Preliminary Datasheet

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

FEATURES

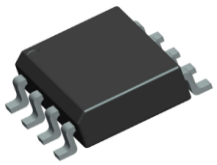
- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

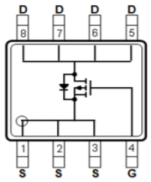
PRODUCTY SUMMARY			
V_{DS}	$R_{DS(on)}$ m(Ω)		I_D(A)
30	9	Rdson @10V	12
	14	Rdson @4.5V	10

Application

- Portable Devices
- Consumer Electronics

SOP-8-Single





Mechanical

- Case: SOP-8-Single Package

Packing Information

Package	Packing
SOP-8-Single	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	12	A
Maximum Power Dissipation	P_D	1.8	W
Pulsed Drain Current [2)]	I_{DM}	48	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

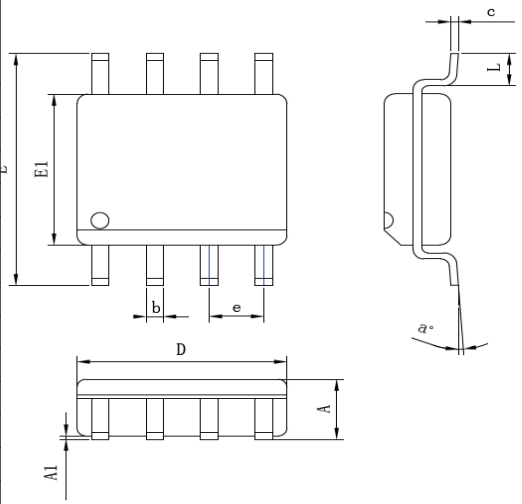
Note:
RθJA is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

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}	V_{GS} = 0V, I_D =250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1.00	-	3.00	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10.0V, I_D=12.0A	-	8	9	mΩ
		V_{GS}=4.5V, I_D=10.0A	-	12	14	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=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=10A, V_{GS}=4.5 (Note 2,3)	-	6.9	-	nC
Gate-Source Charge	Q_{gs}		-	2.7	-	nC
Gate-Drain Charge	Q_{gd}		-	1.8	-	nC
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHZ	-	781	-	pF
Output Capacitance	C_{oss}		-	158	-	pF
Reverse Transfer Capacitance	C_{rss}		-	136	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=10A, V_{GS}=10V,RG=10Ω	-	5.4	-	ns
Turn-On Rise Time	t_r		-	86	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	20	-	ns
Turn-Off Fall Time	t_f		-	10	-	ns
Drain-Source Diode						
Maximum Continuous Drain-Source	I_S	-	-	-	10	A
Diode Forward Voltage	V_{SD}	I_S=-0.8A, V_{GS}=0V	-	-	1.2	V

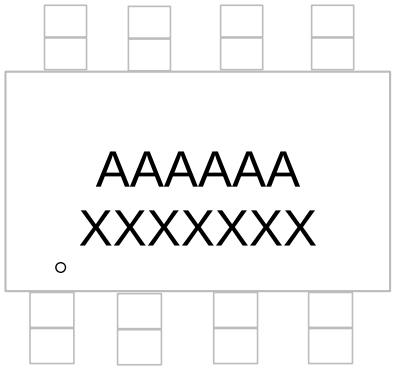
NOTES :
1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
4. The maximum current rating is package limited.
5. R_{QJA} 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 inch2 with 2oz.square pad of copper.
6. The test condition is L=1mH, I_{AS}=10A, V_{DD}=15V, VGS=10V.
7. 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