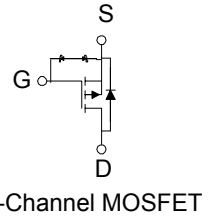
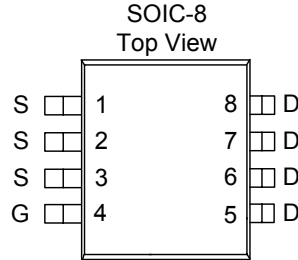


**P-Channel 30-V (D-S) MOSFET**

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.

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> m(Ω)	I <sub>D</sub> (A)
-30	13 @ V <sub>GS</sub> = -10V	-11.5
	19 @ V <sub>GS</sub> = -4.5V	-9.3



- 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



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V <sub>DS</sub>	-30	V
Gate-Source Voltage		V <sub>GS</sub>	±25	
Continuous Drain Current <sup>a</sup>	T <sub>A</sub> =25°C	I <sub>D</sub>	-11.5	A
	T <sub>A</sub> =70°C		-9.3	
Pulsed Drain Current <sup>b</sup>		I <sub>DM</sub>	±50	
Continuous Source Current (Diode Conduction) <sup>a</sup>		I <sub>S</sub>	-2.1	A
Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	P <sub>D</sub>	3.1	W
	T <sub>A</sub> =70°C		2.3	
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Case <sup>a</sup>	t ≤ 5 sec	R <sub>θJC</sub>	25	°C/W
Maximum Junction-to-Ambient <sup>a</sup>	t ≤ 5 sec	R <sub>θJA</sub>	50	°C/W

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

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

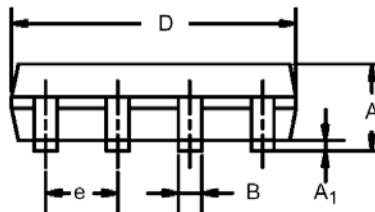
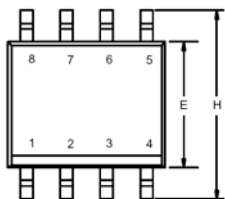
## Notes

- Pulse test: PW  $\leq$  300us duty cycle  $\leq$  2%.
- Guaranteed by design, not subject to production testing.

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Package Information

SO-8: 8LEAD



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	0.51	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°

