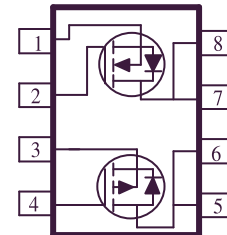


P & N-Channel 30-V (D-S) MOSFET

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	42 @ $V_{GS} = 4.5V$	5.8
	28 @ $V_{GS} = 10V$	7.1
-30	59 @ $V_{GS} = -4.5V$	-4.9
	39 @ $V_{GS} = -10V$	-6.0

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	N-Channel	P-Channel	Units
Drain-Source Voltage		V_{DS}	30	-30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current ^a	$T_A = 25^\circ C$	I_D	7.1	-6.0	A
	$T_A = 70^\circ C$		5.8	-4.9	
Pulsed Drain Current ^b		I_{DM}	20	-20	
Continuous Source Current (Diode Conduction) ^a		I_S	1.3	-1.3	A
Power Dissipation ^a	$T_A = 25^\circ C$	P_D	2.1	2.1	W
	$T_A = 70^\circ C$		1.3	1.3	
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 ^a	$t \leq 10$ sec	$R_{\theta JA}$	62.5	$^\circ C/W$
	Steady State		110	$^\circ C/W$

Notes

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

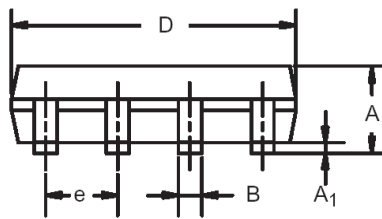
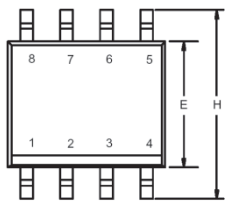
SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)								
Parameter	Symbol	Test Conditions	Limits				Unit	
			Ch	Min	Typ	Max		
Static								
Gate-Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250 uA	N	1			V	
		V _{GS} = V _{DS} , I _D = -250 uA	P	-1.0				
Gate-Body Leakage	I _{GSS}	V _{GS} = -20 V, V _{DS} = 0 V	P			±100	nA	
		V _{GS} = 20 V, V _{DS} = 0 V	N			±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24 V, V _{GS} = 0 V	P			-1	uA	
		V _{DS} = 24 V, V _{GS} = 0 V	N			1		
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N	20			A	
		V _{DS} = -5 V, V _{GS} = -10 V	P	-20				
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 10 V, I _D = 7.1 A	N			28	mΩ	
		V _{GS} = 4.5 V, I _D = 5.8 A				42		
		V _{GS} = -10 V, I _D = -6 A	P			39		
		V _{GS} = -4.5 V, I _D = -4.9 A				59		
Forward Tranconductance ^A	g _{fs}	V _{DS} = 15 V, I _D = 6.9 A	N		25		S	
		V _{DS} = -15 V, I _D = -5.2 A	P		10			
Dynamic								
Total Gate Charge	Q _g	N-Channel V _{DS} =15V, V _{GS} =10V, I _D =6.9A P-Channel V _{DS} =-15V, V _{GS} =-10V, I _D =-5.2A	N		4.0		nC	
Gate-Source Charge	Q _{gs}		P		10			
			N		1.1			
			P		2.2			
Gate-Drain Charge	Q _{gd}		N		1.4			
			P		1.7			
Turn-On Delay Time	t _{d(on)}	N-Chaneel V _{DD} =15V, V _{GS} =10V, I _D =1A , R _{GEN} =6Ω, P-Channel V _{DD} =-15V, V _{GS} =-10V, I _D =-1A R _{GEN} =6Ω	N		8		nS	
Rise Time	t _r		P		10			
			N		5			
			P		2.8			
Turn-Off Delay Time	t _{d(off)}		N		23			
			P		53.6			
Fall-Time	t _f		N		3			
			P		46			

Notes

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

