



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

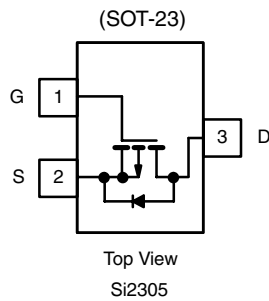
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
- 20	0.055 at $V_{GS} = - 4.5$ V	-3.5
	0.075 at $V_{GS} = - 2.5$ V	-3.0
	0.095 at $V_{GS} = - 1.8$ V	-1.8

FEATURES

Power MOSFETs: 1.8 V Rated



RoHS*
COMPLIANT



ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted				
Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V_{DS}	- 20	V	
Gate-Source Voltage	V_{GS}	± 12		
Continuous Drain Current ($T_J = 150\text{ }^\circ\text{C}$)	$T_A = 25\text{ }^\circ\text{C}$	I_D	-3.5	A
Pulsed Drain Current				
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	- 1.6	
Maximum Power Dissipation ^{a, b}	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.25	W
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}	130	100	$^\circ\text{C/W}$	
			t \leq 5 sec		
				Steady State	

Notes:

a. Surface Mounted on FR4 Board.

b. t \leq 5 sec.



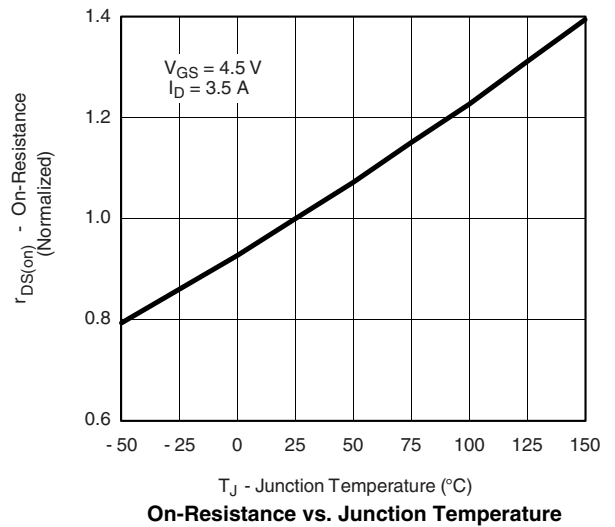
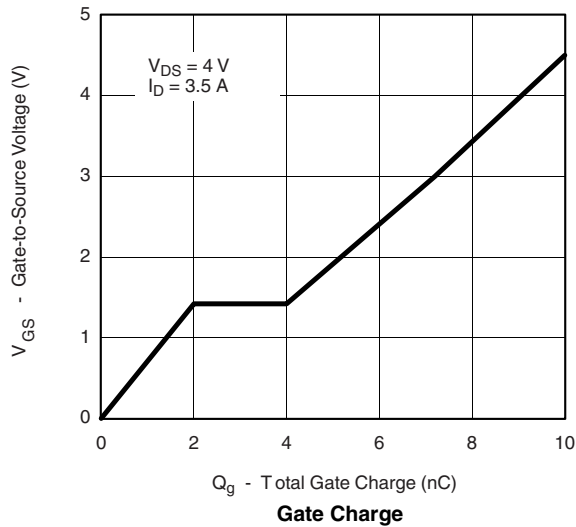
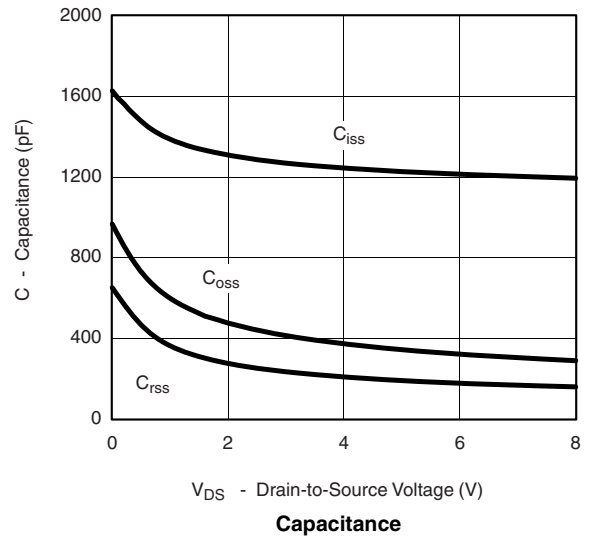
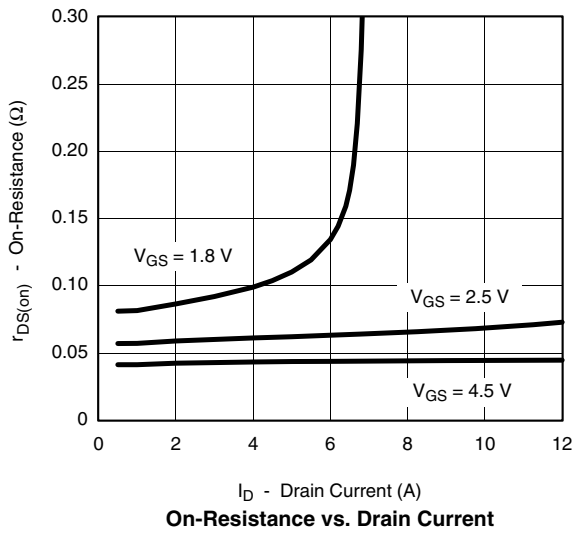
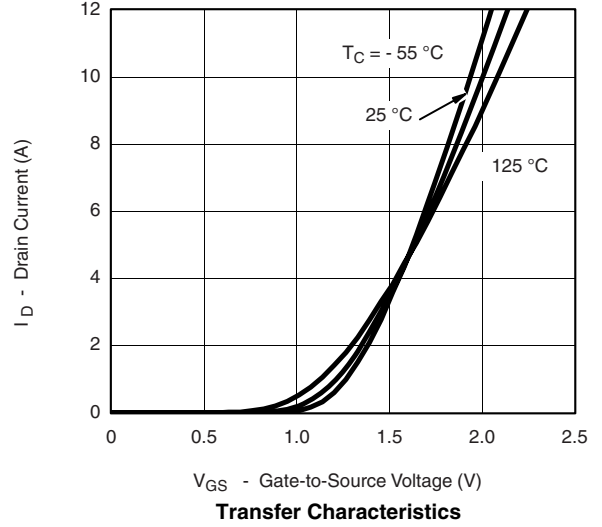
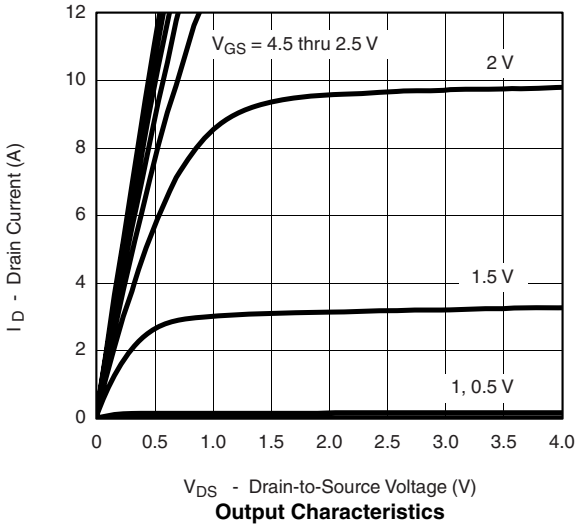
SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-20			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	-0.45		-1	V
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	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -3.5\text{ A}$		0.045	0.055	Ω
		$V_{GS} = -2.5\text{ V}, I_D = -3.0\text{ A}$		0.060	0.075	
		$V_{GS} = -1.8\text{ V}, I_D = -2.0\text{ A}$		0.090	0.095	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -5\text{ V}, I_D = -3.5\text{ A}$		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





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