

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

#### FEATURES

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

#### Application

- Portable Devices
- Consumer Electronics

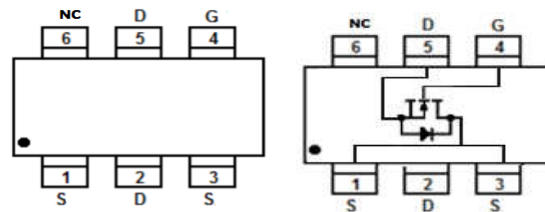
#### Mechanical

- Case: SOT-23-6 Package

#### PRODUCTY SUMMARY

$V_{DS}$	$R_{DS(on)}$ m( $\Omega$ )		$I_D$ (A)
20	10	@ $V_{GS}=4.5V$	5.5
	11	@ $V_{GS}=3.8V$	5.5
	12	@ $V_{GS}=2.5V$	5.0

#### SOT-23-6



#### Packing Information

Package	Packing
SOT-23-6	3Kpcs / 7" Reel

#### Maximum Ratings ( $T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current <sup>1)</sup>	$I_D$	7.2	A
Maximum Power Dissipation	$P_D$	0.5	W
Pulsed Drain Current <sup>2)</sup>	$I_{DM}$	28.8	A
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^{\circ}C$

#### Typical Thermal Resistance

Parameter	Symbol	Limit	Unit
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	100	$^{\circ}C/W$

#### Note:

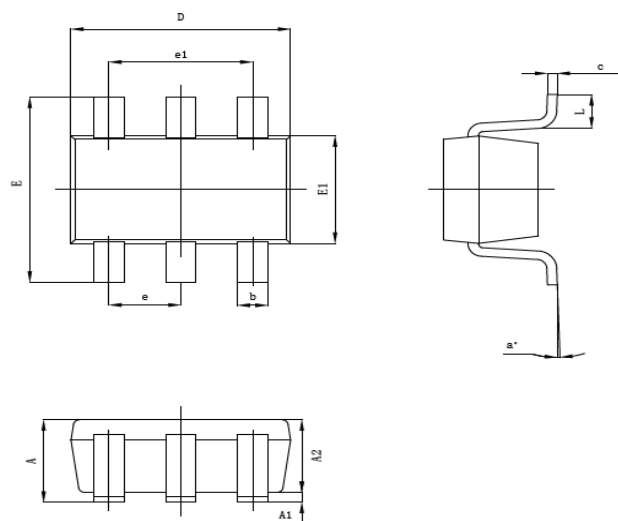
$R_{\theta JA}$  is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

Electrical Characteristics (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	B <sub>VDSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250uA	20	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	0.40	-	1.00	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.5A		7	10	mΩ
		V <sub>GS</sub> =3.8V, I <sub>D</sub> =5.5A		8.5	11	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =5.0A		9.4	12	mΩ
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> =0V	-	-	1.0	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±12V, V <sub>DS</sub> =0V			±100	nA
Drain-Source Diode						
Maximum Continuous Body Diode Forward Current	I <sub>S</sub>	-	-	-	1.2	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.0A, V <sub>GS</sub> =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 T<sub>J</sub>(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial T<sub>J</sub> =25°C.
4. The maximum current rating is package limited.
5. RQJA 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<sup>2</sup> with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

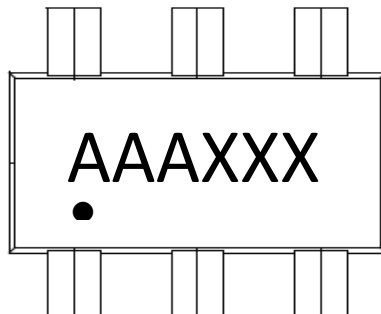
## Package Outline Dimensions ( inches and millimeters)



## SOT-23-6

SYMBOL	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	-	1.350	-	0.053
A1	0.040	-	0.002	-
A2	0.900	1.300	0.035	0.051
b	0.350	0.480	0.014	0.019
c	0.080	0.210	0.003	0.008
D	2.720	3.120	0.107	0.123
E	2.600	3.000	0.102	0.118
e	1.80BSC		0.070BSC	
e1	1.90BSC		0.074BSC	
L	0.300	0.600	0.012	0.024
a°	0°	8°	0°	8°

## Marking Information



AAA = Product number  
XXX = Tracking number

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