P-Channel 30-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)
-30	65 @V_{GS}=-10.0V	-2.4
	90 @V_{GS}=-4.5V	-2.2

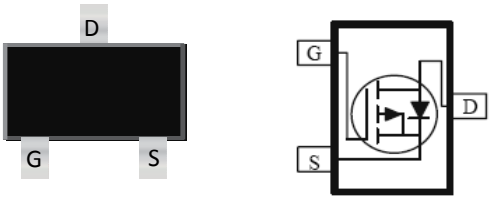
Application

- Portable Devices
- Consumer Electronics

Mechanical

- Case: SOT-23 Package

SOT-23



Packing Information

Package	Packing
SOT-23	3Kpcs / 7" Reel

Maximum Ratings (T_A=25°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	-2.1	A
Maximum Power Dissipation	P_D	0.35	W
Pulsed Drain Current [2)]	I_{DM}	-8.4	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	$R_{\theta JA}$	100	°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}	V_{GS} = 0V, I_D =-250uA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-1	-1.36	-2.1	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10.0V, I_D=-2.4A	-	52	65	mΩ
		V_{GS}=-4.5V, I_D=-2.2A	-	66	90	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±100	nA
Dynamic [3)]						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-3.1A, V_{GS}=-4.5V	-	12	-	nC
Gate-Source Charge	Q_{gs}		-	1.7	-	nC
Gate-Drain Charge	Q_{gd}		-	2.3	-	nC
Input Capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V, f=1.0MHZ	-	528	-	pF
Output Capacitance	C_{oss}		-	63	-	pF
Reverse Transfer Capacitance	C_{rss}		-	48	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-10V, I_D=-3.1A, V_{GS}=-4.5V,RG=6Ω	-	5	-	ns
Turn-On Rise Time	t_r		-	33	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	27	-	ns
Turn-Off Fall Time	t_f		-	10	-	ns
Drain-Source Diode						
Maximum Continuous Body Diode Forward Current	I_S	-	-	-	-1.2	A
Diode Forward Voltage	V_{SD}	I_S=-1.0A, V_{GS}=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

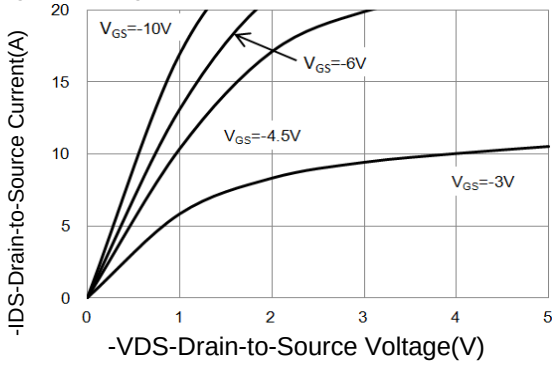


Fig.2 Transfer Characteristics

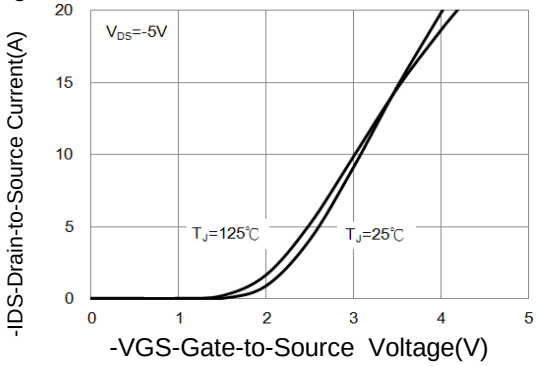


Fig.3 On-Resistance vs. Drain Current

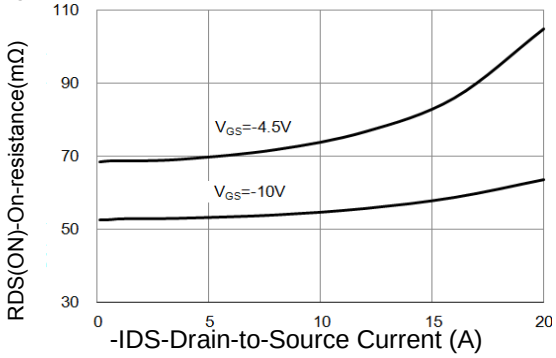


Fig.4 On-Resistance vs.Junction temperature

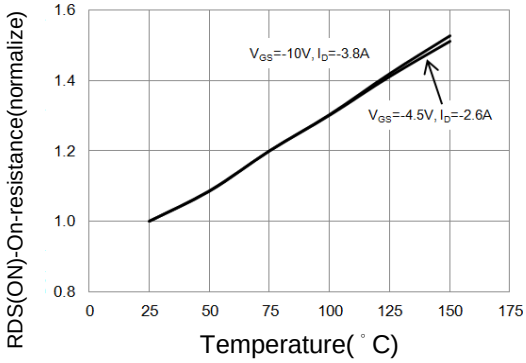


Fig.5 On-Resistance Variation with VGS.

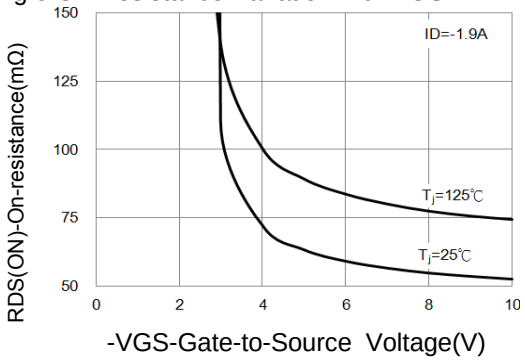


Fig.6 Body Diode Characteristics

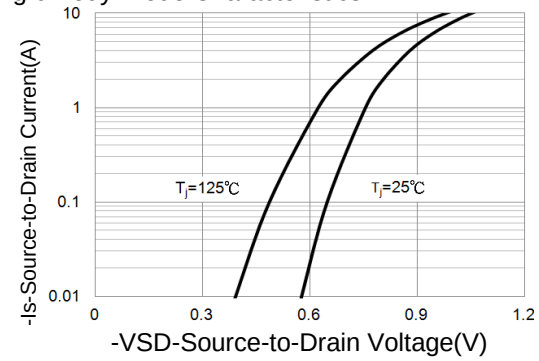


Fig.7 Gate-Charge Characteristics

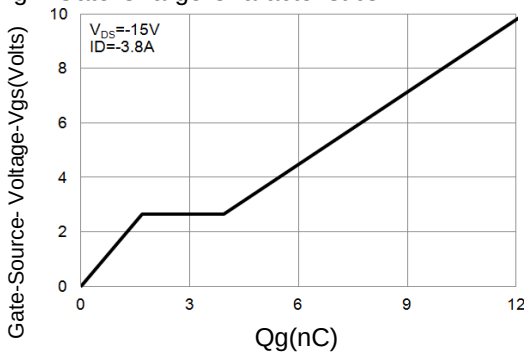
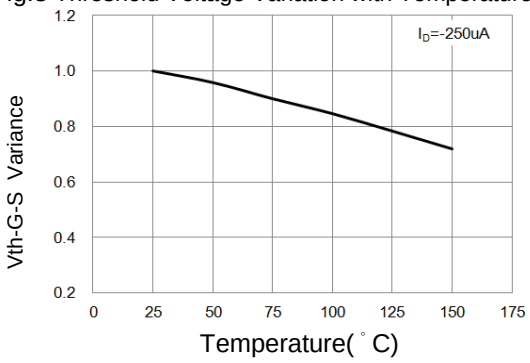
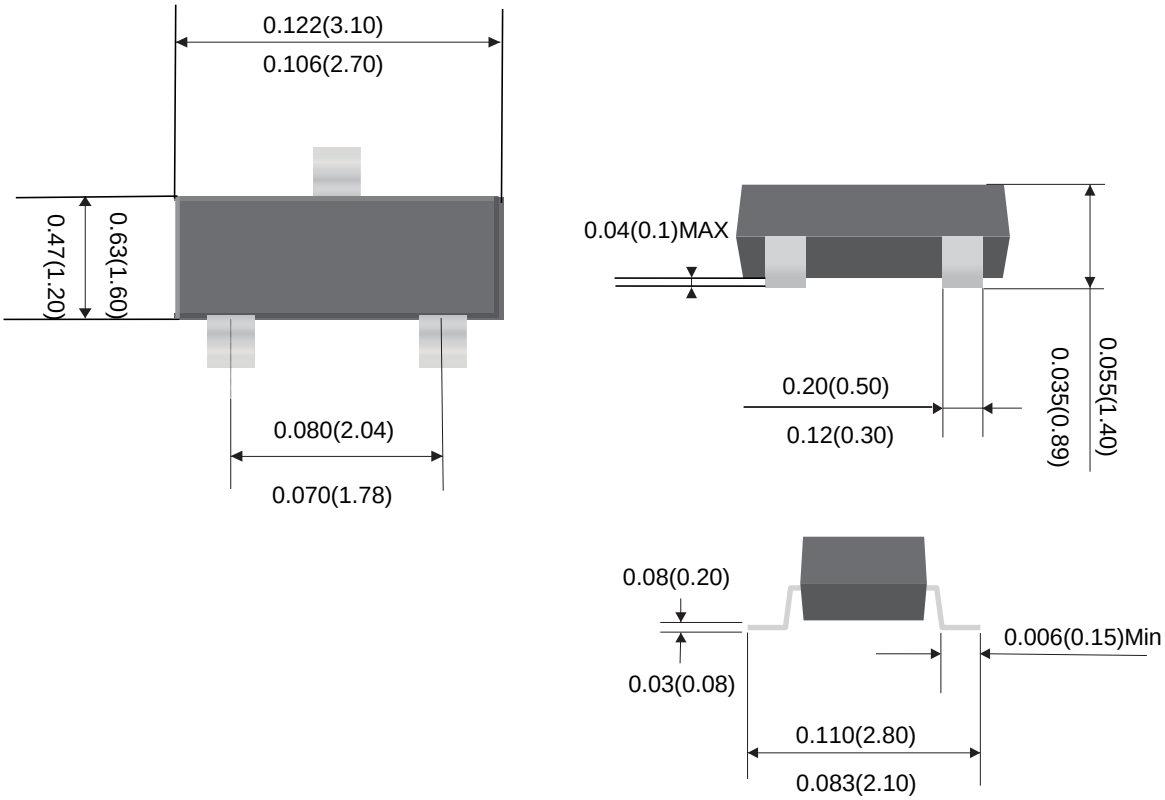


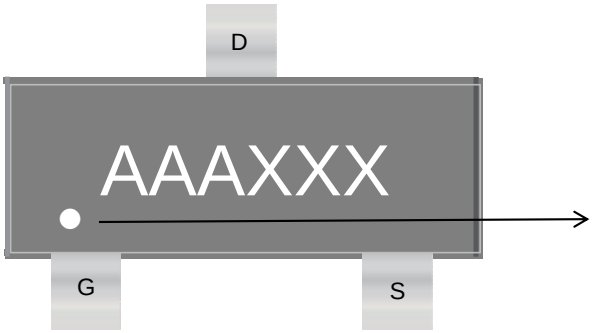
Fig.8 Threshold Voltage Variation with Temperature.



Package Outline Dimensions (inches and millimeters)



Marking Information



First line:
AAA = Product number
XXX = Tracking number

Second line:Gate Pin Point