Preliminary Datasheet

N-Channel 20-V (D-S) MOSFET

FEATURES

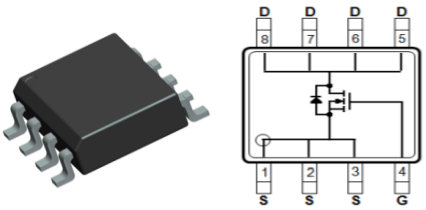
- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

PRODUCTY SUMMARY			
V_{DS}	$R_{DS(on)}$ m(Ω)		I_D(A)
20	12	Rdson @4.5V	11.6
	15	Rdson @2.5V	10.0

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}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current [1)]	I_D	11.6	A
Maximum Power Dissipation	P_D	1.8	W
Pulsed Drain Current [2)]	I_{DM}	46.4	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

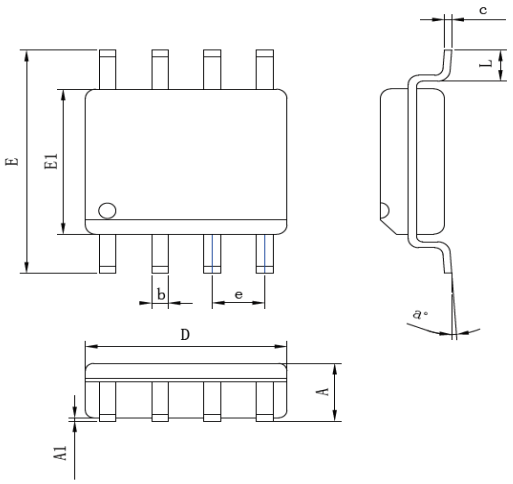
Note:
RθJA is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

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	20			V
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS, I_D=250uA	0.40	0.63	1.00	V
Drain-Source On-State Resistance	$R_{DS(on)}$	VGS=4.5V, ID=11.6A	-	10	12	mΩ
		VGS=2.5V, ID=10.0A	-	12	15	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	VDS=20V, VGS=0V			1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V			±100	nA
Dynamic [3]						
Total Gate Charge	Q_g	V_{DS}=10V, I_D=11A, V_{GS}=4.5V	-	16.0	25.60	nC
Gate-Source Charge	Q_{gs}		-	2.5	-	nC
Gate-Drain Charge	Q_{gd}		-	4.5	-	nC
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1.0MHZ	-	1400	2240	pF
Output Capacitance	C_{oss}		-	170	-	pF
Reverse Transfer Capacitance	C_{rss}		-	135	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=11V, I_D=1A, V_{GS}=5V,RG=3.3Ω	-	10	-	ns
Turn-On Rise Time	t_r		-	13	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	28	-	ns
Turn-Off Fall Time	t_f		-	7	-	ns
Drain-Source Diode						
Maximum Continuous Body Diode Forward Current	I_S	VG=VD=0V , Force Current	-	-	1.2	A
Diode Forward Voltage	V_{SD}	IS=1.0A, VGS=0V	-	-	1.5	V

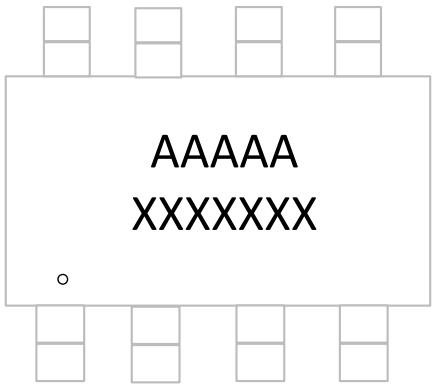
NOTES :
1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
4. The maximum current rating is package limited.
5. RQJA is the sum of the junctiontocase and casetoambient 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. 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