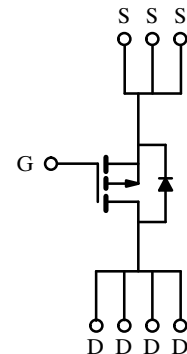
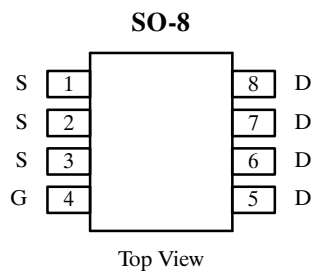


P-Channel Enhancement-Mode MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-12	0.040 @ $V_{GS} = -4.5$ V	± 6.4
	0.060 @ $V_{GS} = -2.7$ V	± 5.1



P-Channel MOSFET

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 ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	± 6.4
		$T_A = 70^\circ\text{C}$	± 5.1
Pulsed Drain Current	I_{DM}	± 10	A
Continuous Source Current (Diode Conduction) ^a	I_S	-2.5	
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	2.5
		$T_A = 70^\circ\text{C}$	1.6
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 ^a	R_{thJA}	50	$^\circ\text{C}/\text{W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

Subsequent updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #1229.

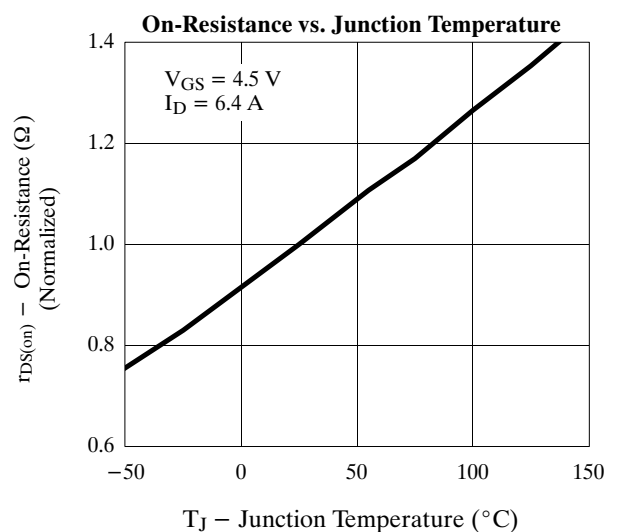
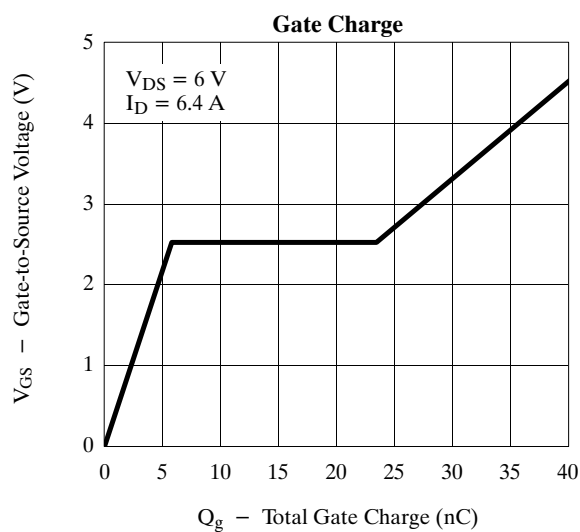
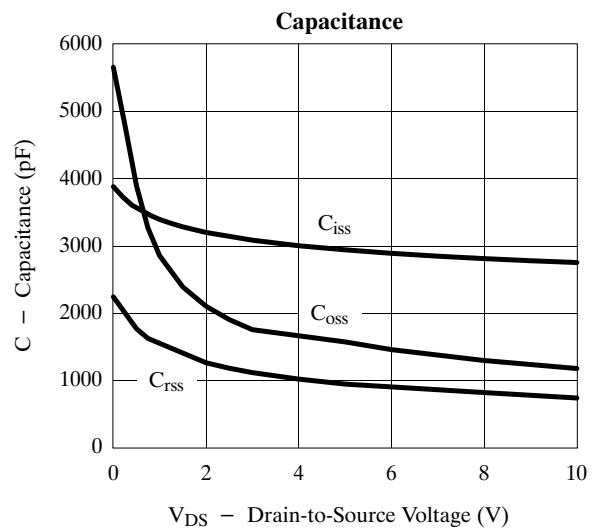
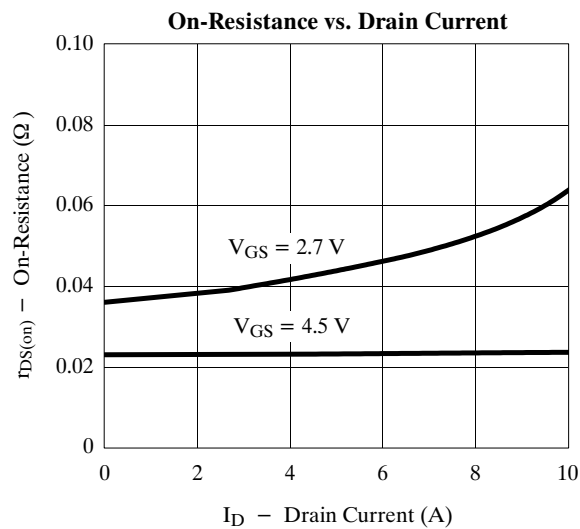
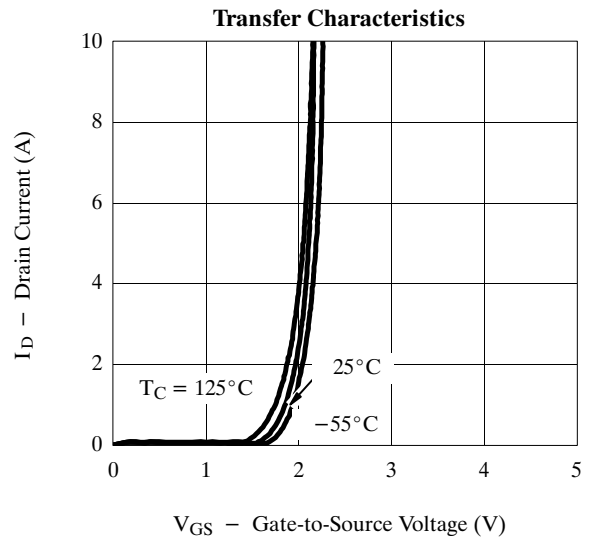
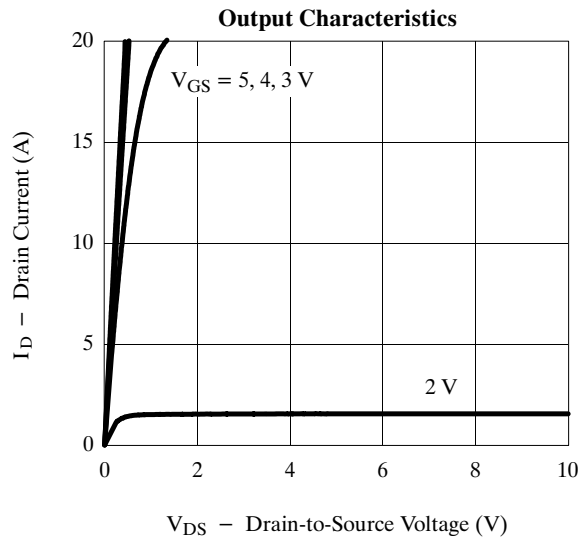
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu\text{A}$	-0.6			V
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}	$V_{DS} = -9.6 \text{ V}, V_{GS} = 0 \text{ V}$			-1	μA
		$V_{DS} = -6.0 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 70^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \leq -5 \text{ V}, V_{GS} = -4.5 \text{ V}$	-10			A
		$V_{DS} \leq -5 \text{ V}, V_{GS} = -2.7 \text{ V}$	-8			
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5 \text{ V}, I_D = -6.4 \text{ A}$			0.040	Ω
		$V_{GS} = -2.7 \text{ V}, I_D = -5.1 \text{ A}$			0.060	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -9 \text{ V}, I_D = -6.4 \text{ A}$		14		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -2.5 \text{ A}, V_{GS} = 0 \text{ V}$		-0.9	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -6 \text{ V}, V_{GS} = -4.5 \text{ V}, I_D = -6.4 \text{ A}$		36	80	nC
Gate-Source Charge	Q_{gs}		6			
Gate-Drain Charge	Q_{gd}		17			
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -6 \text{ V}, R_L = 6 \Omega$ $I_D \cong -1 \text{ A}, V_{GEN} = -4.5 \text{ V}, R_G = 6 \Omega$		60	150	ns
Rise Time	t_r		90	200		
Turn-Off Delay Time	$t_{d(off)}$		150	300		
Fall Time	t_f		110	200		
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -2.5 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		50	100	

Notes

- a. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.

Typical Characteristics (25°C Unless Otherwise Noted)



Si9434DY

Typical Characteristics (25°C Unless Otherwise Noted)

