MSN4920

Preliminary Datasheet

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

FEATURES

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

PRODUCTY SUMMARY			
V_{DS}	$R_{DS(on)}$ m(Ω)		I_D(A)
30	30	Rdson @10V	6.4
	50	Rdson @4.5V	5.0

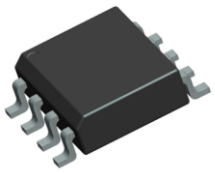
Application

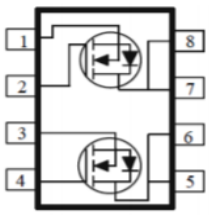
- Portable Devices
- Consumer Electronics
- Consumer Electronics

Mechanical

- Case: SOP-8-Dual Package

SOP-8-Dual





Packing Information

Package	Packing
SOP-8-Dual	3K/13" Reel

Maximum Ratings (T_A=25°C unless otherwise specified)			
Parameter	**Symbol**	**Limit**	**Unit**
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current [1)]	I_D	5	A
Maximum Power Dissipation	P_D	1.2	W
Pulsed Drain Current [2)]	I_{DM}	20	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

Typical Thermal Resistance			
Parameter	**Symbol**	**Limit**	**Unit**
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	110	°C/W

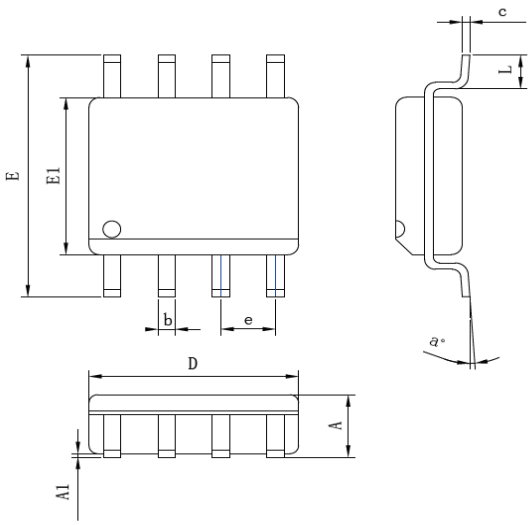
Note:
RθJA is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

Electrical Characteristics (T_A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	**Symbol**	**Test Condition**	**Limits**			**Unit**
			Min	**Typ**	**Max**	
Static						
Drain-Source Breakdown Voltage	B_{VDSS}	VGS = 0V, I_D =250uA	30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS, I_D=250uA	1	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10.0V, I_D=6.4A		21	30	mΩ
		VGS=4.5V, ID=5.0A		35	50	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	VDS=30V, VGS=0V			1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±100	nA
Dynamic [3]						
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=4.5A, V_{GS}=10V (Note 1,2)	-	4	-	nC
Gate-Source Charge	Q_{gs}	VDS=-15V, ID=4.5A, VGS=4.5V (Note 1,2)	-	1.4	-	nC
Gate-Drain Charge	Q_{gd}	VDS=-15V, ID=4.5A, VGS=4.5V (Note 1,2)	-	2.1	-	nC
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHZ	-	360	-	pF
Output Capacitance	C_{oss}		-	56	-	pF
Reverse Transfer Capacitance	C_{rss}		-	46	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=2.25A, V_{GS}=-10V,RG=10Ω (Note 1,2)	-	3	-	ns
Turn-On Rise Time	t_r		-	6	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	17	-	ns
Turn-Off Fall Time	t_f		-	5	-	ns
Drain-Source Diode						
Diode Forward Voltage	V_{SD}	I_S=-0.8A, V_{GS}=0V	-	-	1.2	V

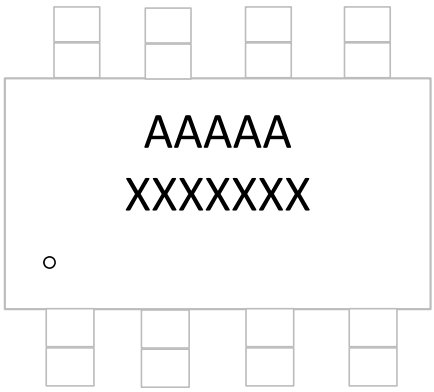
Note:
1. Pulse width<300us, Duty cycle<2%
2. Fused current that based on wire numbers and diameter
3. Guaranteed by design, not subject to production testing.

Package Outline Dimensions (inches and millimeters)

SOP-8				
SYMBOL	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	-	1.75		0.069
A1	0.10	0.23	0.004	0.009
b	0.35	0.48	0.014	0.019
c	0.19	0.25	0.007	0.010
D	4.70	5.10	0.185	0.201
E	5.80	6.20	0.228	0.244
E1	3.70	4.10	0.146	0.161
e	1.27bsc			
L	0.50	0.80	0.020	0.031
a °	0 °	8 °	0 °	8 °



Marking Information



First line:

AAAAA = Product number

XXXXXXX = Tracking number

Third line:Gate Pin Point