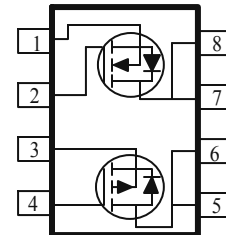


**P & N-Channel 30-V (D-S) MOSFET**

These miniature surface mount MOSFETs utilize High Cell Density process. Low  $r_{DS(on)}$  assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

- Low  $r_{DS(on)}$  Provides Higher Efficiency and Extends Battery Life
- Miniature SO-8 Surface Mount Package Saves Board Space
- High power and current handling capability
- Low side high current DC-DC Converter applications

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> m(Ω)	I <sub>D</sub> (A)
30	40 @ V <sub>GS</sub> = 4.5V	6.0
	28 @ V <sub>GS</sub> = 10V	7.0
-26.5	80 @ V <sub>GS</sub> = -2.5V	-4.0
	52 @ V <sub>GS</sub> = -4.5V	-5.2



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	N-Channel	P-Channel	Units
Drain-Source Voltage		V <sub>DS</sub>	30	-26.5	V
Gate-Source Voltage		V <sub>GS</sub>	±20	±12	
Continuous Drain Current <sup>a</sup>	T <sub>A</sub> =25°C	I <sub>D</sub>	7	-5.2	A
	T <sub>A</sub> =70°C		5.6	-6.8	
Pulsed Drain Current <sup>b</sup>		I <sub>DM</sub>	20	-20	
Continuous Source Current (Diode Conduction) <sup>a</sup>		I <sub>S</sub>	1.3	-1.3	A
Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	P <sub>D</sub>	2.1	2.1	W
	T <sub>A</sub> =70°C		1.3	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	Maximum	Units
Maximum Junction-to-Case <sup>a</sup>	t ≤ 5 sec	R <sub>θJC</sub>	40	°C/W
Maximum Junction-to-Ambient <sup>a</sup>	t ≤ 5 sec	R <sub>θJA</sub>	60	°C/W

Notes

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

SPECIFICATIONS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Conditions	Limits				Unit
			Ch	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 uA	N	30			V
		V <sub>GS</sub> = 0 V, I <sub>D</sub> = -250 uA	P	-26			
Gate-Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 250 uA	N	1			V
		V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = -250 uA	P	-1			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> = -12 V, V <sub>DS</sub> = 0 V	P			±100	nA
		V <sub>GS</sub> = 20 V, V <sub>DS</sub> = 0 V	N			±100	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -21.2 V, V <sub>GS</sub> = 0 V	P			-1	uA
		V <sub>DS</sub> = 24 V, V <sub>GS</sub> = 0 V	N			1	
On-State Drain Current <sup>A</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 10 V	N	20			A
		V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	P	-20			
Drain-Source On-Resistance <sup>A</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 7 A	N			28	mΩ
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 6 A				40	
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -5 A	P			52	
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -4 A				80	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 7 A	N		25		S
		V <sub>DS</sub> = -15 V, I <sub>D</sub> = -5 A	P		10		
<b>Dynamic</b>							
Total Gate Charge	Q <sub>g</sub>	N-Channel V <sub>DS</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =7A P-Channel V <sub>DS</sub> =-15V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-5A	N		4		nC
			P		25		
Gate-Source Charge	Q <sub>gs</sub>		N		1.1		
			P		2.4		
Gate-Drain Charge	Q <sub>gd</sub>		N		1.4		
			P		3.9		
<b>Switching</b>							
Turn-On Delay Time	t <sub>d(on)</sub>	N-Channeel V <sub>DD</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =1A , R <sub>GEN</sub> =6Ω, P-Channel V <sub>DD</sub> =-15V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-1A RGEN=6Ω	N		8		nS
			P		7		
Rise Time	t <sub>r</sub>		N		5		
			P		13		
Turn-Off Delay Time	t <sub>d(off)</sub>		N		23		
			P		14		
Fall-Time	t <sub>f</sub>		N		3		
			P		9		

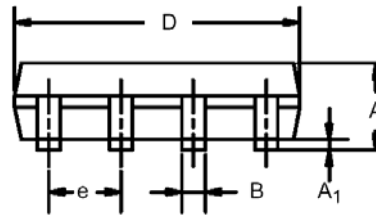
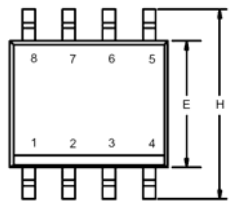
Notes

- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. 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°

