

P-Channel 1.25-W, 1.8-V (G-S) MOSFET

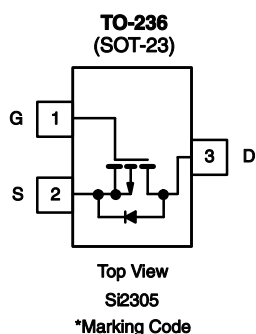
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
- 20	0.065 at $V_{GS} = - 4.5$ V	± 3.2
	0.085 at $V_{GS} = - 2.5$ V	± 2.0

FEATURES

Power MOSFETs: 1.8 V Rated



RoHS*
COMPLIANT



ABSOLUTE MAXIMUM RATINGS $T_A = 25^\circ\text{C}$, unless otherwise noted				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	- 20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_A = 25^\circ\text{C}$	I_D	± 3.2	A
	$T_A = 70^\circ\text{C}$		± 2.0	
Pulsed Drain Current		I_{DM}	± 12	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	- 1.6	W
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	1.25	
	$T_A = 70^\circ\text{C}$		0.8	
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	$^\circ\text{C/W}$
	Steady State		130		

Notes:

a. Surface Mounted on FR4 Board.

b. $t \leq 5$ sec.

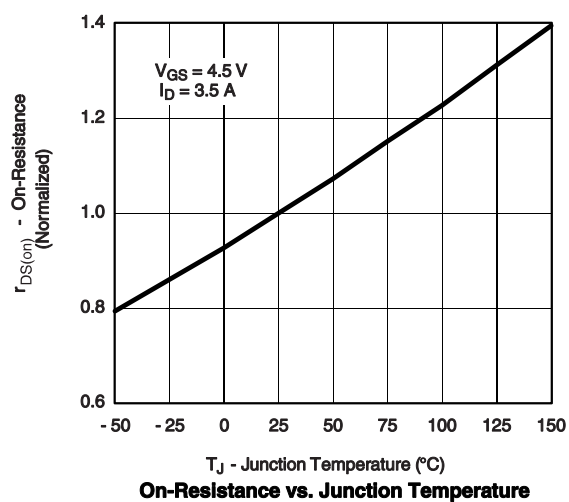
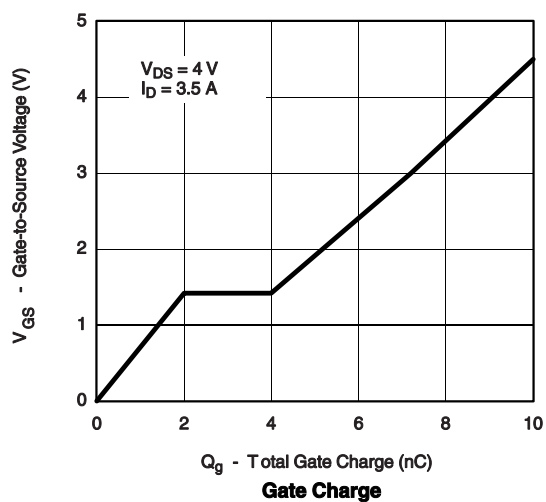
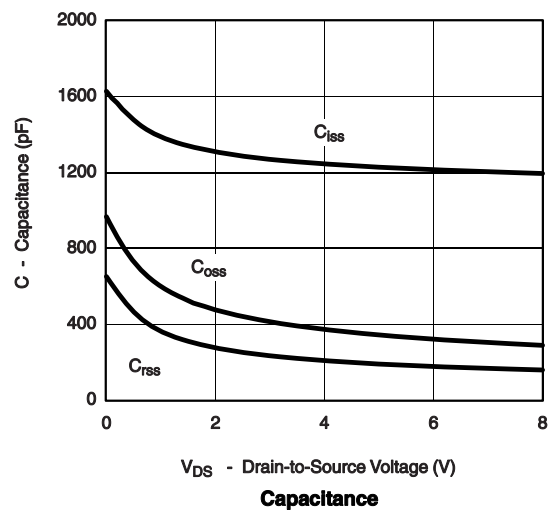
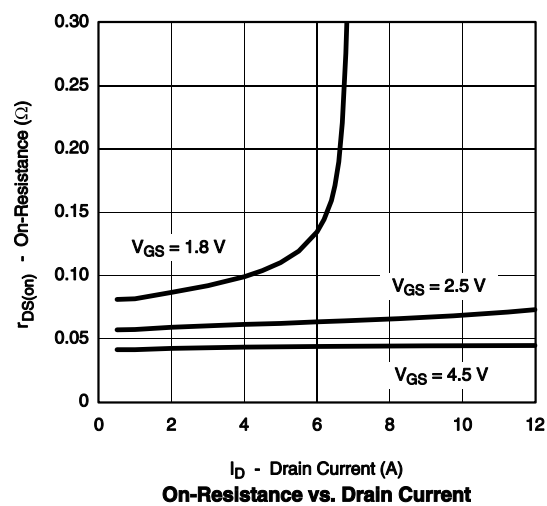
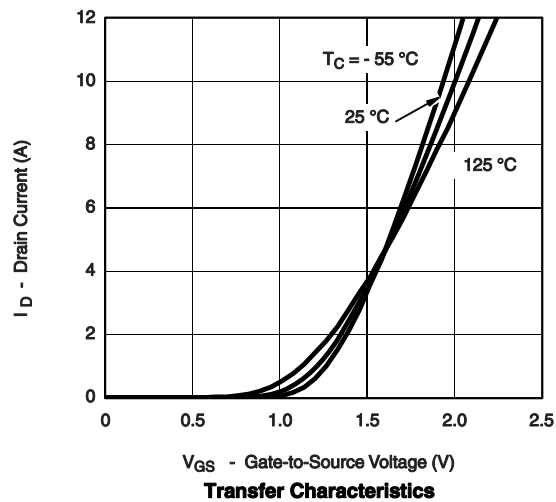
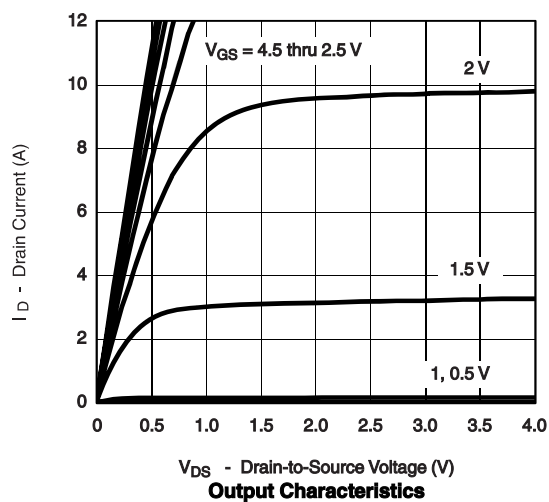
SPECIFICATIONS $T_J = 25\text{ }^{\circ}\text{C}$, unless otherwise noted						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$, $I_D = -10\text{ }\mu\text{A}$	-20			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\text{ }\mu\text{A}$	-0.45		-1	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}$, $V_{GS} = \pm 12\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16\text{ V}$, $V_{GS} = 0\text{ V}$			-50	nA
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \leq -5\text{ V}$, $V_{GS} = -4.5\text{ V}$	-6			A
		$V_{DS} \leq -5\text{ V}$, $V_{GS} = -2.5\text{ V}$	-3			
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}$, $I_D = -3.2\text{ A}$			0.065	Ω
		$V_{GS} = -2.5\text{ V}$, $I_D = -2\text{ A}$			0.085	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -5\text{ V}$, $I_D = -3.2\text{ A}$		8.5		S
Diode Forward Voltage	V_{SD}	$I_S = -1.6\text{ A}$, $V_{GS} = 0\text{ V}$			-1.28	V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = -4\text{ V}$, $V_{GS} = -4.5\text{ V}$, $I_D \cong -3.5\text{ A}$		10	15	nC
Gate-Source Charge	Q_{gs}			2		
Gate-Drain Charge	Q_{gd}			2		
Input Capacitance	C_{iss}	$V_{DS} = -4\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1\text{ MHz}$		1245		pF
Output Capacitance	C_{oss}			375		
Reverse Transfer Capacitance	C_{rss}			210		
Switching ^b						
Turn-On Time	$t_{d(on)}$	$V_{DD} = -4\text{ V}$, $R_L = 4\text{ }\Omega$ $I_D \cong -1.0\text{ A}$, $V_{GEN} = -4.5\text{ V}$, $R_G = 6\text{ }\Omega$		13	20	ns
	t_r			25	40	
Turn-Off Time	$t_{d(off)}$			55	80	
	t_f			19	35	

Notes:

a. For DESIGN AID ONLY, not subject to production testing.

b. Pulse test: $PW \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

c. Switching time is essentially independent of operating temperature.

TYPICAL CHARACTERISTICS 25 °C, unless noted

TYPICAL CHARACTERISTICS 25 °C, unless noted