

N-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: SOT-23 Package

Packing Information

Package	Packing
SOT-23	3Kpcs / 7" Reel

PRODUCTY SUMMARY

V_{DS}	$R_{DS(on)}$ m(Ω)		I_D (A)
30	30	Rdson @10V	4.2
	50	Rdson @4.5V	3.3

SOT-23

Maximum Ratings ($T_A=25^{\circ}\text{C}$ 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	4.2	A
Maximum Power Dissipation	P_D	1.6	W
Pulsed Drain Current ²⁾	I_{DM}	16.8	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

Typical Thermal Resistance

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

Note:

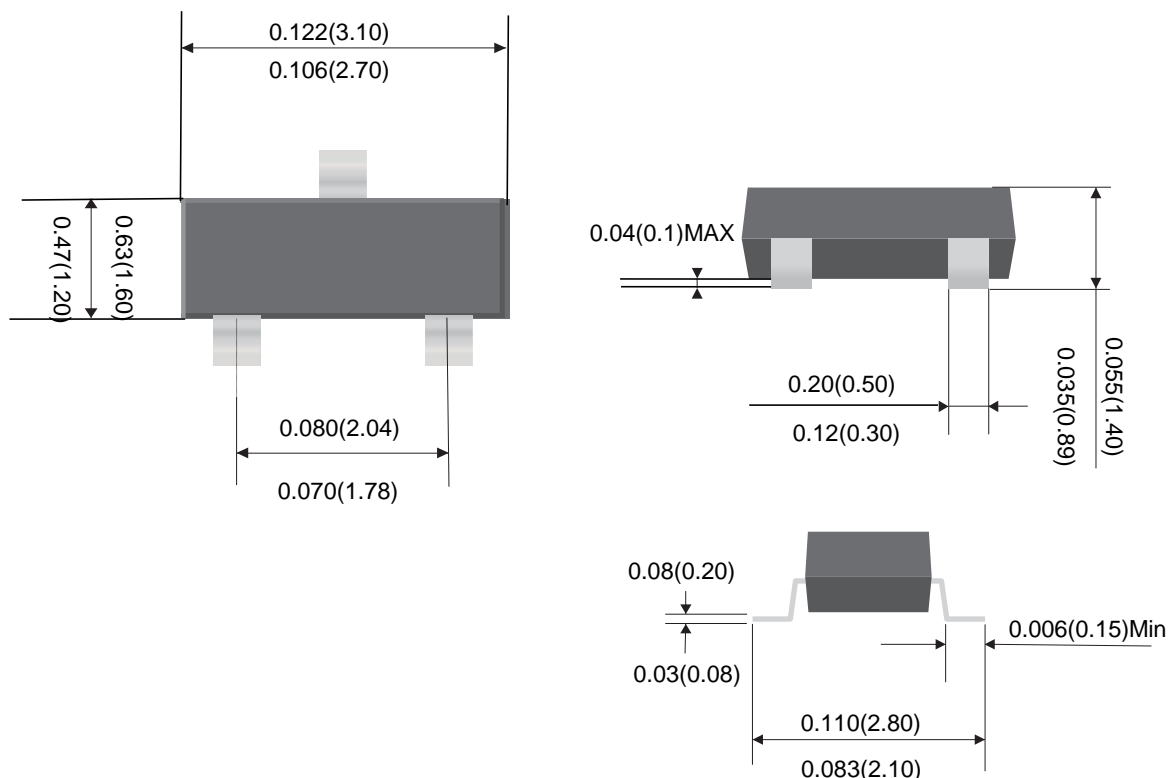
$R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

Electrical Characteristics (T _A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	B _V DSS	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 =4.2A	-	21	30	mΩ
		VGS=4.5V, ID=3.3A	-	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)	-	8.4	-	nC
Gate-Source Charge	Q _{gs}	VDS=-15V, ID=4.5A, VGS=4.5V (Note 1,2)	-	4.7	-	nC
Gate-Drain Charge	Q _{gd}	VDS=-15V, ID=4.5A, VGS=4.5V (Note 1,2)	-	1.7	-	nC
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	330	-	pF
Output Capacitance	C _{oss}		-	55	-	pF
Reverse Transfer Capacitance	C _{rss}		-	45	-	pF
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, I _D =2.25A, V _{GS} =-10V,RG=10Ω (Note 1,2)	-	6	-	ns
Turn-On Rise Time	t _r		-	11	-	ns
Turn-Off Delay Time	t _{d(off)}		-	12	-	ns
Turn-Off Fall Time	t _f		-	6	-	ns
Drain-Source Diode						
Diode Forward Voltage	V _{SD}	I _S =-0.8A, V _{GS} =0V	-	-	1.2	V

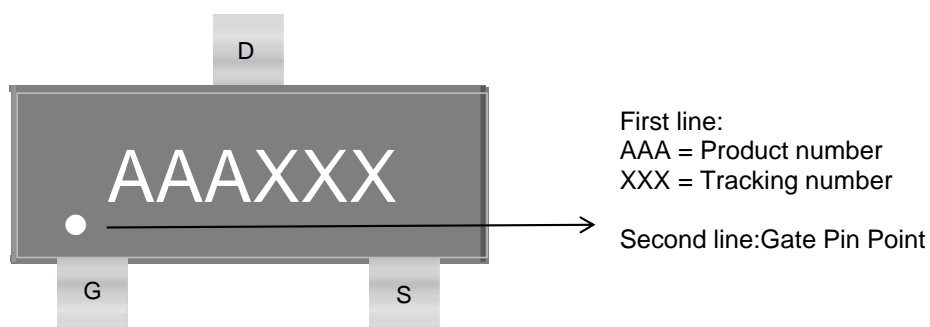
Note:

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)



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