ATM2310NSA

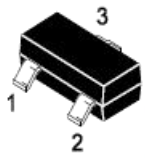
N-Channel Enhancement Mode Field Effect Transistor

Drain-Source Voltage: 60V ***Drain Current: 3A***

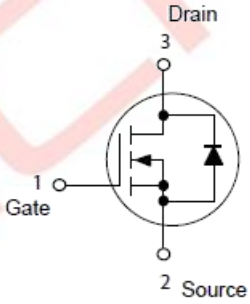
Description

The ATM2310NSA uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V.This device is suitable for use as Battery protection or in other Switching application.

SOT-23



1 Gate 2 Source 3 Drain



Features

- High power and current handing capability
- Surface mount package
- $R_{DS(ON)}$ < 100mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 110mΩ (V_{GS} = 4.5V)

Application

- Battery Switch
- DC/DC Converter

Absolute maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	3	A
Pulsed Drain Current[1)]	I_{DM}	10	
Maximum Power Dissipation	P_D	1	W
Thermal Resistance from Junction to Ambient[2)]	$R_{\theta JA}$	125	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	

Electrical characteristics (T_A=25 °C, unless otherwise noted)

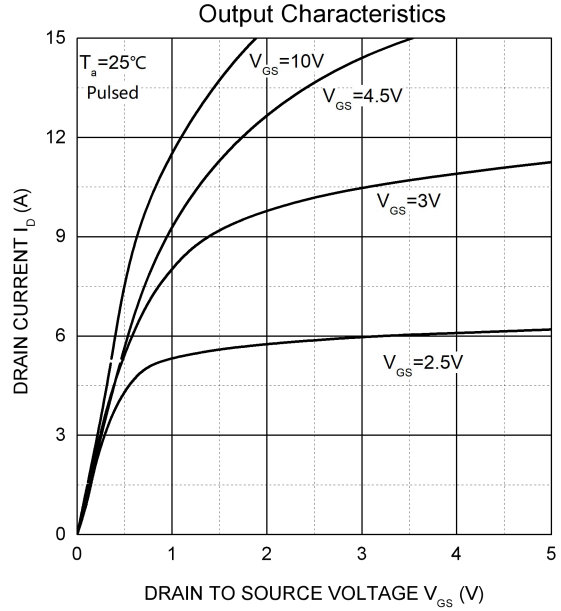
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =48V,V_{GS} = 0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate Threshold Voltage[3]	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1		2.5	V
Drain-Source On-Resistance[3]	$R_{DS(on)}$	V_{GS} =10V, I_D =2A			100	mΩ
		V_{GS} =4.5V, I_D =1A			110	
Dynamic characteristics[4]						
Input Capacitance	C_{iss}	V_{DS} =30V,V_{GS} =0V,f =1MHz		250		pF
Output Capacitance	C_{oss}			26		
Reverse Transfer Capacitance	C_{rss}			20		
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{DS} =30V,V_{GS} =4.5V,I_D =3A		7		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			1.5		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=30V,I_D=1.5A, R_{GEN}=1Ω		6.5		ns
Turn-On Rise Time	t_r			15.2		
Turn-Off Delay Time	$t_{d(off)}$			15.2		
Turn-Off Fall Time	t_f			10.3		
Source-Drain Diode characteristics[4]						
Body Diode Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1.2	V

Notes:

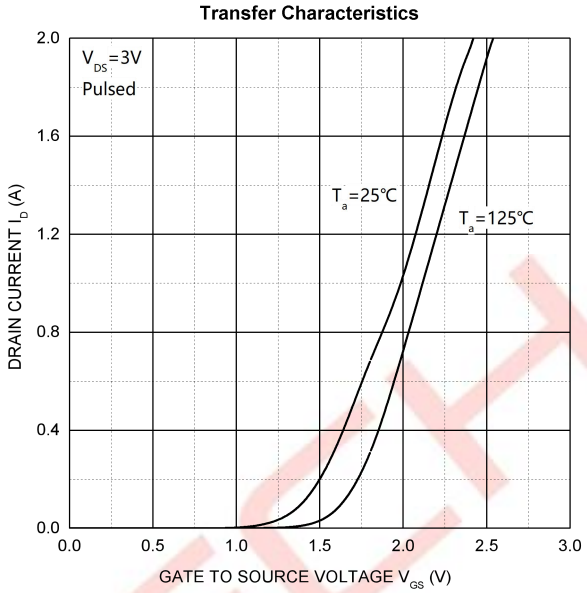
1) Repetitive rating: Pulse width limited by junction temperature.
2) Surface mounted on FR4 board, t≤10s.
3) Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.
4) Guaranteed by design, not subject to production.

Typical Characteristics Curves

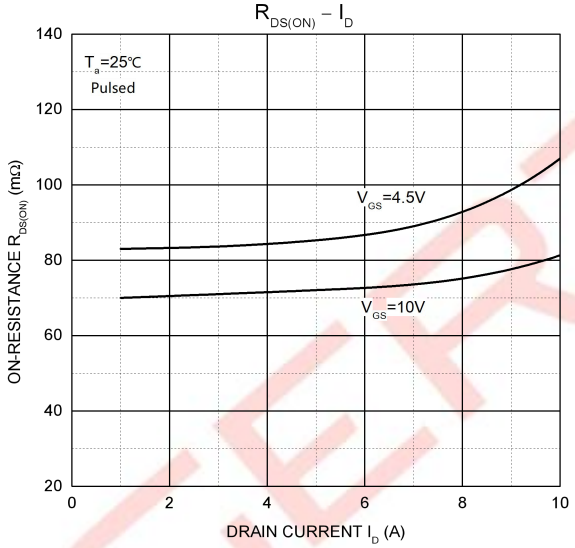
Output Characteristics



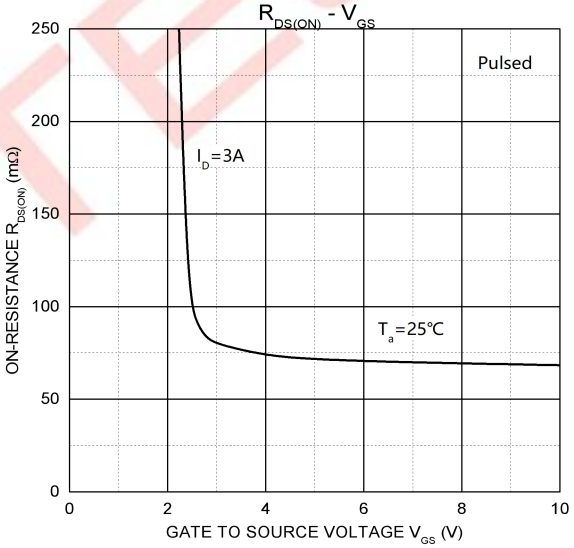
Transfer Characteristics



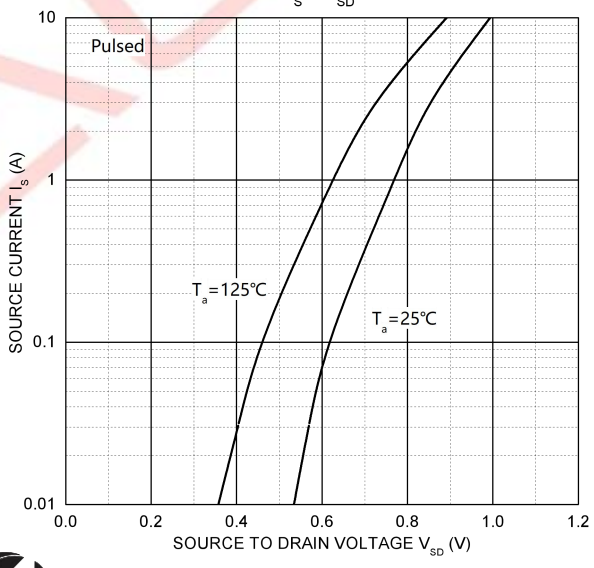
$R_{DS(ON)}$ – I_D



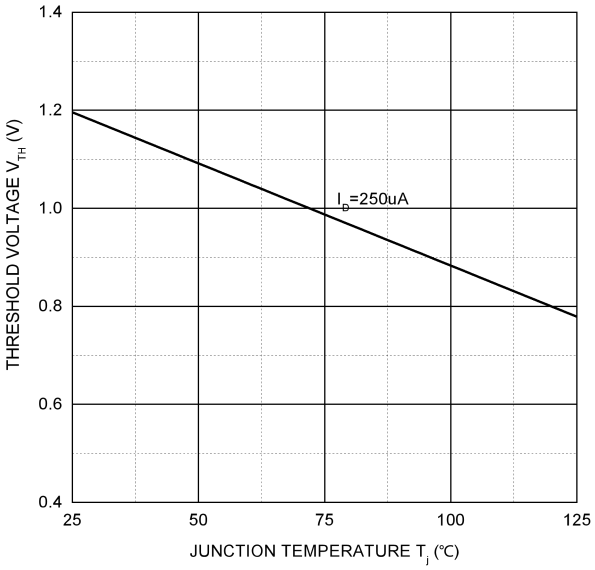
$R_{DS(ON)}$ - V_{GS}



I_S - V_{SD}

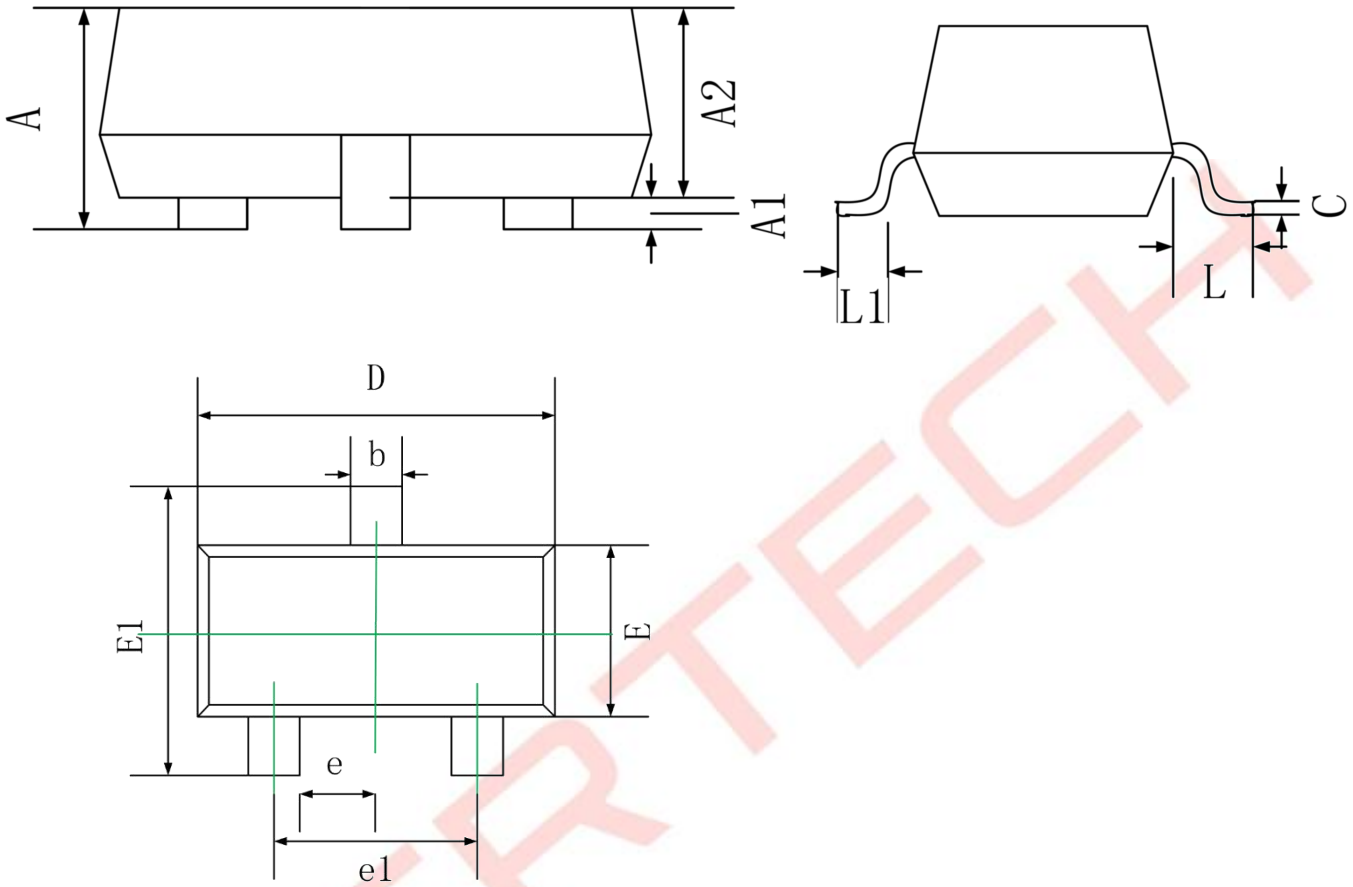


Threshold Voltage



Package Outline

SOT-23



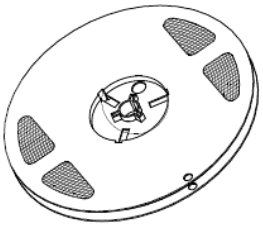
Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50

Package Specifications

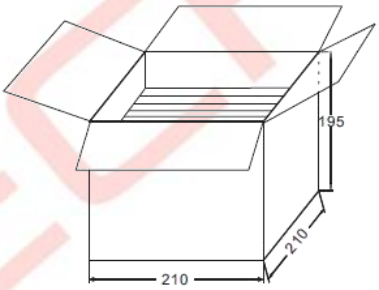
◆ **The method of packaging**

SOT-23 (TO-236)

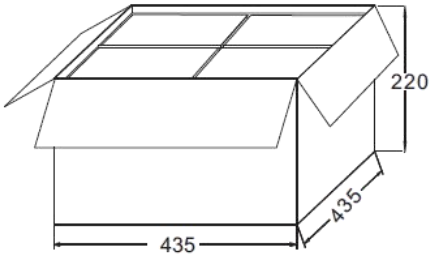
3,000 pcs per reel



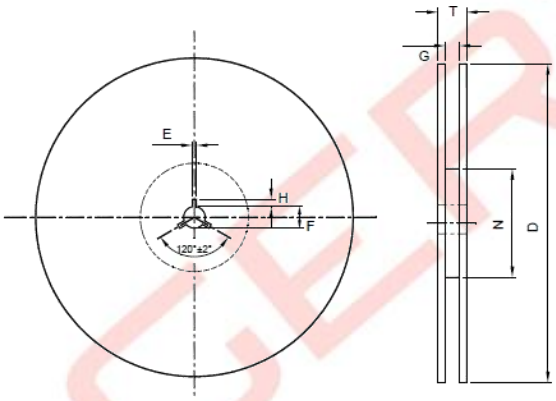
30,000 pcs per box
10 reels per box



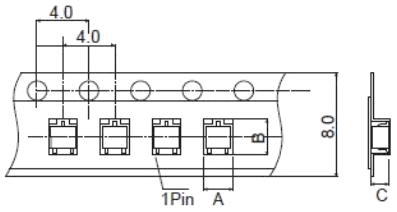
120,000 pcs per carton
4 boxes per carton



◆ **Embossed tape and reel data**



Reel (7")



Tape (8mm)

Symbol	Value (unit: mm)
A	3.15 ± 0.1
B	2.7 ± 0.1
C	1.25 ± 0.1
E	2 ± 0.5
F	13 ± 0.5
D	178 ± 2.0
G	8.4 ± 1.5
H	4 ± 0.5
N	60
T	< 14.9