



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

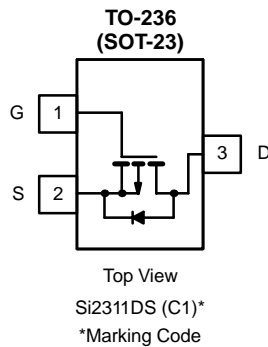
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-8	0.045 @ $V_{GS} = -4.5$ V	-3.5
	0.072 @ $V_{GS} = -2.5$ V	-2.8
	0.120 @ $V_{GS} = -1.8$ V	-2.0

FEATURES

- TrenchFET® Power MOSFET

APPLICATIONS

- Load Switch



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V_{DS}	-8		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	-3.5	-3.0	A
	$T_A = 70^\circ\text{C}$		-2.8	-2.4	
Pulsed Drain Current		I_{DM}	-10		
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	-0.8	-0.6	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	0.96	0.71	W
	$T_A = 70^\circ\text{C}$		0.62	0.46	
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}	100	130	$^\circ\text{C/W}$
	Steady State		140	175	
Maximum Junction-to-Foot (drain)		R_{thJF}	60	75	

Notes

- Surface Mounted on FR4 Board.
- Pulse width limited by maximum junction temperature.

SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

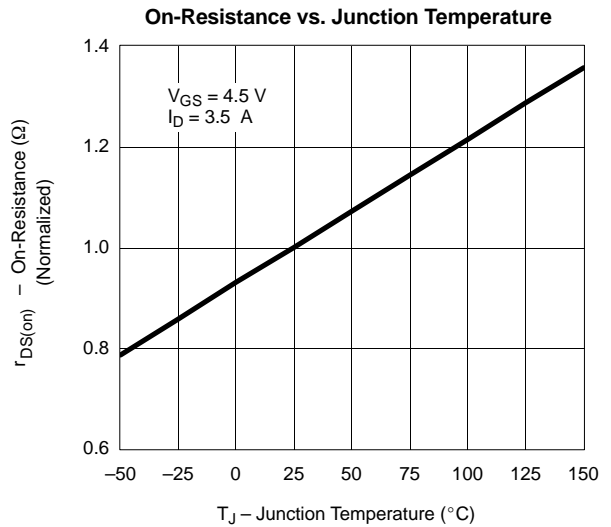
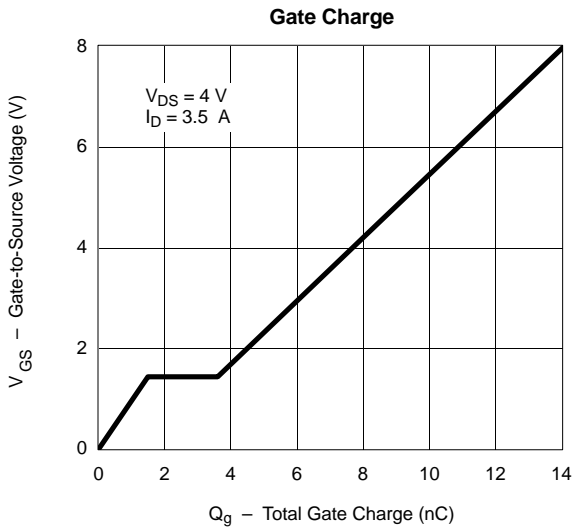
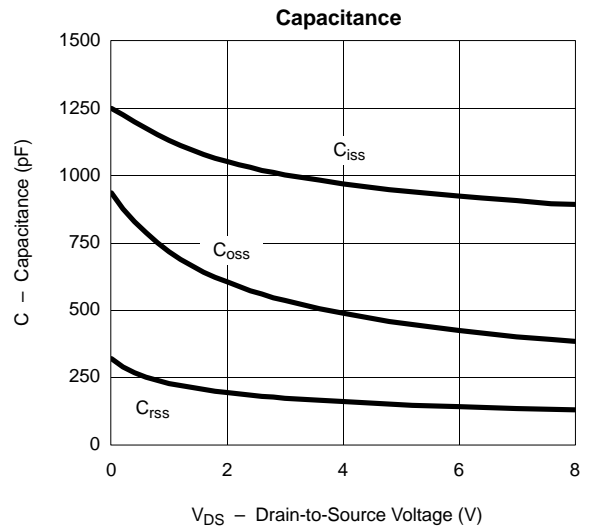
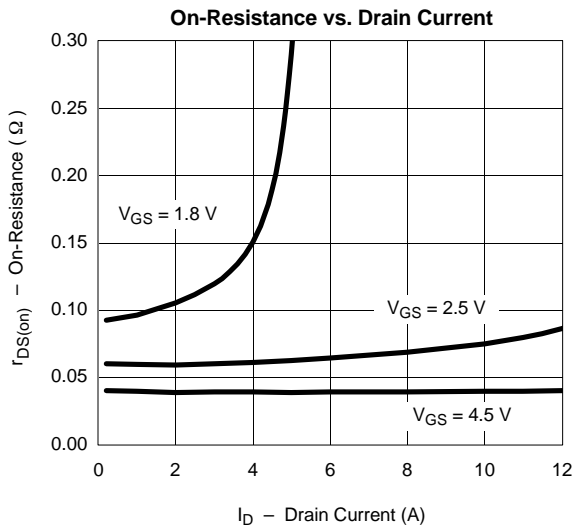
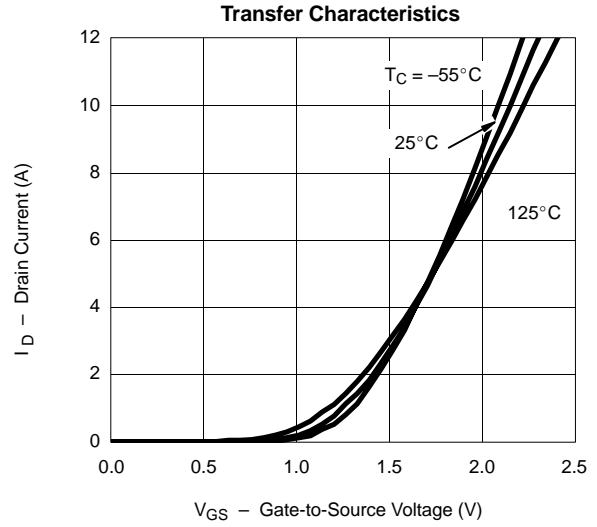
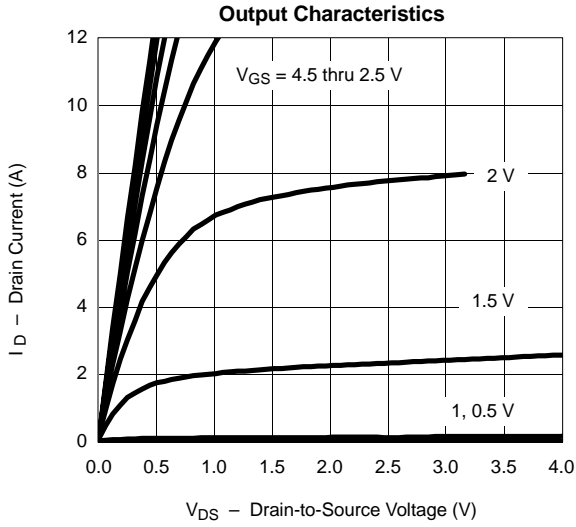
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -10 μA	-8			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.45		-0.8	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -6.4 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -6.4 V, V _{GS} = 0 V, T _J = 55 °C			-10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≤ -5 V, V _{GS} = -4.5 V	-6			A
		V _{DS} ≤ -5 V, V _{GS} = -2.5 V	-3			
Drain-Source On-Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -3.5 A		0.036	0.045	Ω
		V _{GS} = -2.5 V, I _D = -3 A		0.058	0.072	
		V _{GS} = -1.8 V, I _D = -0.7 A		0.096	0.120	
Forward Transconductance ^a	g _{fs}	V _{DS} = -5 V, I _D = -3.5 A		9.0		S
Diode Forward Voltage	V _{SD}	I _S = -0.8 A, V _{GS} = 0 V			-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -4 V, V _{GS} = -4.5 V I _D ≅ -3.5 A		8.5	12	nC
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			2.1		
Input Capacitance	C _{iss}	V _{DS} = -4 V, V _{GS} = 0, f = 1 MHz		970		pF
Output Capacitance	C _{oss}			485		
Reverse Transfer Capacitance	C _{riss}			160		
Switching^b						
Turn-On Time	t _{d(on)}	V _{DD} = -4 V, R _L = 4 Ω I _D ≅ -1.0 A, V _{GEN} = -4.5 V R _G = 6 Ω		18	25	ns
	t _r			45	65	
Turn-Off Time	t _{d(off)}			40	60	
	t _f			45	65	

Notes

- For DESIGN AID ONLY, not subject to production testing.
- Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.
- Switching time is essentially independent of operating temperature.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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