



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

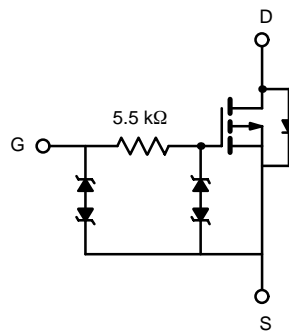
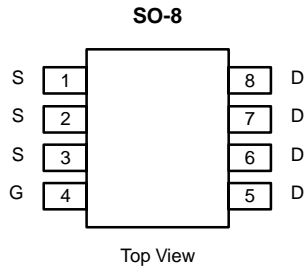
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.0105 @ $V_{GS} = -10$ V	-13.0
	0.0125 @ $V_{GS} = -4.5$ V	-12.0
	0.0195 @ $V_{GS} = -2.5$ V	-9.0

FEATURES

- TrenchFET® Power MOSFET
- V_{GS} Surge Protection to 18 V
- ESD Protected: 4000 V

APPLICATIONS

- Battery Switch
- Load Switch



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	V_{DS}	-30		V	
Gate-Source Voltage	V_{GS}	± 12			
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	-13.0	-9.4	A
		$T_A = 70^\circ\text{C}$	-10.0	-7.5	
Pulsed Drain Current	I_{DM}	-50			
continuous Source Current (Diode Conduction) ^a	I_S	-2.5	-1.3		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	3.0	1.5	W
		$T_A = 70^\circ\text{C}$	1.9	0.9	
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	32	42	$^\circ\text{C/W}$
		Steady State	68	85	
Maximum Junction-to-Foot (Drain)	R_{thJF}	15	18		

Notes

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

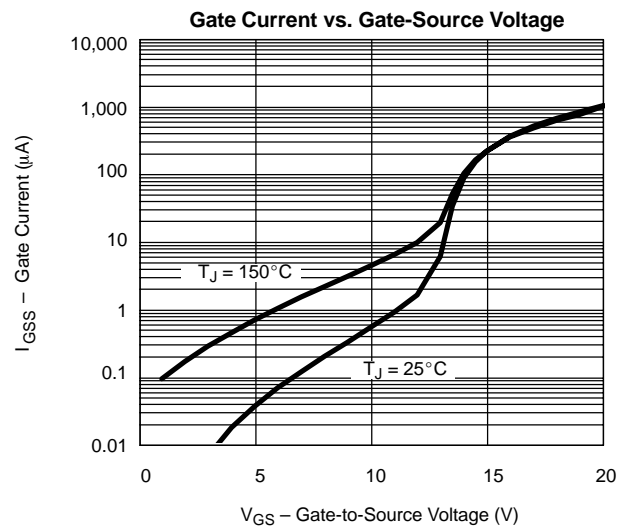
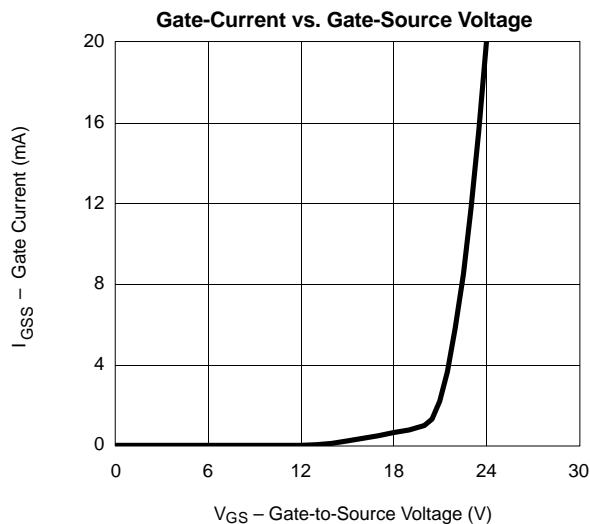
SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.60			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±12 V			±20	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24 V, V _{GS} = 0 V			-1	
		V _{DS} = -24 V, V _{GS} = 0 V, T _J = 55 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≤ -5 V, V _{GS} = -10 V	-30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -10 V, I _D = -13.0 A		0.0086	0.0105	Ω
		V _{GS} = -4.5 V, I _D = -12.0 A		0.0105	0.0125	
		V _{GS} = -2.5 V, I _D = -9.0 A		0.0160	0.0195	
Forward Transconductance ^a	g _{fs}	V _{DS} = -15 V, I _D = -13.0 A		40		S
Diode Forward Voltage ^a	V _{SD}	I _S = -2.5 A, V _{GS} = 0 V		-0.8	-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -15 V, V _{GS} = -4.5 V, I _D = -13.0 A		51	75	nC
Gate-Source Charge	Q _{gs}			9		
Gate-Drain Charge	Q _{gd}			12.0		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -15 V, R _L = 15 Ω I _D ≅ -1 A, V _{GEN} = -10 V, R _G = 6 Ω		14	21	μs
Rise Time	t _r			19	29	
Turn-Off Delay Time	t _{d(off)}			54	80	
Fall Time	t _f			41	62	

Notes

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

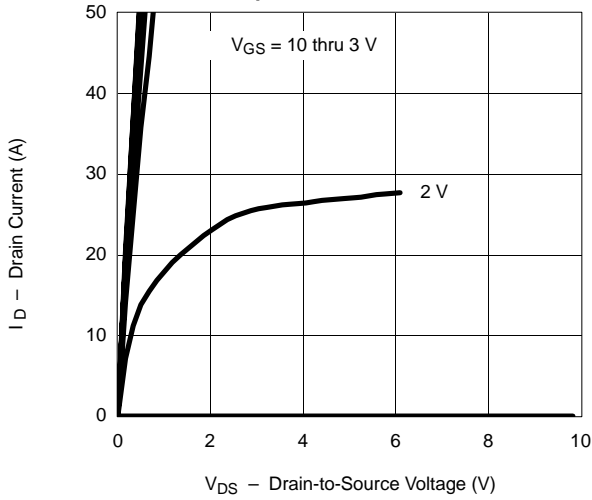
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



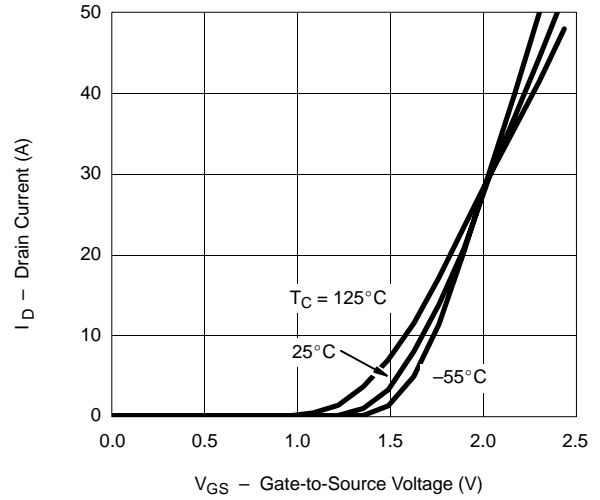


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

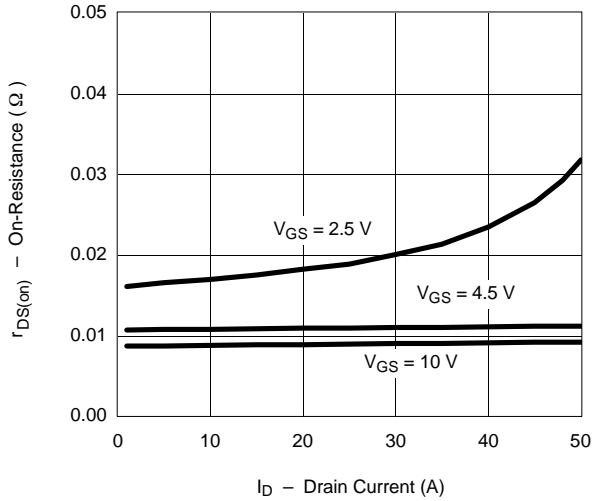
Output Characteristics



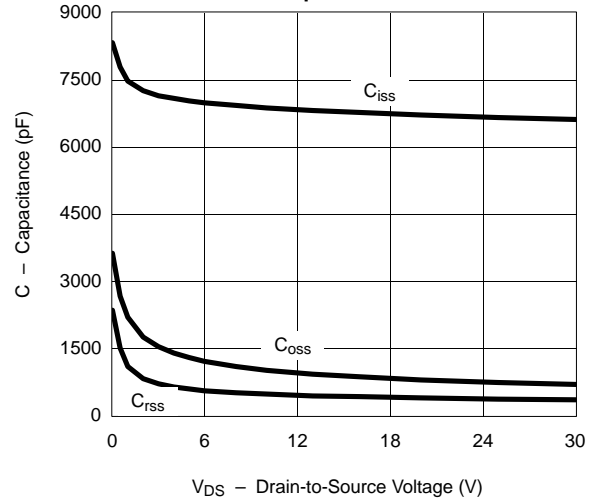
Transfer Characteristics



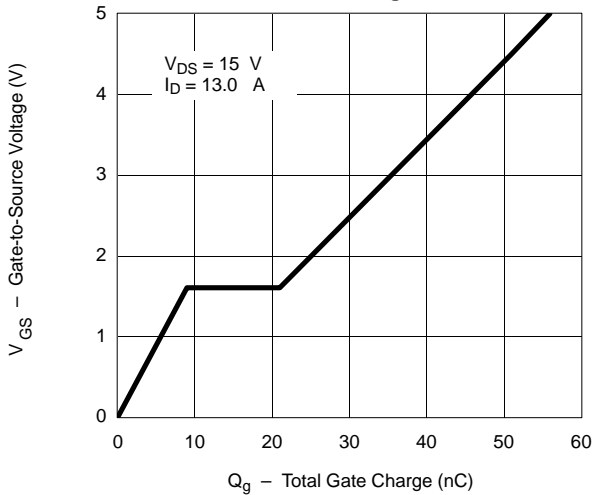
On-Resistance vs. Drain Current



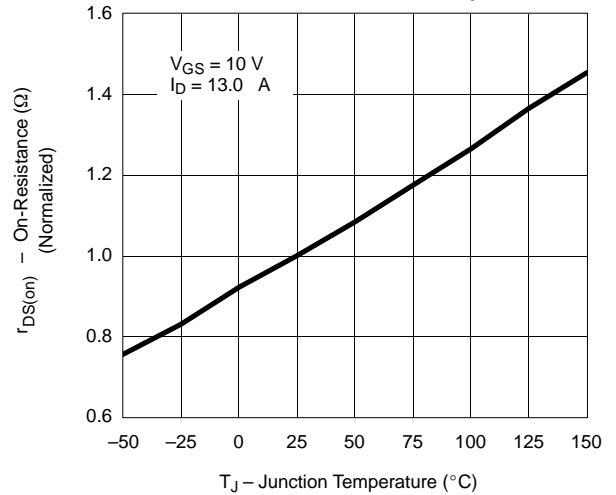
Capacitance



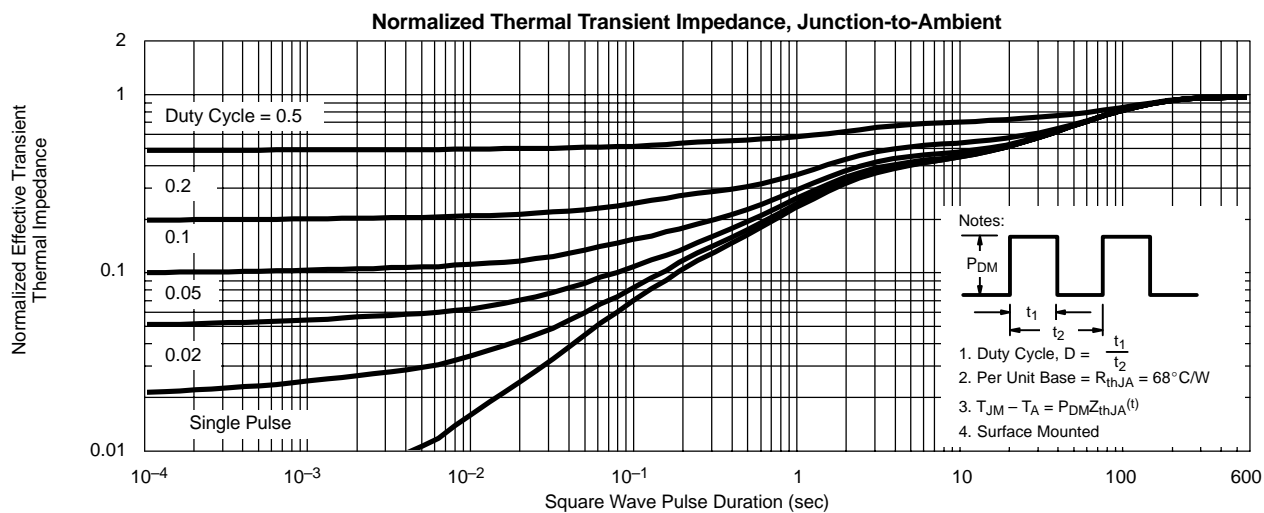
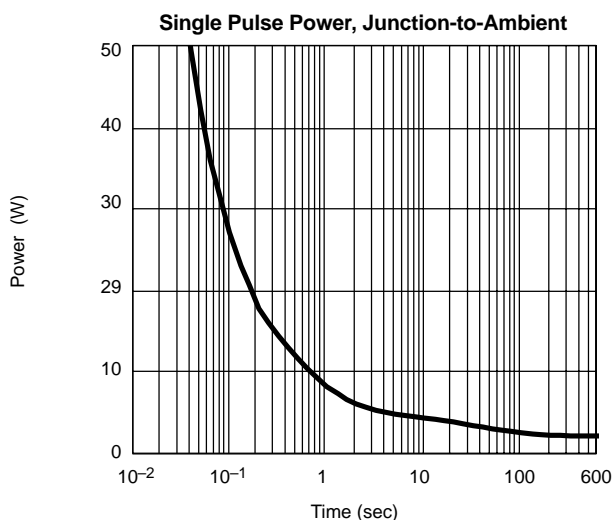
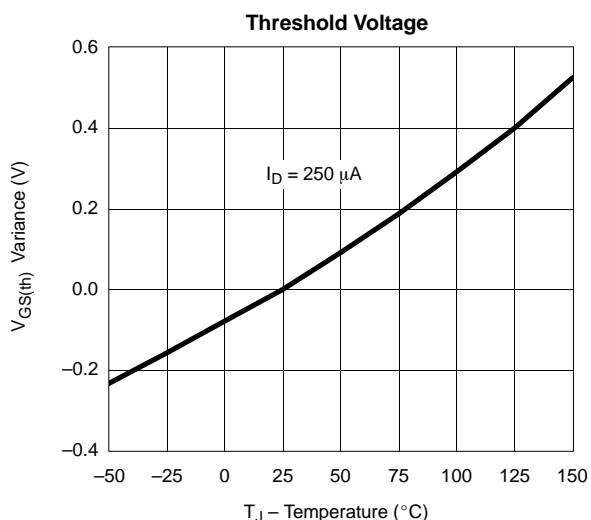
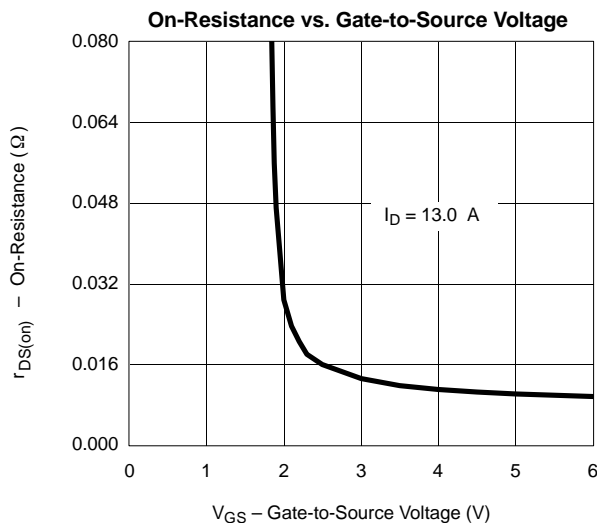
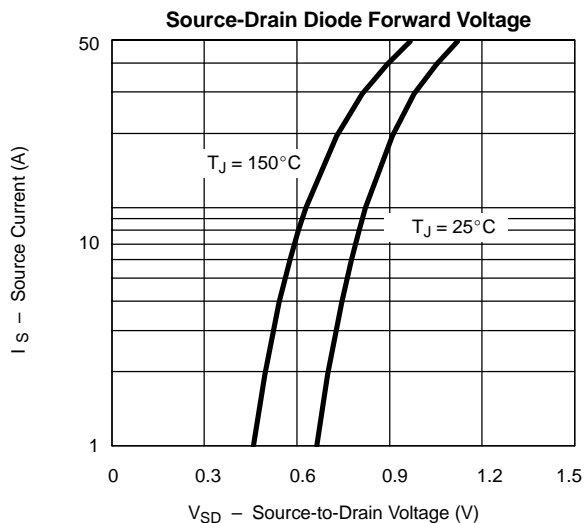
Gate Charge



On-Resistance vs. Junction Temperature



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

