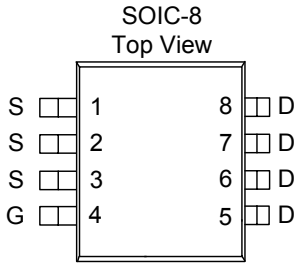
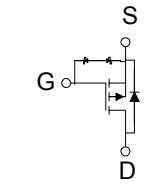
P-Channel 30-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe SOIC-8 saves board space
- Fast switching speed
- High performance trench technology

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
-30	13 @ V_{GS} = -10V	-11.5
	19 @ V_{GS} = -4.5V	-9.3





P-Channel MOSFET

ESD Protected
3000 V

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		**Symbol**	**Maximum**	**Units**
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±25	
Continuous Drain Current[a]	T_A=25°C	I_D	-11.5	A
	T_A=70°C		-9.3	
Pulsed Drain Current[b]		I_{DM}	±50	
Continuous Source Current (Diode Conduction)[a]		I_S	-2.1	A
Power Dissipation[a]	T_A=25°C	P_D	3.1	W
	T_A=70°C		2.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Maximum**	**Units**
Maximum Junction-to-Case[a]	t <= 5 sec	$R_{\theta JC}$	25	°C/W
Maximum Junction-to-Ambient[a]	t <= 5 sec	$R_{\theta JA}$	50	°C/W

Notes

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

b. Pulse width limited by maximum junction temperature

SPECIFICATIONS (T_A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = -250 uA	-30			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 uA	-1			
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±25 V			±1	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24 V, V_{GS} = 0 V			-1	uA
		V_{DS} = -24 V, V_{GS} = 0 V, T_J = 55°C			-5	
On-State Drain Current[A]	$I_{D(on)}$	V_{DS} = -5 V, V_{GS} = -10 V	-50			A
Drain-Source On-Resistance[A]	$r_{DS(on)}$	V_{GS} = -10 V, I_D = -11.5 A			13	mΩ
		V_{GS} = -4.5 V, I_D = -9.3 A			19.0	
Forward Tranconductance[A]	g_{fs}	V_{DS} = -15 V, I_D = -11.5 A		29		S
Diode Forward Voltage	V_{SD}	I_S = 2.5 A, V_{GS} = 0 V		-0.8		V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = -15 V, V_{GS} = -5 V, I_D = -11.5 A		25		nC
Gate-Source Charge	Q_{gs}			11		
Gate-Drain Charge	Q_{gd}			17		
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		2300		pF
Output Capacitance	C_{oss}			600		
Reverse Transfer Capacitance	C_{rss}			300		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15 V, R_L = 6 Ω , I_D = -1 A, VGEN = -10 V		15		nS
Rise Time	t_r			13		
Turn-Off Delay Time	$t_{d(off)}$			100		
Fall-Time	t_f			54		

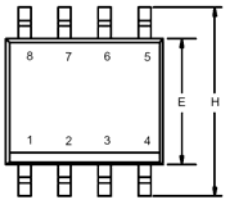
Notes

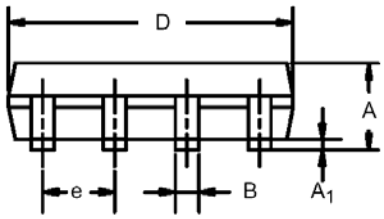
a. Pulse test: PW <= 300us duty cycle <= 2%.

b. Guaranteed by design, not subject to production testing.

Package Information

SO-8: 8LEAD





Dim	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	1.35	1.75	0.053	0.069
A_1	0.10	0.20	0.004	0.008
B	0.35	0.51	0.014	0.020
C	0.19	0.25	0.0075	0.010
D	4.80	5.00	0.189	0.196
E	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
H	5.80	6.20	0.228	0.244
h	0.25	0.50	0.010	0.020
L	0.50	0.93	0.020	0.037
q	0°	8°	0°	8°