

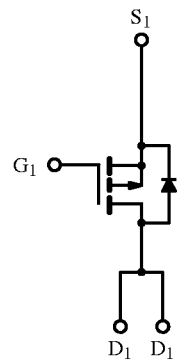
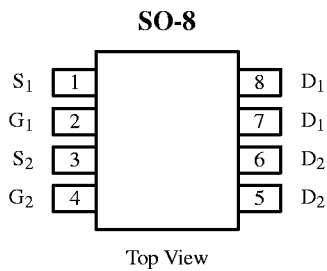
## Dual P-Channel 60-V (D-S), 175°C MOSFET

*New Product*

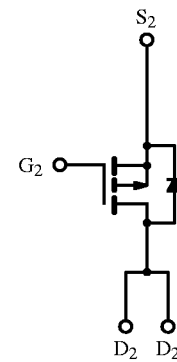
### Product Summary

V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-60	0.17 @ V <sub>GS</sub> = -10 V	±2.6
	0.26 @ V <sub>GS</sub> = -4.5 V	±2.1

**175°C Rated**  
Maximum Junction Temperature  
**TrenchFET™**  
Power MOSFETs



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>	-60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	
Continuous Drain Current (T <sub>J</sub> = 175°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	±2.6
		T <sub>A</sub> = 70°C	±2.2
Pulsed Drain Current	I <sub>DM</sub>	±15	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	-2	
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25°C	2.4
		T <sub>A</sub> = 70°C	1.7
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 175	°C

### Thermal Resistance Ratings

Parameter	Symbol	Typ	Max	Unit
Junction-to-Ambient <sup>a</sup> Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub> R <sub>thJA</sub>	t ≤ 10 sec	62.5	°C/W
		Steady State	93	

Notes

a. Surface Mounted on 1" x 1" FR4 Board

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70759.

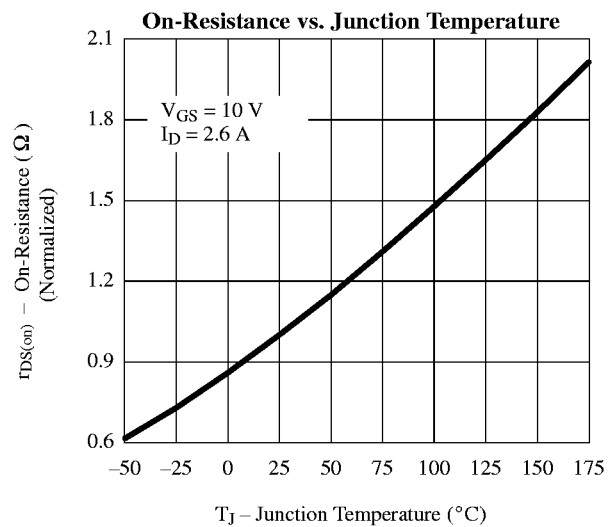
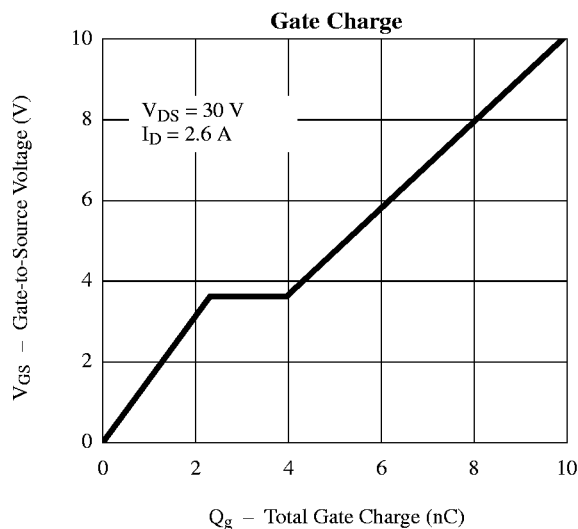
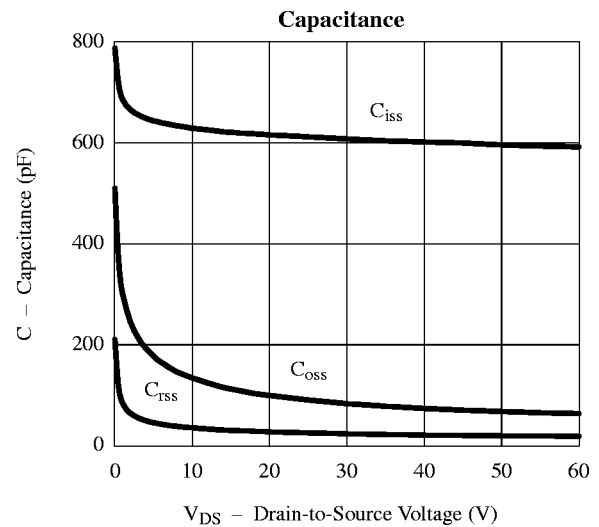
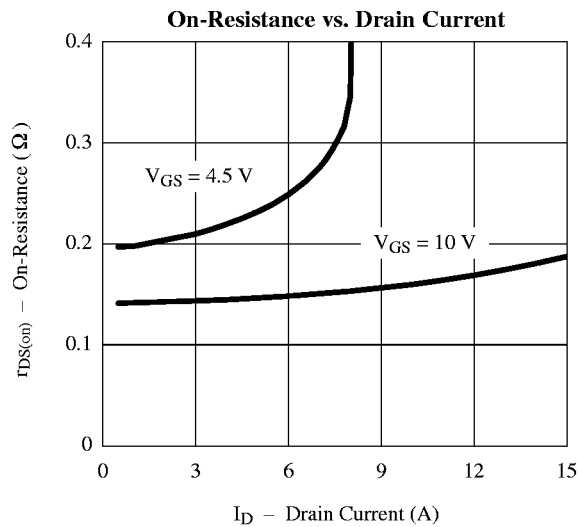
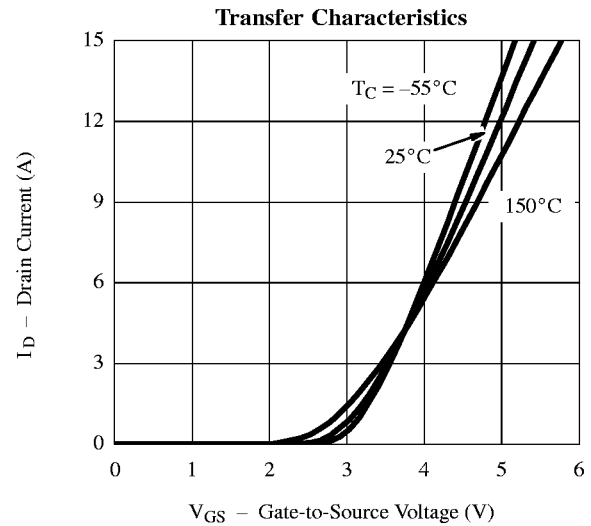
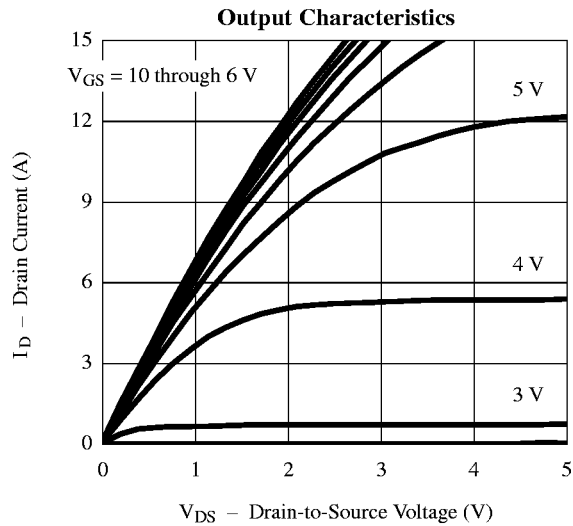

**Specifications ( $T_J = 25^\circ\text{C}$  Unless Otherwise Noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -60\ \text{V}, V_{GS} = 0\ \text{V}$			-1	$\mu\text{A}$
		$V_{DS} = -60\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			-10	
On-State Drain Current <sup>b</sup>	$I_{D(on)}$	$V_{DS} \leq -5\ \text{V}, V_{GS} = -10\ \text{V}$	-15			A
Drain-Source On-State Resistance <sup>b</sup>	$r_{DS(on)}$	$V_{GS} = -10\ \text{V}, I_D = -2.6\ \text{A}$		0.14	0.17	$\Omega$
		$V_{GS} = -4.5\ \text{V}, I_D = -2.1\ \text{A}$		0.20	0.26	
Forward Transconductance <sup>b</sup>	$g_{fs}$	$V_{DS} = -15\ \text{V}, I_D = -2.6\ \text{A}$		5.0		S
Diode Forward Voltage <sup>b</sup>	$V_{SD}$	$I_S = -2.0\ \text{A}, V_{GS} = 0\ \text{V}$			-1.2	V
<b>Dynamic<sup>a</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = -30\ \text{V}, V_{GS} = -10\ \text{V}, I_D = -2.6\ \text{A}$		10	20	nC
Gate-Source Charge	$Q_{gs}$			2.5		
Gate-Drain Charge	$Q_{gd}$			1.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -30\ \text{V}, R_L = 30\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -10\ \text{V}, R_G = 6\ \Omega$		8	20	ns
Rise Time	$t_r$			10	20	
Turn-Off Delay Time	$t_{d(off)}$			23	40	
Fall Time	$t_f$			12	20	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = -2.0\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		50	90	

## Notes

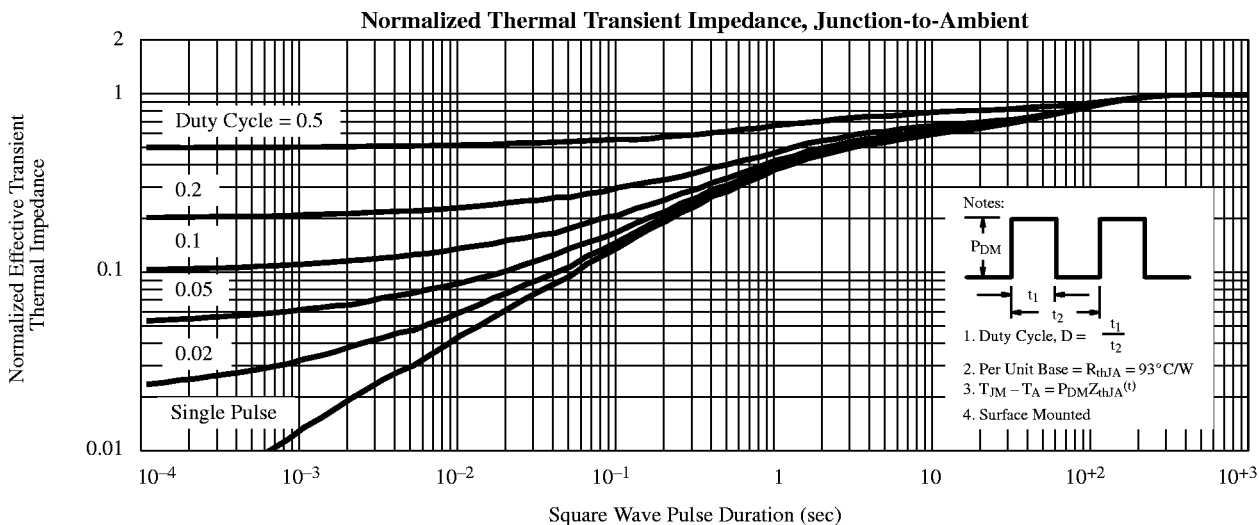
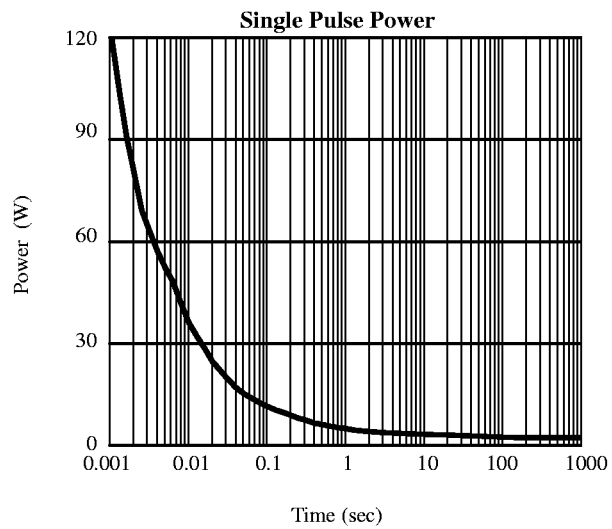
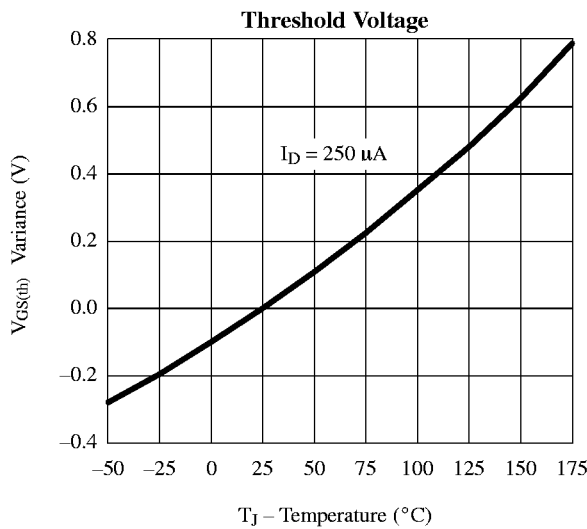
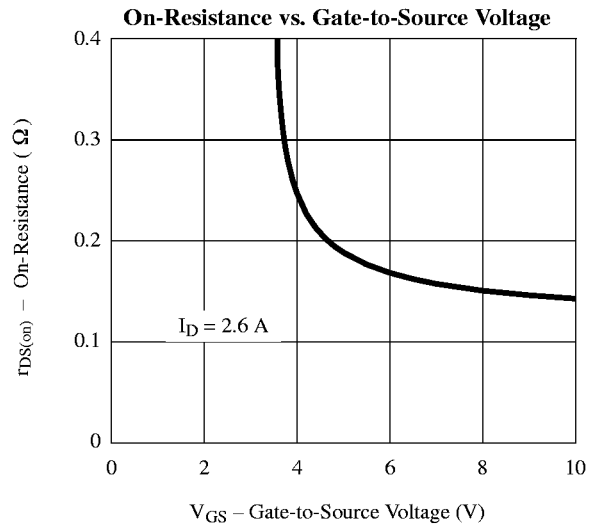
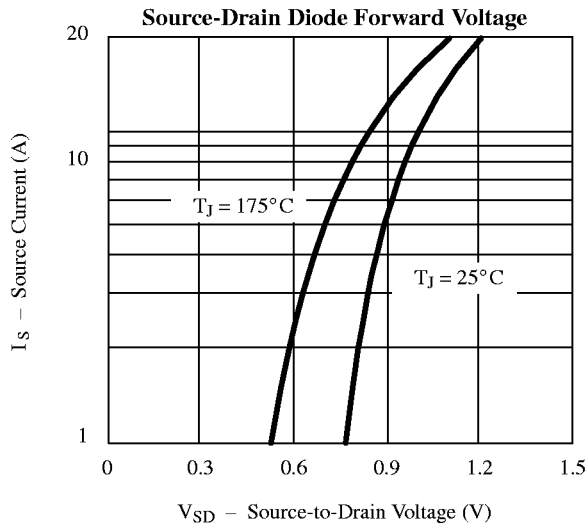
- a. Guaranteed by design, not subject to production testing.  
 b. Pulse test; pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$ .

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

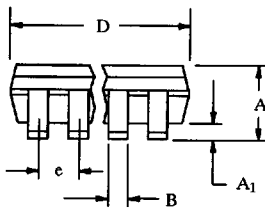
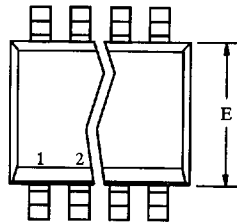




Typical Characteristics (25°C Unless Otherwise Noted)



### 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°

