

#### 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: SOT-23 Package

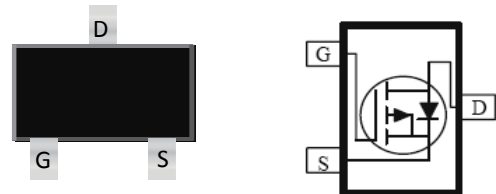
#### Packing Information

Package	Packing
SOT-23	3Kpcs / 7" Reel

#### PRODUCTY SUMMARY

$V_{DS}$	$R_{DS(on)}$ m( $\Omega$ )	$I_D$ (A)
-30	65 @ $V_{GS}=-10.0V$	-2.4
	90 @ $V_{GS}=-4.5V$	-2.2

#### SOT-23



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1)</sup>	$I_D$	-2.1	A
Maximum Power Dissipation	$P_D$	0.35	W
Pulsed Drain Current <sup>2)</sup>	$I_{DM}$	-8.4	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	-30	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-1	-1.36	-2.1	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10.0V, I <sub>D</sub> =-2.4A	-	52	65	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.2A	-	66	90	mΩ
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V	-	-	-1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±100	nA
Dynamic <sup>3)</sup>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-3.1A, V <sub>GS</sub> =-4.5V	-	12	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	1.7	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	2.3	-	nC
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1.0MHZ	-	528	-	pF
Output Capacitance	C <sub>oss</sub>		-	63	-	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	48	-	pF
Switching						
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-10V, I <sub>D</sub> =-3.1A, V <sub>GS</sub> =-4.5V,RG=6Ω	-	5	-	ns
Turn-On Rise Time	t <sub>r</sub>		-	33	-	ns
Turn-Off Delay Time	t <sub>d(off)</sub>		-	27	-	ns
Turn-Off Fall Time	t <sub>f</sub>		-	10	-	ns
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

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.

## TYPICAL CHARACTERISTIC CURVES

Fig.1 On-Region Characteristics

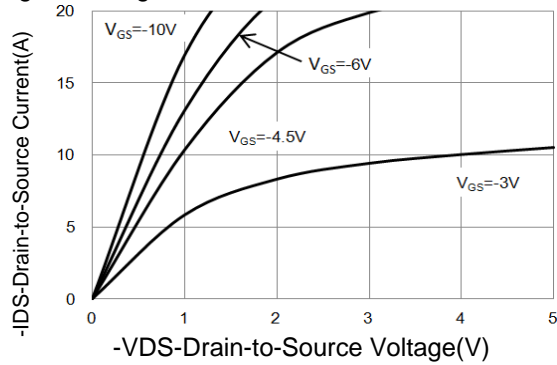


Fig.2 Transfer Characteristics

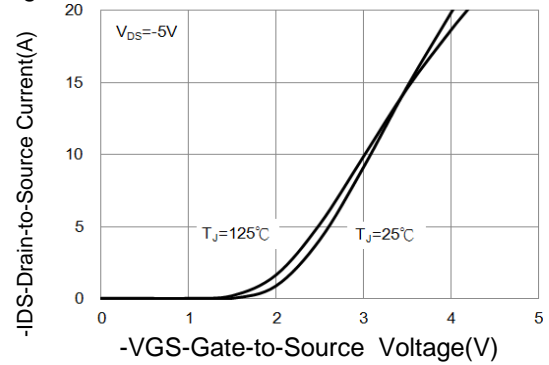


Fig.3 On-Resistance vs. Drain Current

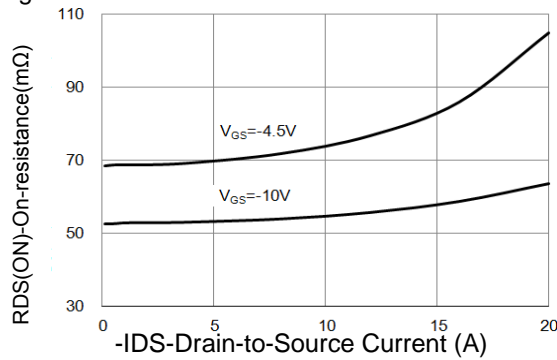


Fig.4 On-Resistance vs. Junction temperature

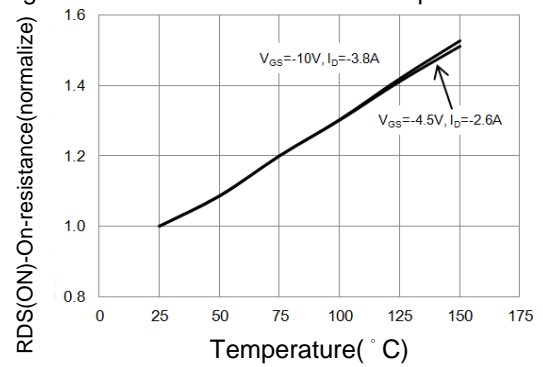


Fig.5 On-Resistance Variation with VGS.

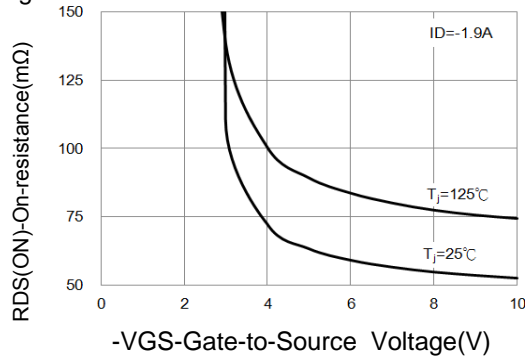


Fig.6 Body Diode Characteristics

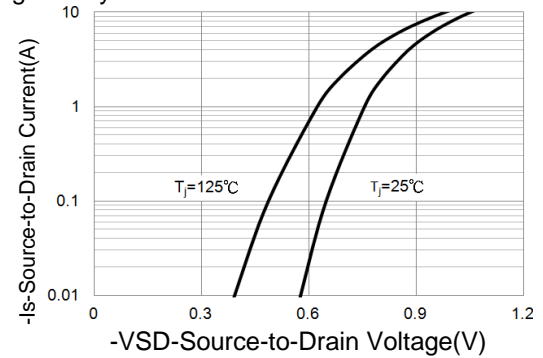


Fig.7 Gate-Charge Characteristics

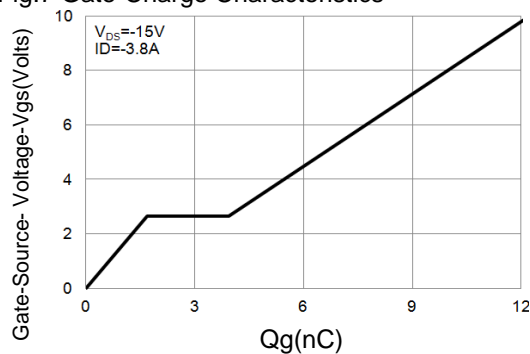
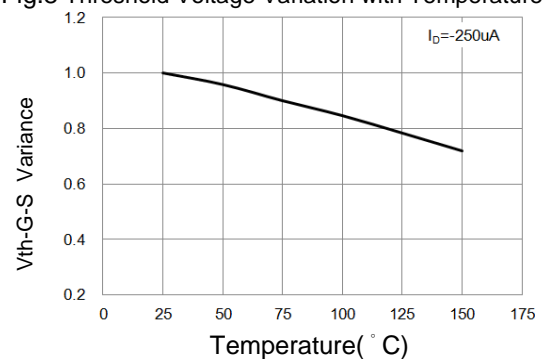
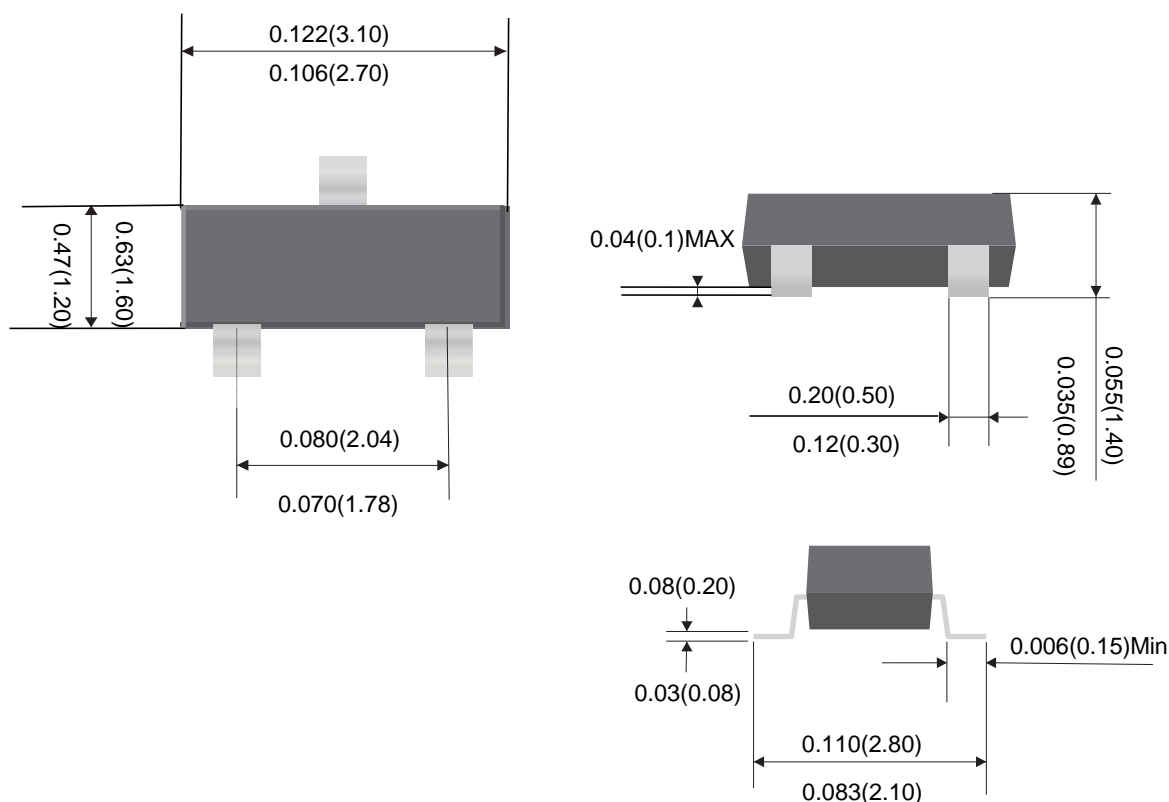


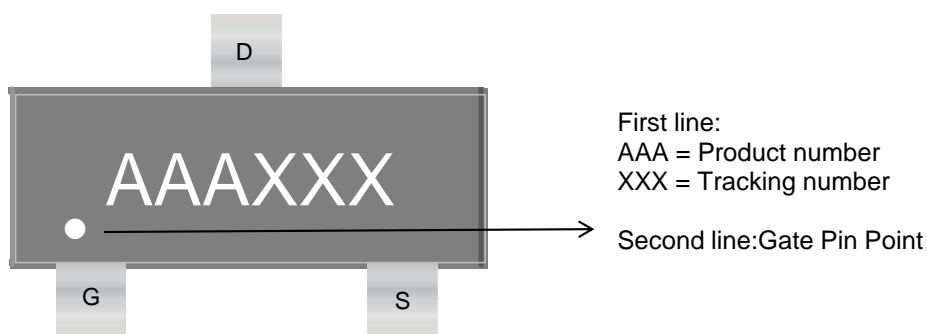
Fig.8 Threshold Voltage Variation with Temperature.



## Package Outline Dimensions ( inches and millimeters)



## Marking Information



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