

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

PRODUCT SUMMARY

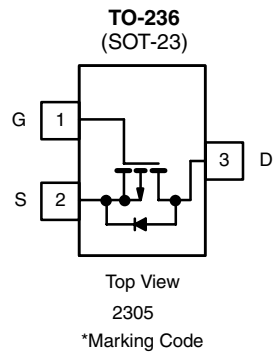
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
- 8	0.060 at $V_{GS} = - 4.5$ V	± 3.5
	0.090 at $V_{GS} = - 2.5$ V	± 3
	0.108 at $V_{GS} = - 1.8$ V	± 2

FEATURES

Power MOSFETs: 1.8 V Rated



RoHS*
COMPLIANT



ABSOLUTE MAXIMUM RATINGS $T_A = 25$ °C, unless otherwise noted

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	- 8	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ($T_J = 150$ °C)	I_D	± 3.5	A
		± 2.8	
Pulsed Drain Current	I_{DM}	± 12	
Continuous Source Current (Diode Conduction) ^{a, b}	I_S	- 1.6	W
Maximum Power Dissipation ^{a, b}	P_D	1.25	
		0.8	
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	R_{thJA}		100	°C/W
		130		

Notes:

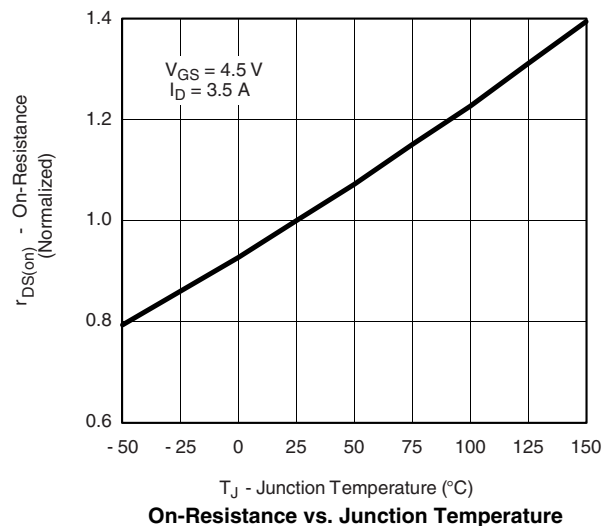
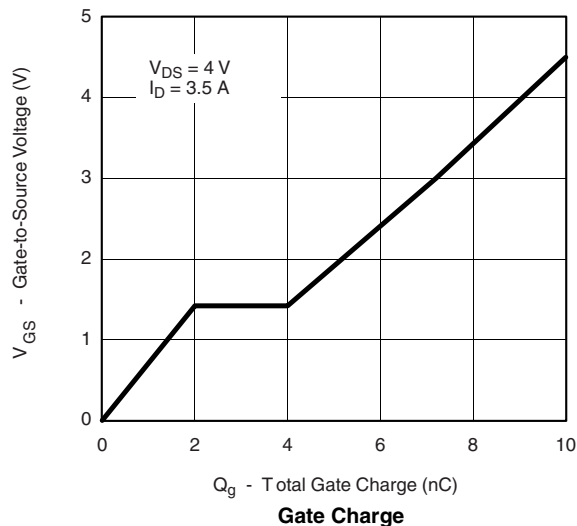
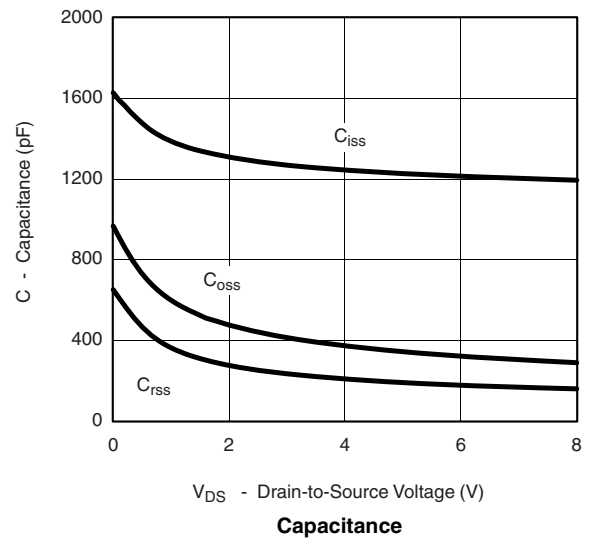
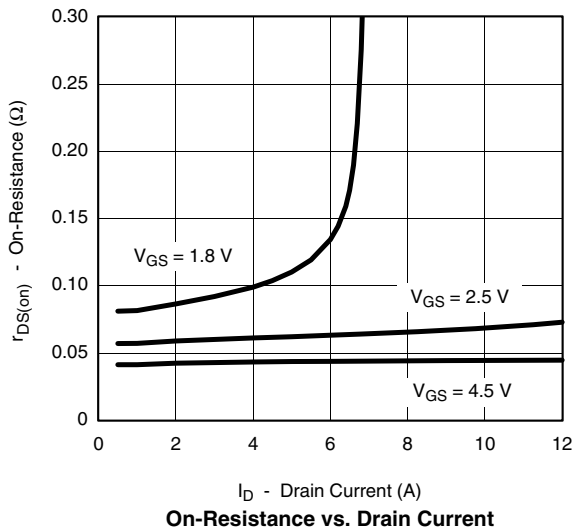
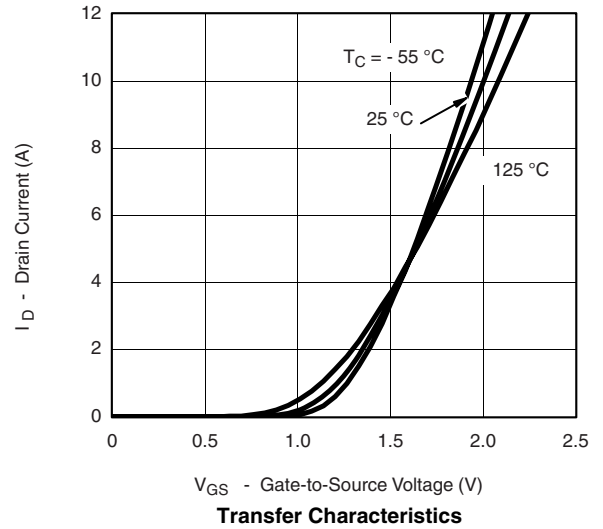
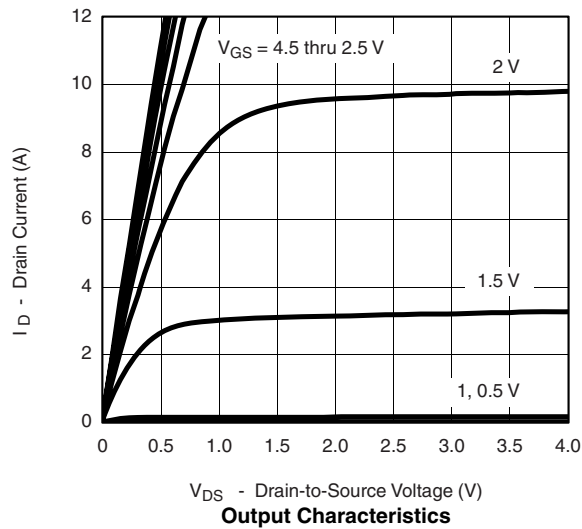
a. Surface Mounted on FR4 Board.

b. $t \leq 5$ sec.

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} = - 8 V, V _{GS} = 0 V			- 1	μA
		V _{DS} = - 8 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		0.044	0.060	Ω
		V _{GS} = - 2.5 V, I _D = - 3 A		0.060	0.090	
		V _{GS} = - 1.8 V, I _D = - 2 A		0.087	0.108	
Forward Transconductance ^a	g _{fs}	V _{DS} = - 5 V, I _D = - 3.5 A		8.5		S
Diode Forward Voltage	V _{SD}	I _S = - 1.6 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		10	15	nC
Gate-Source Charge	Q _{gs}			2		
Gate-Drain Charge	Q _{gd}			2		
Input Capacitance	C _{iss}	V _{DS} = - 4 V, V _{GS} = 0 V, f = 1 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 V, R _L = 4 Ω I _D ≡ - 1.0 A, V _{GEN} = - 4.5 V, R _G = 6 Ω		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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