

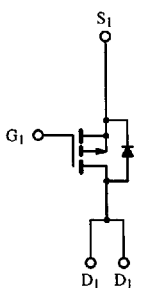
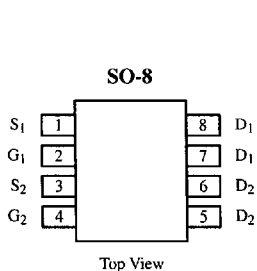
**Dual P-Channel Enhancement-Mode MOSFET**

**Product Summary**

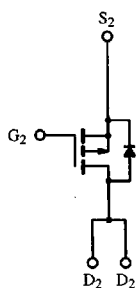
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-20	0.11 @ V <sub>GS</sub> = -4.5 V	± 3.4
	0.15 @ V <sub>GS</sub> = -3.0 V	± 2.9
	0.19 @ V <sub>GS</sub> = -2.7 V	± 2.6

Recommended upgrade: Si9934DY

Lower profile/smaller size—see LITE FOOT® equivalent: Si6943DQ



P-Channel MOSFET



P-Channel MOSFET

**Absolute Maximum Ratings (T<sub>A</sub> = 25°C Unless Otherwise Noted)**

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V <sub>DS</sub>	-20	V	
Gate-Source Voltage	V <sub>GS</sub>	± 12		
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	± 3.4	A
		T <sub>A</sub> = 70°C	± 2.7	
Pulsed Drain Current	I <sub>DM</sub>	± 8		
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	-2.0		
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25°C	2.0	W
		T <sub>A</sub> = 70°C	1.3	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C	

**Thermal Resistance Ratings**

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	62.5	°C/W

Notes

a. Surface Mounted on FR4 Board, t ≤ 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 #1209. A SPICE Model data sheet is available for this product (FaxBack document #5121).

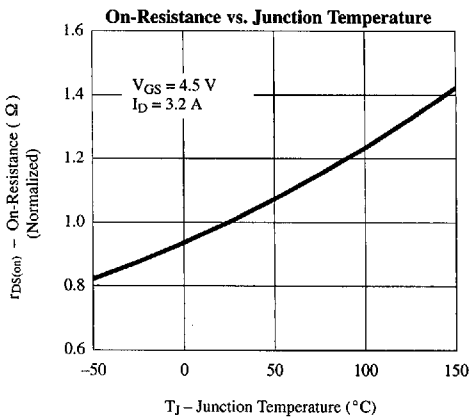
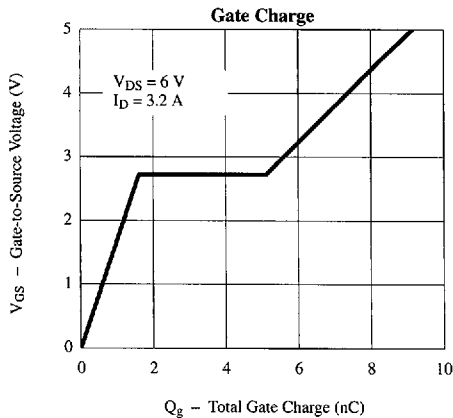
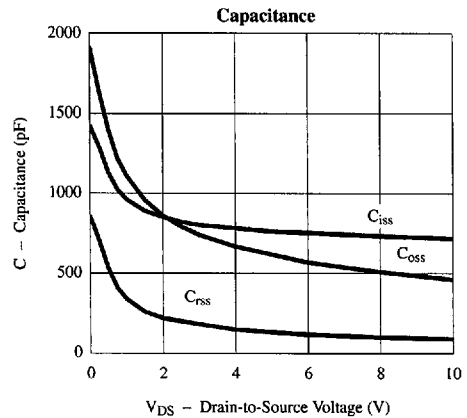
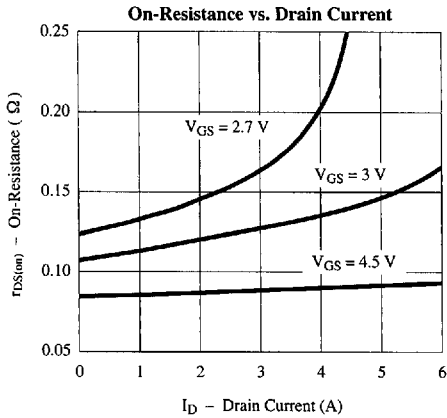
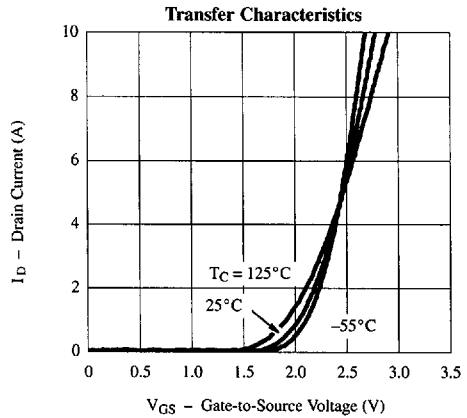
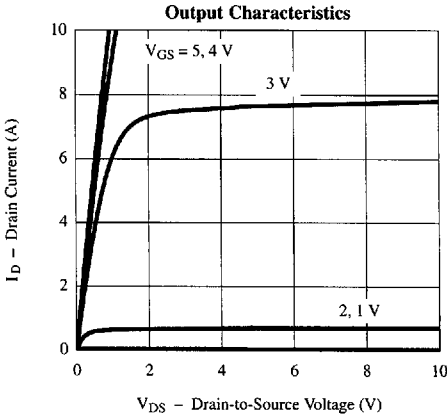
**Specifications ( $T_J = 25^\circ\text{C}$  Unless Otherwise Noted)**

Parameter	Symbol	Test Condition	Min	Typ <sup>a</sup>	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu\text{A}$	-0.8			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -16 \text{ V}, V_{GS} = 0 \text{ V}$			-1	$\mu\text{A}$
		$V_{DS} = -10 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 85^\circ\text{C}$			-3	
On-State Drain Current <sup>b</sup>	$I_{D(on)}$	$V_{DS} \leq -5 \text{ V}, V_{GS} = -4.5 \text{ V}$	-8			A
		$V_{DS} \leq -5 \text{ V}, V_{GS} = -2.7 \text{ V}$	-2			
Drain-Source On-State Resistance <sup>b</sup>	$r_{DS(on)}$	$V_{GS} = -4.5 \text{ V}, I_D = -3.2 \text{ A}$		0.09	0.11	$\Omega$
		$V_{GS} = -3.0 \text{ V}, I_D = -2.0 \text{ A}$		0.120	0.15	
		$V_{GS} = -2.7 \text{ V}, I_D = -1 \text{ A}$		0.135	0.19	
Forward Transconductance <sup>b</sup>	$g_{fs}$	$V_{DS} = -9 \text{ V}, I_D = -3.4 \text{ A}$		8		S
Diode Forward Voltage <sup>b</sup>	$V_{SD}$	$I_S = -2.0 \text{ A}, V_{GS} = 0 \text{ V}$		-0.9	-1.2	V
<b>Dynamic<sup>a</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = -6 \text{ V}, V_{GS} = -4.5 \text{ V}, I_D = -3.2 \text{ A}$		8	20	nC
Gate-Source Charge	$Q_{gs}$			1.6		
Gate-Drain Charge	$Q_{gd}$			3.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -6 \text{ V}, R_L = 6 \Omega$ $I_D \cong -1 \text{ A}, V_{GEN} = -4.5 \text{ V}, R_G = 6 \Omega$		22	40	ns
Rise Time	$t_r$			43	80	
Turn-Off Delay Time	$t_{d(off)}$			35	70	
Fall Time	$t_f$			20	40	
Source-Drain Reverse Recovery Time	$t_{rr}$		$I_F = -2.0 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		75	

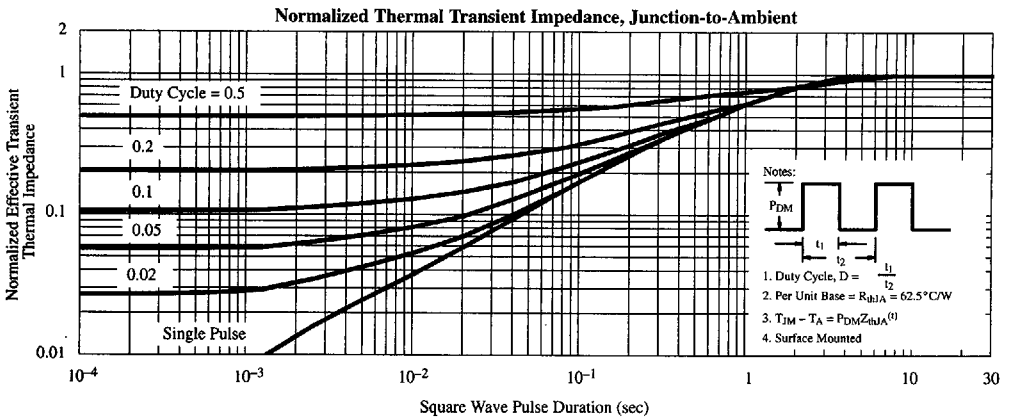
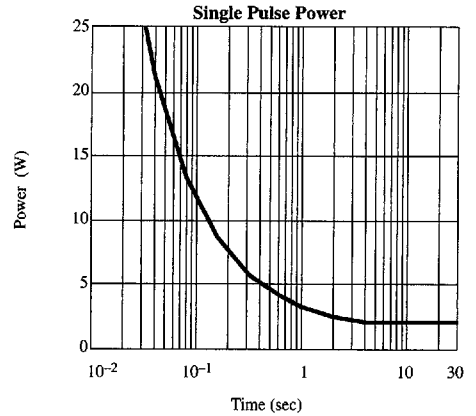
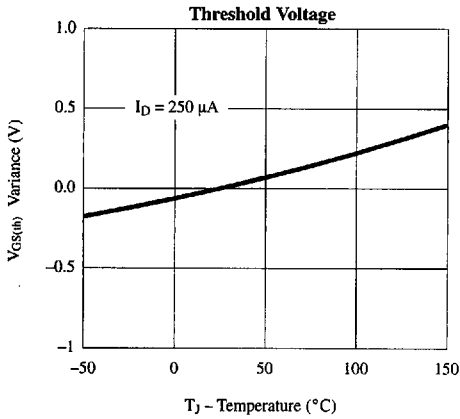
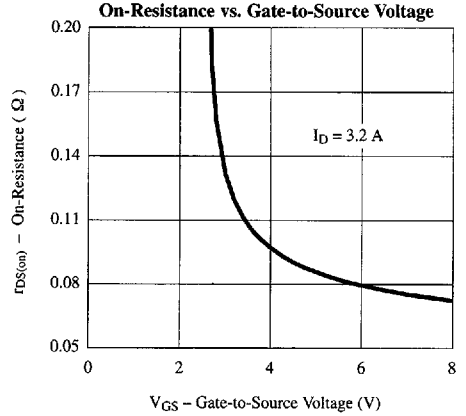
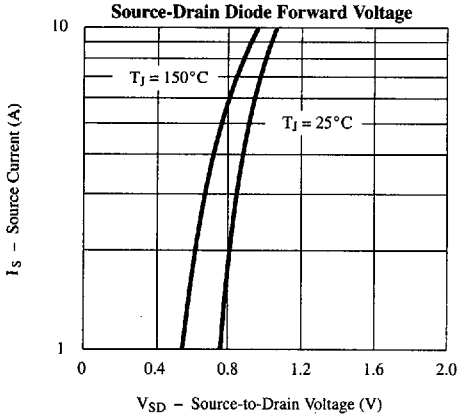
## Notes

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

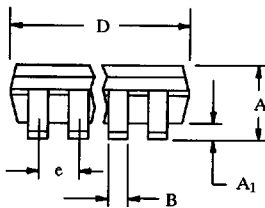
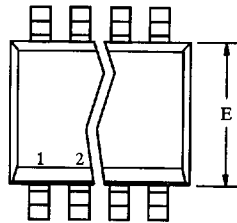
**Typical Characteristics (25°C Unless Otherwise Noted)**



## Typical Characteristics (25°C Unless Otherwise Noted)



### SO Package (Y Suffix), 8-16 Leads



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.75	0.053	0.069
A <sub>1</sub>	0.10	0.20	0.004	0.008
B	0.35	0.45	0.014	0.018
C	0.18	0.23	0.007	0.009
D-8	4.60	5.20	0.181	0.205
D-14	8.35	8.95	0.329	0.352
D-16	9.60	10.20	0.378	0.402
E	3.55	4.05	0.140	0.160
e	1.27 BSC		0.050 BSC	
H	5.70	6.30	0.224	0.248
L	0.60	0.80	0.024	0.031
Θ	0°	8°	0°	8°

