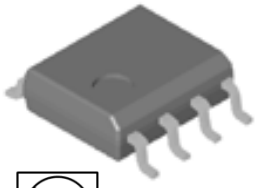
Dual N-Channel 30-V (D-S) MOSFET

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 cordl telephones.

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

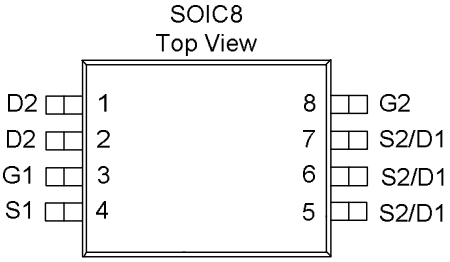
PRODUCT SUMMARY		
FET#	**$r_{DS(on)}$ m(Ω)**	**I_D (A)**
1	19 @ V_{GS} = 4.5V	8.4
	15 @ V_{GS} = 10V	9.5
2	23 @ V_{GS} = 4.5V	7.7
	15 @ V_{GS} = 10V	9.5



Pb-free

RoHS COMPLIANT

HALOGEN FREE



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		**Symbol**	**FET#1**	**FET#1**	**Units**
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	20	20	
Continuous Drain Current[a]	T_A=25°C	I_D	9.5	9.5	A
	T_A=70°C		7.7	7.7	
Pulsed Drain Current[b]		I_{DM}	40	40	
Continuous Source Current (Diode Conduction)[a]		I_S	4.5	4.5	A
Power Dissipation[a]	T_A=25°C	P_D	2.1	2.1	W
	T_A=70°C		1.3	1.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Maximum**	**Units**
Maximum Junction-to-Ambient[a]	t <= 10 sec	$R_{\theta JA}$	62.5	°C/W
	Steady-State		110	°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**
			FET#	**Min**	**Typ**	**Max**	
Static							
Gate-Threshold Voltage	$V_{GS(th)}$	VGS = VDS, ID = 250 uA	1	1			V
		VGS = VDS, ID = 250 uA	2	1			
Gate-Body Leakage	I_{GSS}	V_{GS} = 20 V, V_{DS} = 0 V	1			±100	nA
		V_{GS} = 20 V, V_{DS} = 0 V	2			±100	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24 V, V_{GS} = 0 V	1			1	uA
		V_{DS} = 24 V, V_{GS} = 0 V	2			1	
On-State Drain Current[A]	$I_{D(on)}$	V_{DS} = 5 V, V_{GS} = 10 V	1	40			A
		V_{DS} = -5 V, V_{GS} = -10 V	2	40			
Drain-Source On-Resistance[A]	$r_{DS(on)}$	VGS = 10 V, ID = 2 A	1			15	mΩ
		VGS = 4.5 V, ID = 2 A				19	
		VGS = 10 V, ID = 2 A	2			15	
		VGS = 4.5 V, ID = 2 A				23	
Diode Forward Voltage	V_{SD}	I_S = 2A	1		0.8		V
		I_S = -2A	2		0.8		
Forward Tranconductance[A]	g_{fs}	V_{DS} = 15 V, I_D = 2 A	1		64		S
		V_{DS} = 15 V, I_D = 2 A	2		64		
Dynamic							
Total Gate Charge	Q_g	V_{DS}=15V, V_{GS}=4.5V, I_D=2A	1		3		nC
			2		3		
Gate-Source Charge	Q_{gs}		1		1		
			2		1		
Gate-Drain Charge	Q_{gd}		1		1		
			2		1		
Turn-On Delay Time	$t_{d(on)}$	N-Chaneel V_{DD}=15V, VGS=10V, ID=1A , R_{GEN}=25Ω, P-Channel VDD=-15V, VGS=-10V, ID=-1A RGEN=15Ω	1		5		nS
			2		5		
Rise Time	t_r		1		5		
			2		5		
Turn-Off Delay Time	$t_{d(off)}$		1		16		
			2		16		
Fall-Time	t_f		1		7		
			2		7		

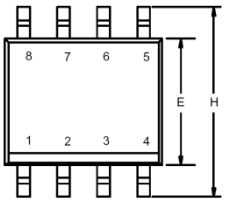
Notes

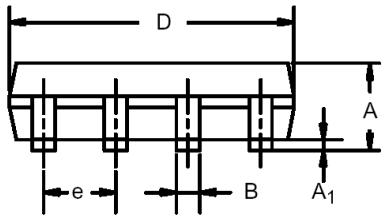
a. Pulse test: PW <= 300us duty cycle <= 2%.

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°