V, I _D = -5.3 A		0.042	0.050	
		V _{GS} = -1.8 V, I _D = -2 A		0.060	0.073	
Forward Transconductance ^a	g _{fs}	V _{DS} = -5 V, I _D = -6.3 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 = -6.3 A		15	23	nC
Gate-Source Charge	Q _{gs}			3		
Gate-Drain Charge	Q _{gd}			3.3		
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		18	36	ns
Rise Time	t _r			45	90	
Turn-Off Delay Time	t _{d(off)}			90	180	
Fall Time	t _f			80	160	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -1.7 A, di/dt = 100 A/μs		30	

Notes

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

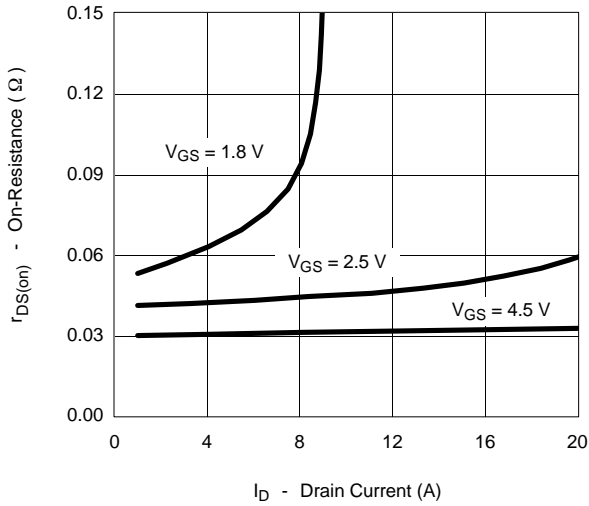
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



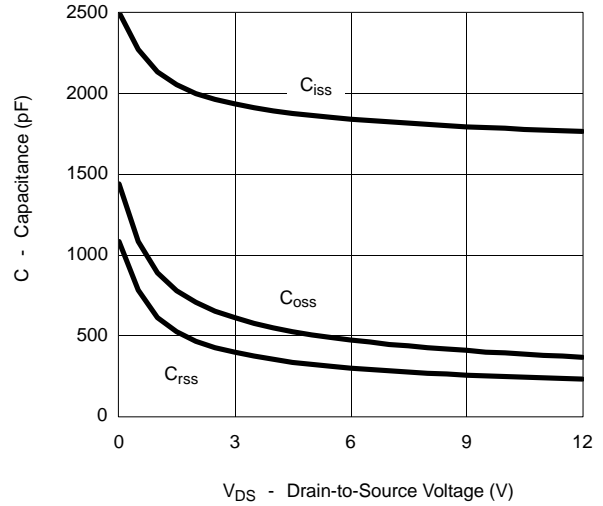


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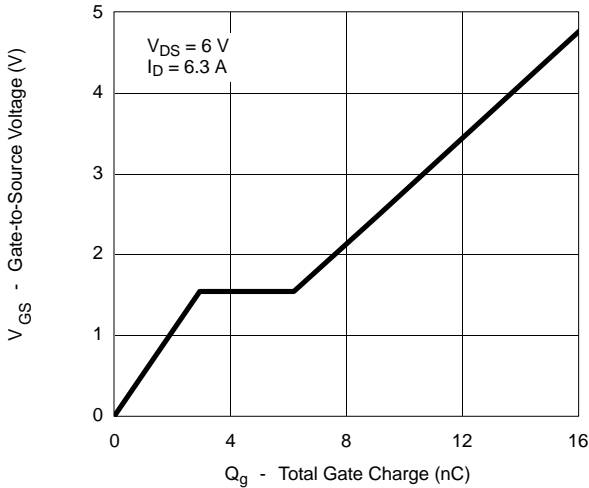
On-Resistance vs. Drain Current



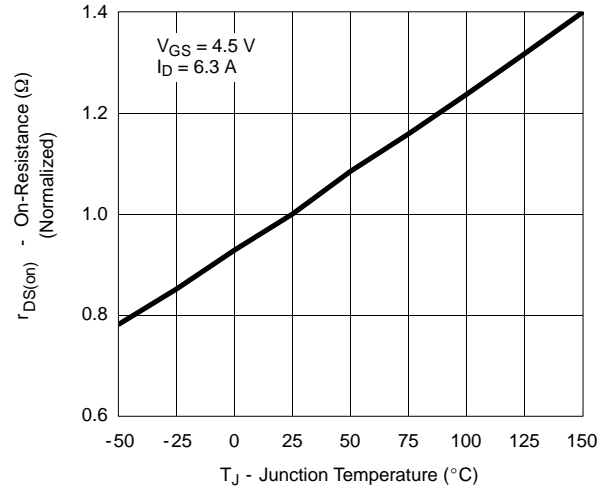
Capacitance



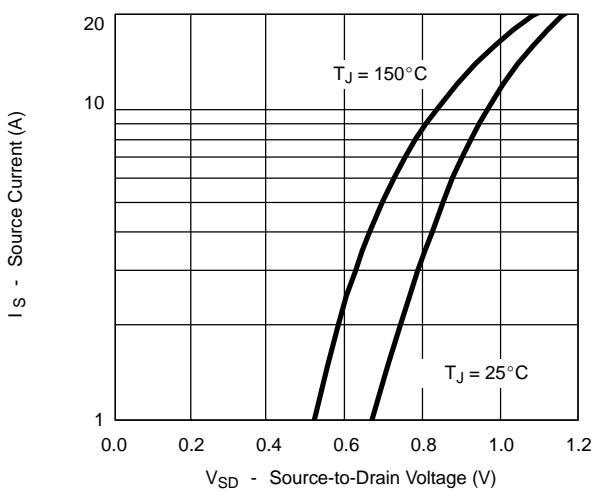
Gate Charge



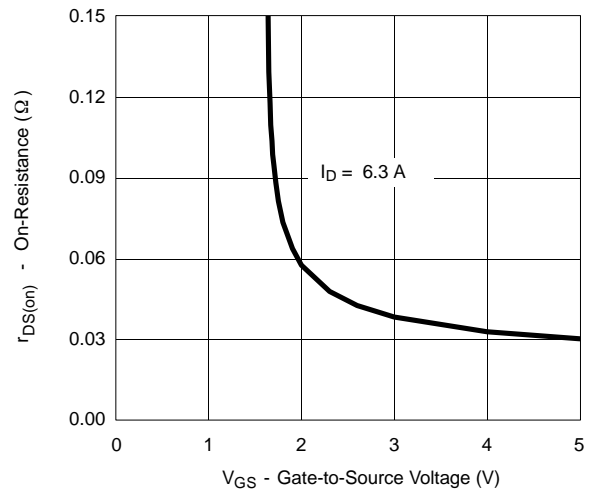
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage

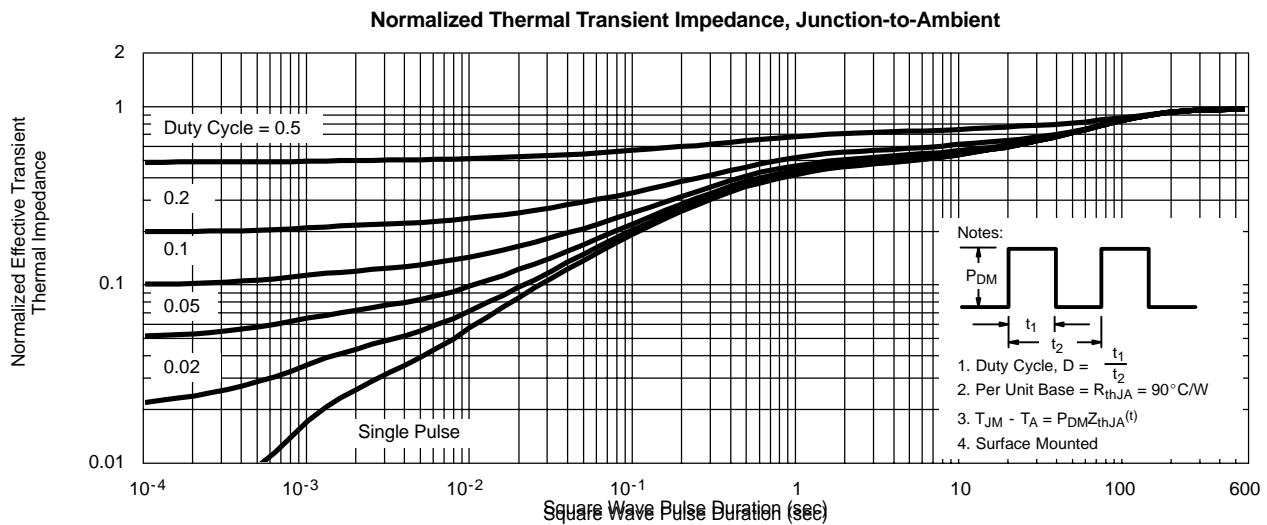
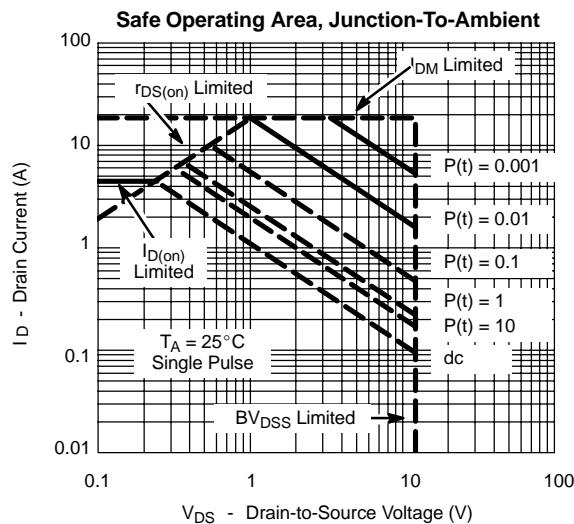
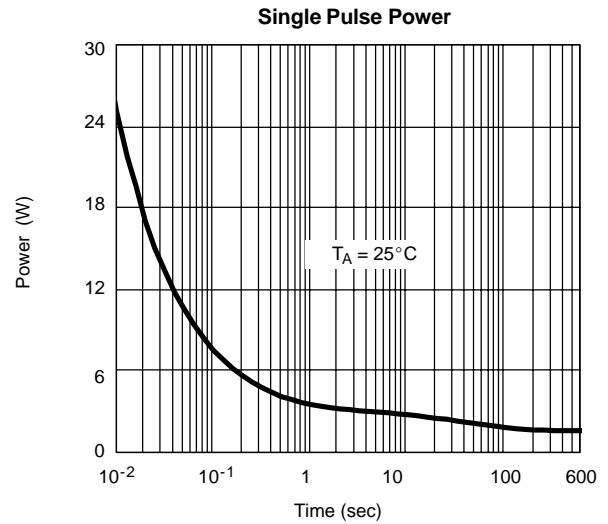
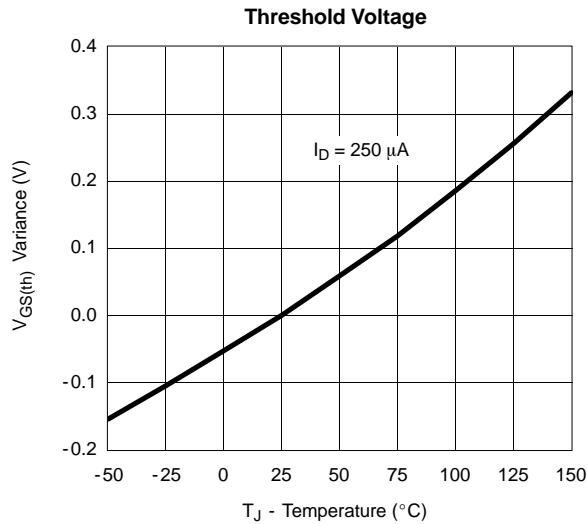


On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

