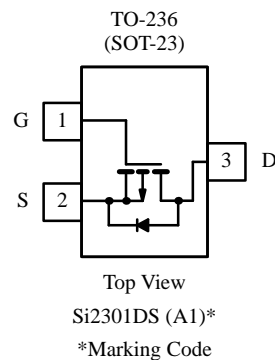


P-Channel 1.25-W, 2.5-V Rated MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-12	0.130 @ $V_{GS} = -4.5$ V	-2.3
	0.190 @ $V_{GS} = -2.5$ V	-1.9



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^b	I_D	$T_A = 25^\circ\text{C}$	-2.3
		$T_A = 70^\circ\text{C}$	-1.5
Pulsed Drain Current ^a	I_{DM}	-10	A
Continuous Source Current (Diode Conduction) ^b	I_S	-1.6	
Power Dissipation ^b	P_D	$T_A = 25^\circ\text{C}$	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	Limit	Unit
Maximum Junction-to-Ambient ^b	R_{thJA}	100	$^\circ\text{C}/\text{W}$
Maximum Junction-to-Ambient ^c		166	

Notes

- Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board, $t \leq 5$ sec.
- Surface Mounted on FR4 Board.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70627.

Specifications^a

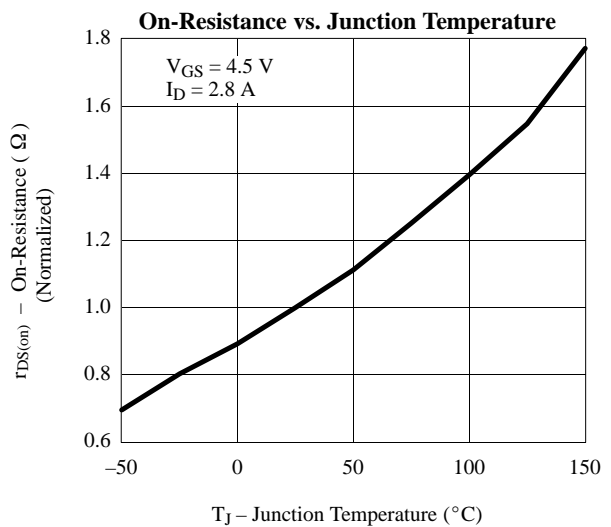
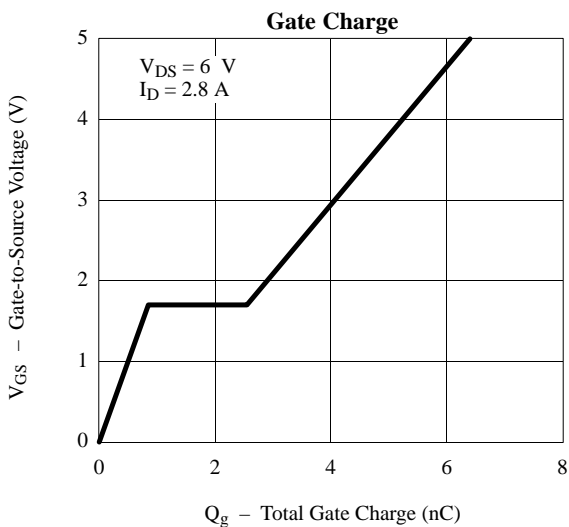
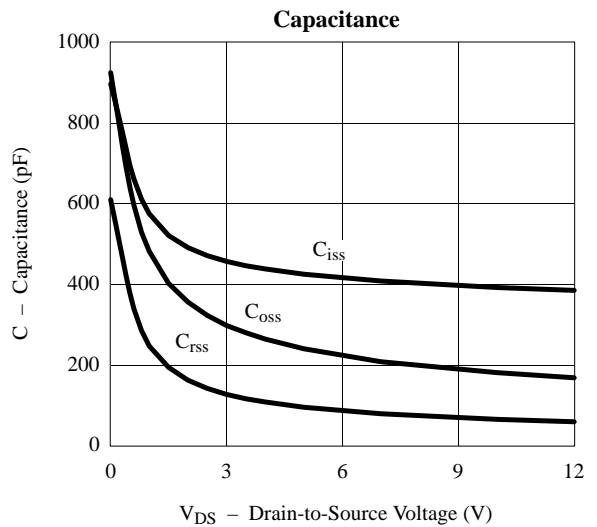
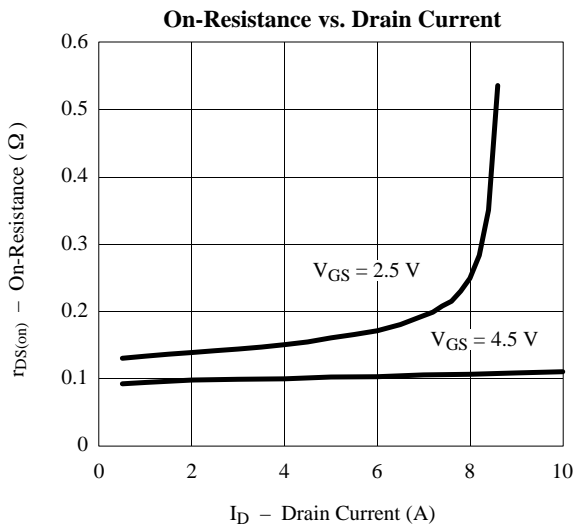
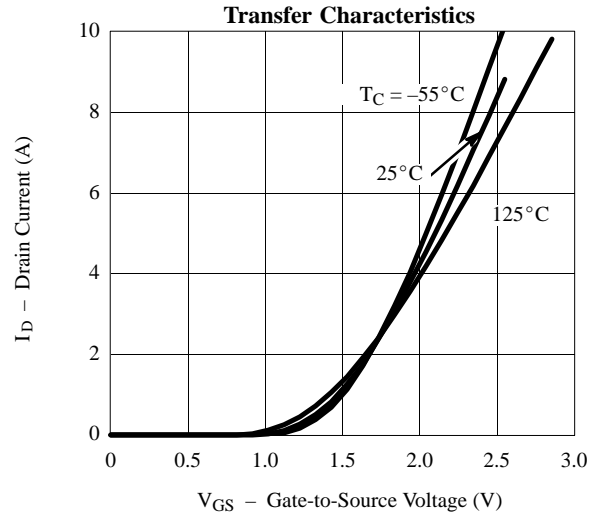
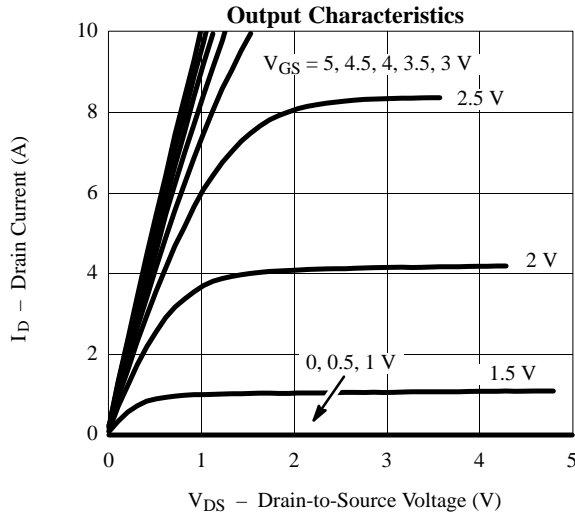
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-12			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	-0.45			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12\text{ V}, V_{GS} = 0\text{ V}$ $T_J = 55^\circ\text{C}$			-1	μA
					-10	
On-State Drain Current ^c	$I_{D(on)}$	$V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$	-6			A
		$V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$	-3			
Drain-Source On-Resistance ^c	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -2.8\text{ A}$		0.105	0.130	Ω
		$V_{GS} = -2.5\text{ V}, I_D = -2.0\text{ A}$		0.145	0.190	
Forward Transconductance ^c	g_{fs}	$V_{DS} = -5\text{ V}, I_D = -2.8\text{ A}$		6.5		S
Diode Forward Voltage	V_{SD}	$I_S = -1.6\text{ A}, V_{GS} = 0\text{ V}$		0.80	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -6\text{ V}, V_{GS} = -4.5\text{ V}$ $I_D \cong -2.8\text{ A}$		5.8	10	pC
Gate-Source Charge	Q_{gs}			0.85		
Gate-Drain Charge	Q_{gd}			1.70		
Input Capacitance	C_{iss}	$V_{DS} = -6\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		415		pF
Output Capacitance	C_{oss}			223		
Reverse Transfer Capacitance	C_{rss}			87		
Switching^d						
Turn-On Time	$t_{d(on)}$	$V_{DD} = -6\text{ V}, R_L = 6\text{ }\Omega$ $I_D \cong -1.0\text{ A}, V_{GEN} = -4.5\text{ V}$ $R_G = 6\text{ }\Omega$		13.0	25	ns
	t_r			36.0	60	
Turn-Off Time	$t_{d(off)}$			42	70	
	t_f			34	60	

Notes

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 b. For DESIGN AID ONLY, not subject to production testing.
 c. Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.
 d. Switching time is essentially independent of operating temperature.

VPLR01

Typical Characteristics (25°C Unless Otherwise Noted)



Typical Characteristics (25°C Unless Otherwise Noted)

