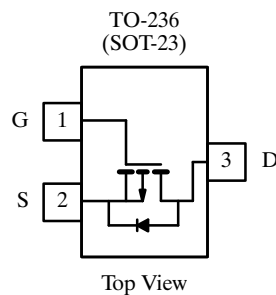


P-Channel Enhancement-Mode MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-12	0.65 @ $V_{GS} = -4.5$ V	-0.5
	0.85 @ $V_{GS} = -2.5$ V	-0.4



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*Marking Code for TO-236

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	$T_A = 25^\circ\text{C}$	-0.5
		$T_A = 7^\circ\text{C}$	-0.39
Pulsed Drain Current ^a	I_{DM}	-3	A
Continuous Source Current (Diode Conduction) ^b	I_S	-0.5	
Power Dissipation ^b	P_D	$T_A = 25^\circ\text{C}$	0.23
		$T_A = 70^\circ\text{C}$	0.15
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}	550	$^\circ\text{C/W}$

Notes

- a. Pulse width limited by maximum junction temperature.
- b. Surface Mounted on FR4 Board, $t \leq 10$ sec.

This product has been released by Siliconix in April, 1995. Subsequent updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #2833.

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Specifications^a

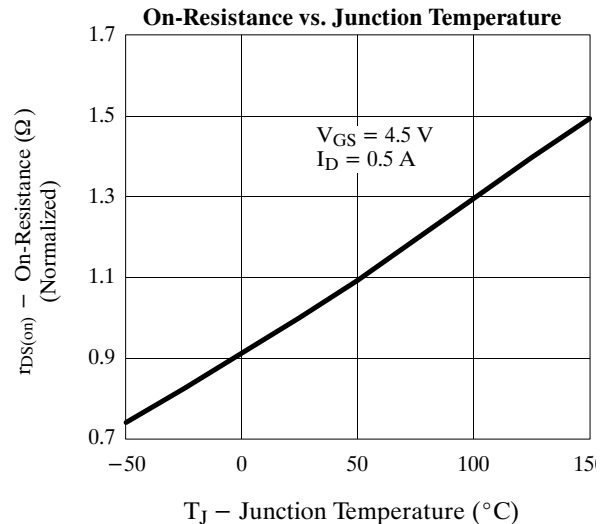
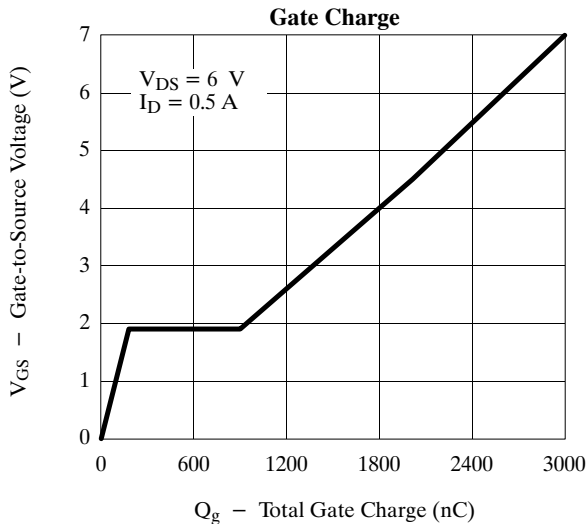
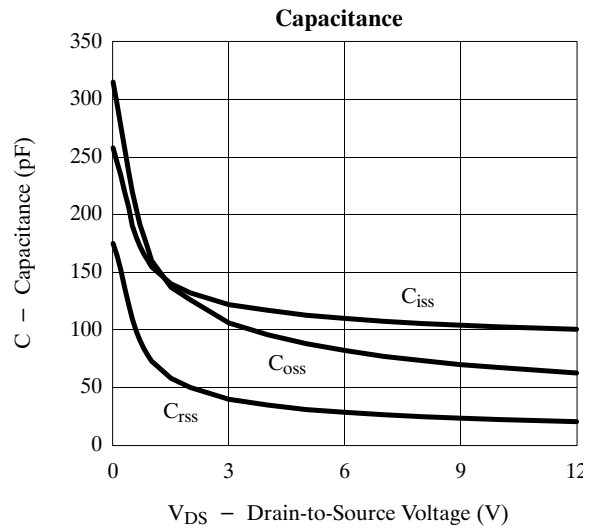
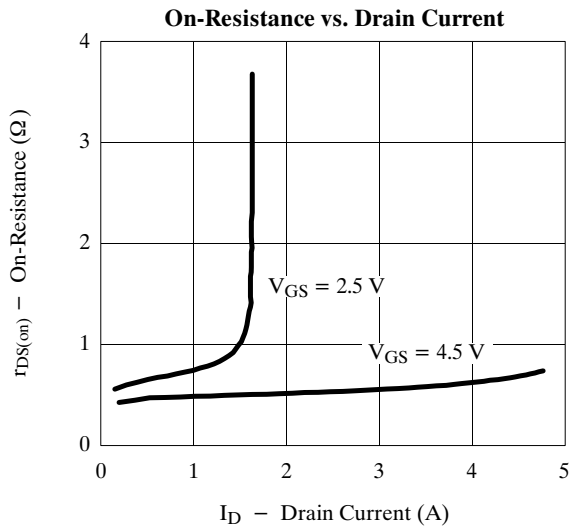
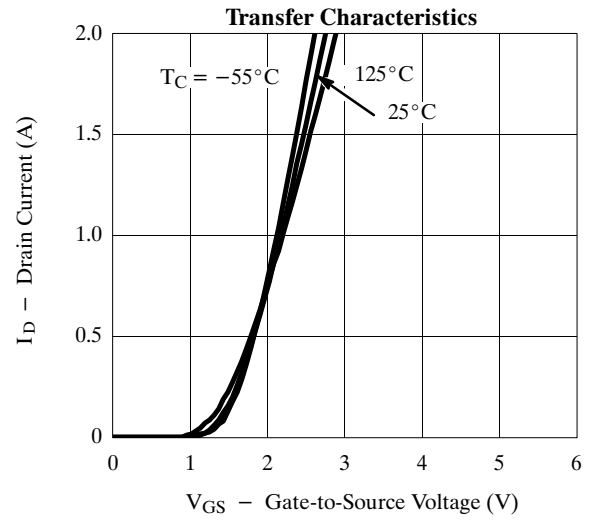
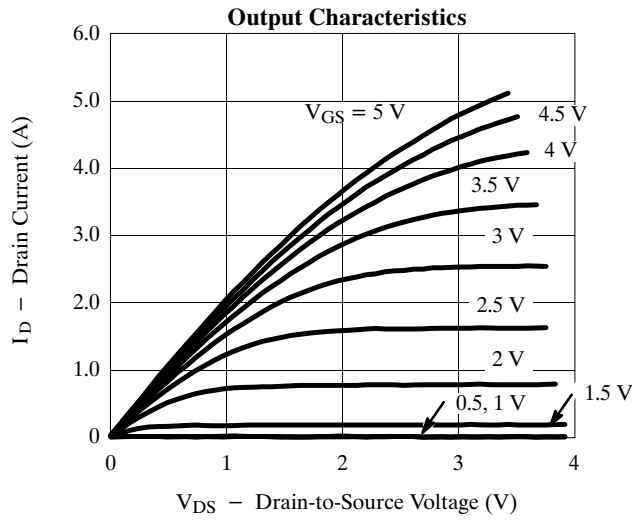
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-12	-25		V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -50\text{ }\mu\text{A}$	-0.65			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -9.6\text{ V}, V_{GS} = 0\text{ V}$ $T_J = 55^\circ\text{C}$			-1	μA
					-10	
On-State Drain Current ^c	$I_{D(on)}$	$V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$ $V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$	-2.5			A
			-0.5			
Drain-Source On-Resistance ^c	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -0.5\text{ A}$ $V_{GS} = -2.5\text{ V}, I_D = -0.4\text{ A}$		0.45	0.65	Ω
				0.69	0.85	
Forward Transconductance ^c	g_{fs}	$V_{DS} = -5\text{ V}, I_D = -0.5\text{ A}$		1.3		S
Diode Forward Voltage	V_{SD}	$I_S = -0.5\text{ A}, V_{GS} = 0\text{ V}$		-0.9	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -6\text{ V}, V_{GS} = -4.5\text{ V}$ $I_D \cong -0.5\text{ A}$		2020	3000	pC
Gate-Source Charge	Q_{gs}			180		
Gate-Drain Charge	Q_{gd}			720		
Input Capacitance	C_{iss}	$V_{DS} = -6\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		110		pF
Output Capacitance	C_{oss}			80		
Reverse Transfer Capacitance	C_{rss}			30		
Switching^d						
Turn-On Time	$t_{d(on)}$	$V_{DD} = -6\text{ V}, R_L = 12\text{ }\Omega$ $I_D \cong -0.5\text{ A}, V_{GEN} = -4.5\text{ V}$ $R_G = 6\text{ }\Omega$		7	12	ns
	t_r			25	35	
Turn-Off Time	$t_{d(off)}$			19	30	
	t_f			9	15	

Notes

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

VPLJ01

Typical Characteristics (25°C Unless Otherwise Noted)



TP0101T

Typical Characteristics (25°C Unless Otherwise Noted)

