

### N+P-Channel 30-V (D-S) MOSFET

#### FEATURES

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

#### Application

- Portable Devices
- Consumer Electronics

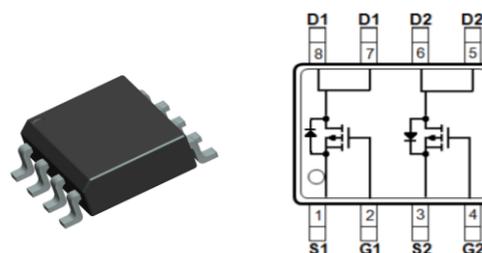
#### Mechanical

- Case: SOP-8-Dual Package

#### Packing Information

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

PRODUCTY SUMMARY			
V <sub>DS</sub>	R <sub>DS(on)</sub> m(Ω)		I <sub>D</sub> (A)
	30	30	
50		Rdson @4.5V	5.0
-30	65	Rdson @-10V	-4.0
	90	Rdson @-4.5V	-3.8



#### Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Limit		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V <sub>DS</sub>	30	-30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	±20	V
Continuous Drain Current <sup>1)</sup>	I <sub>D</sub>	6	-4	A
Maximum Power Dissipation	P <sub>D</sub>	1.2	1.1	W
Pulsed Drain Current <sup>2)</sup>	I <sub>DM</sub>	24	-16	A
Junction and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	-55 to 150	°C

#### Typical Thermal Resistance

Parameter	Symbol	Limit	Unit
Junction-to-Ambient Thermal Resistance	R <sub>θJA</sub>	110	°C/W

#### Note:

R<sub>θJA</sub> 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 <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
<b>N-Channel Static</b>						
Drain-Source Breakdown Voltage	B <sub>VDSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250uA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	1	-	2.5	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10.0V, I <sub>D</sub> =6.0A	-	21	30	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A	-	35	50	mΩ
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V	-	-	1.0	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	± 100	nA
<b>Drain-Source Diode</b>						
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-0.8A, V <sub>GS</sub> =0V	-	-	1.2	V

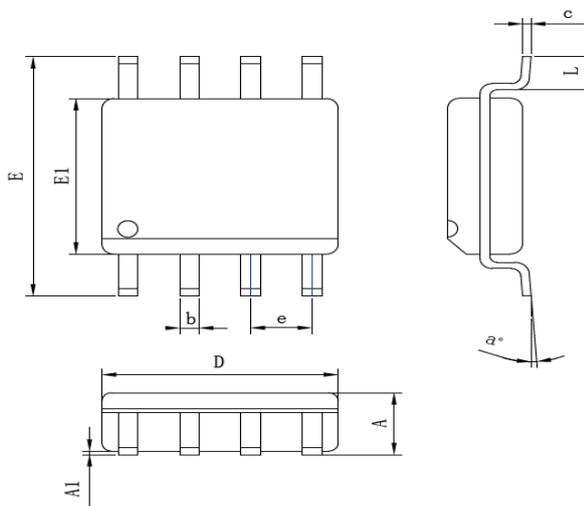
Electrical Characteristics (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
<b>P-Channel Static</b>						
Drain-Source Breakdown Voltage	B <sub>VDSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250uA	-30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-1.00	-	-2.10	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10.0V, I <sub>D</sub> =-4.0A	-	52	65	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3.8A	-	66	90	mΩ
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V	-	-	-1.0	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	± 100	nA
<b>Drain-Source Diode</b>						
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-0.8A, V <sub>GS</sub> =0V	-	-	-1.2	V

**NOTES :**

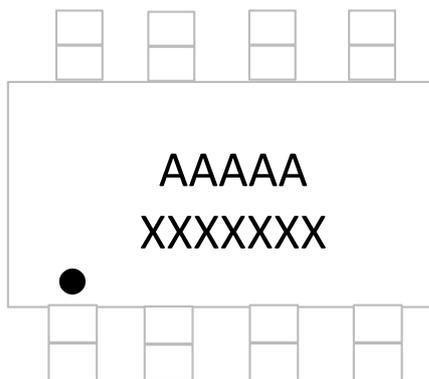
1. Pulse width<300us, Duty cycle<2%
2. Essentially independent of operating temperature typical characteristics.
3. R<sub>QJA</sub> is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper
4. The maximum current rating is package limited
5. Guaranteed by design, not subject to production testing

## Package Outline Dimensions ( inches and millimeters)

<b>SOP-8</b>				
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

Motive reserves the right to make changes without further notice to any products herein. Motive makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motive assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in Motive data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motive does not convey any license under its patent rights nor the rights of others. Motive products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motive product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motive products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motive and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motive was negligent regarding the design or manufacture of the part.