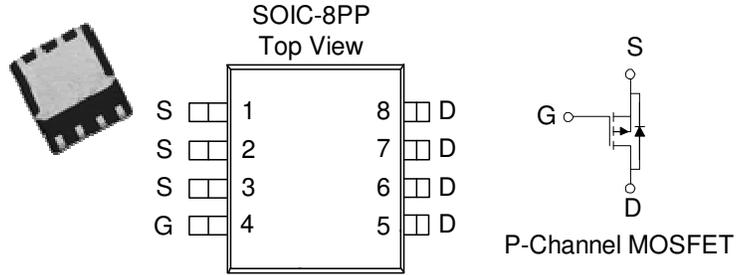


**P-Channel 30-V (D-S) MOSFET**

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		
$V_{DS}$ (V)	$r_{DS(on)}$ m( $\Omega$ )	$I_D$ (A)
-30	9 @ $V_{GS} = -10V$	-20
	13 @ $V_{GS} = -4.5V$	-17

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



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current <sup>a</sup>	$T_A=25^\circ C$	-20	A
	$T_A=70^\circ C$	-16	
Pulsed Drain Current <sup>b</sup>	$I_{DM}$	$\pm 50$	
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	-2.1	A
Power Dissipation <sup>a</sup>	$T_A=25^\circ C$	5.0	W
	$T_A=70^\circ C$	3.2	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient <sup>a</sup>	$t \leq 10$ sec	25	$^\circ C/W$
	Steady State	65	$^\circ C/W$

Notes

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

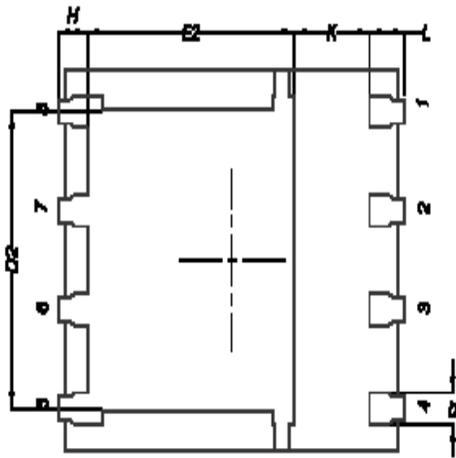
SPECIFICATIONS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = -250 μA	-30			V
Gate-Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-1			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±25 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -24 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -24 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55°C			-5	
On-State Drain Current <sup>A</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -10 V	-50			A
Drain-Source On-Resistance <sup>A</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -2 A			9	mΩ
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2 A			13	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -2 A		29		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = 2 A, V <sub>GS</sub> = 0 V		-0.8		V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -15 V, V <sub>GS</sub> = -5 V, I <sub>D</sub> = -2 A		25		nC
Gate-Source Charge	Q <sub>gs</sub>			11		
Gate-Drain Charge	Q <sub>gd</sub>			17		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -15 V, R <sub>L</sub> = 6 Ω, I <sub>D</sub> = -1 A, V <sub>GEN</sub> = -10 V		15		nS
Rise Time	t <sub>r</sub>			13		
Turn-Off Delay Time	t <sub>d(off)</sub>			100		
Fall-Time	t <sub>f</sub>			54		

## Notes

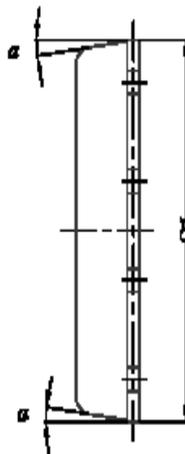
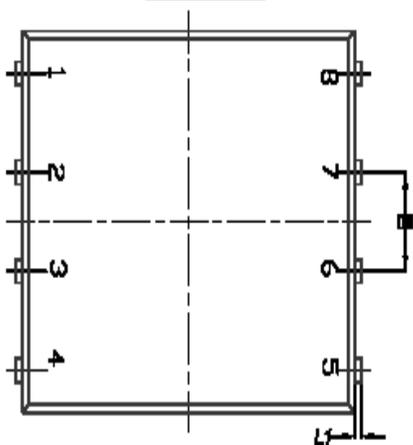
- Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

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# Package Information



BACKSIDE VIEW



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
b	0.38	0.41	0.51
C	0.20	0.25	0.30
D1	4.90	4.90	5.00
D2	3.81	3.81	3.98
E	5.00	6.00	6.10
E1	5.70	6.75	5.00
E2	3.38	3.58	3.78
Ø	1.27 BSC		
H	0.41	0.51	0.51
K	1.10	-	-
L	0.51	0.51	0.71
L1	0.08	0.13	0.20
α	0°	-	12°