

ATM3400ANSA

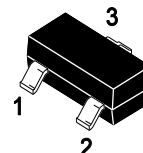
N-Channel Enhancement Mode Field Effect Transistor

Drain-Source Voltage: 30V Drain Current: 5.8A

FEATURES

- ◆ Trench FET Power MOSFET
- ◆ $R_{DS(ON)} < 35m\Omega$ ($V_{GS} = 10V$)
- ◆ $R_{DS(ON)} < 40m\Omega$ ($V_{GS} = 4.5V$)
- ◆ $R_{DS(ON)} < 52m\Omega$ ($V_{GS} = 2.5V$)

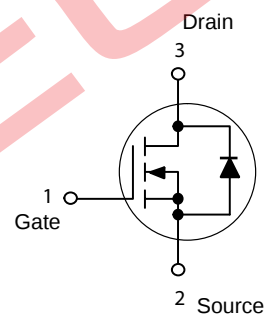
SOT-23



APPLICATIONS

- ◆ DC/DC Converter
- ◆ Battery Switch

Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current ¹	I_{DM}	30	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

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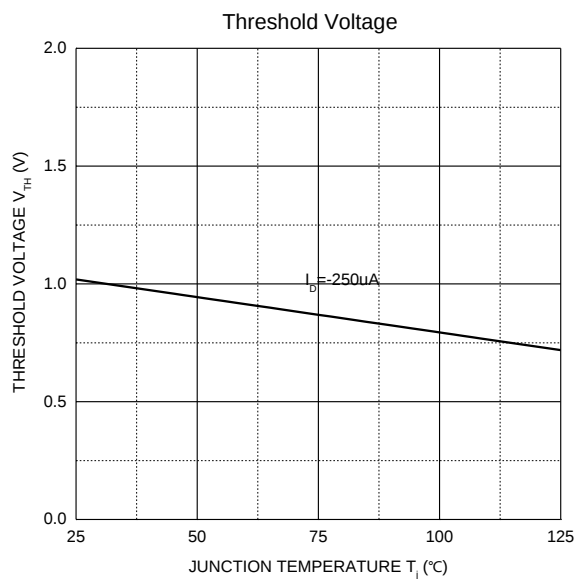
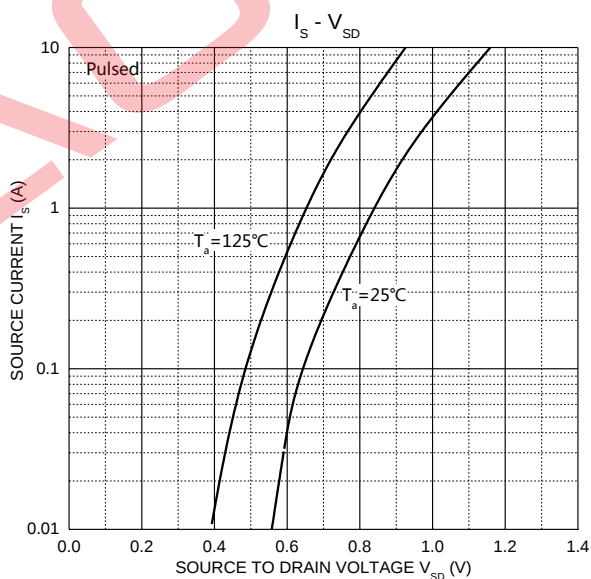
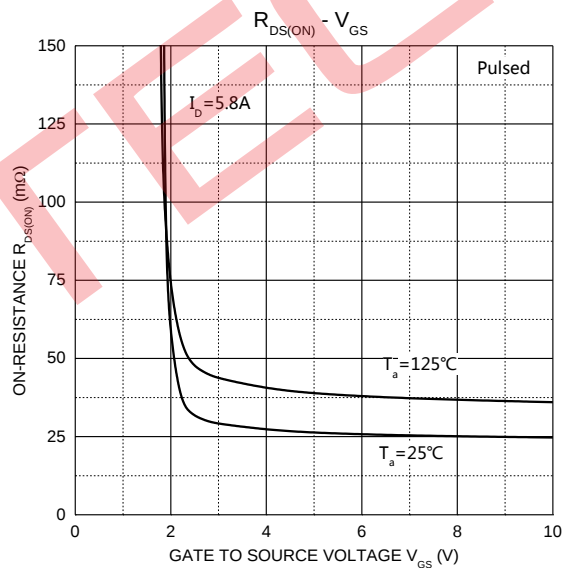
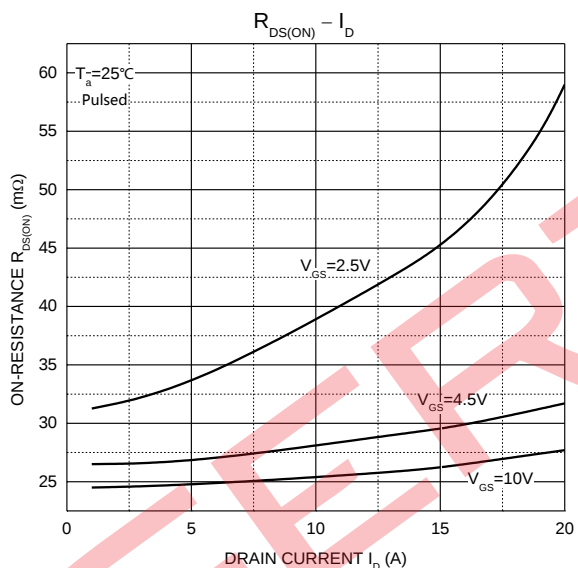
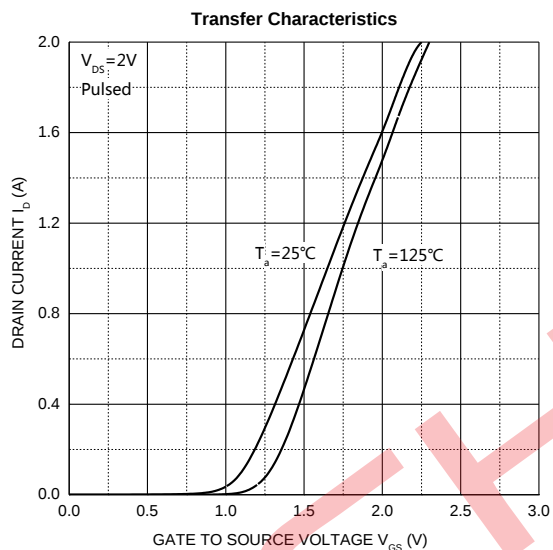
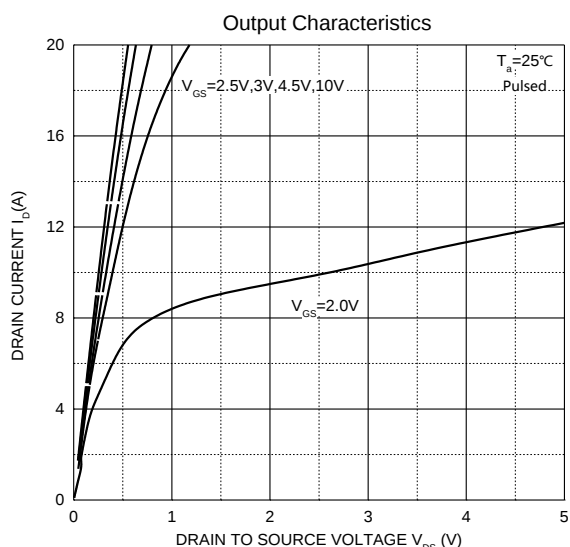
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±0.1	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7		1.4	V
Drain-source on-resistance ³	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		27	35	mΩ
		V _{GS} =4.5V, I _D =5A		29	40	
		V _{GS} =2.5V, I _D =4A		38	52	
Forward tranconductance	g _{FS}	V _{DS} =5V, I _D =5A	8			S
Dynamic characteristics ⁴						
Input Capacitance	C _{iSS}	V _{DS} =15V,V _{GS} =0V,f =1MHz			1050	pF
Output Capacitance	C _{oss}			99		
Reverse Transfer Capacitance	C _{rSS}			77		
Gate resistance	R _g	V _{DS} =0V,V _{GS} =0V, f =1MHz			3.6	Ω
Switching Characteristics ⁴						
Turn-on delay time	t _{d(on)}	V _{GS} =10V,V _{DS} =15V, R _L =2.7Ω,R _{GEN} =3Ω			5	ns
Turn-on rise time	t _r				7	
Turn-off delay time	t _{d(off)}				40	
Turn-off fall time	t _f				6	
Source-Drain Diode characteristics						
Diode Forward voltage ³	V _{DS}	V _{GS} =0V, I _S =1A			1	V

Notes :

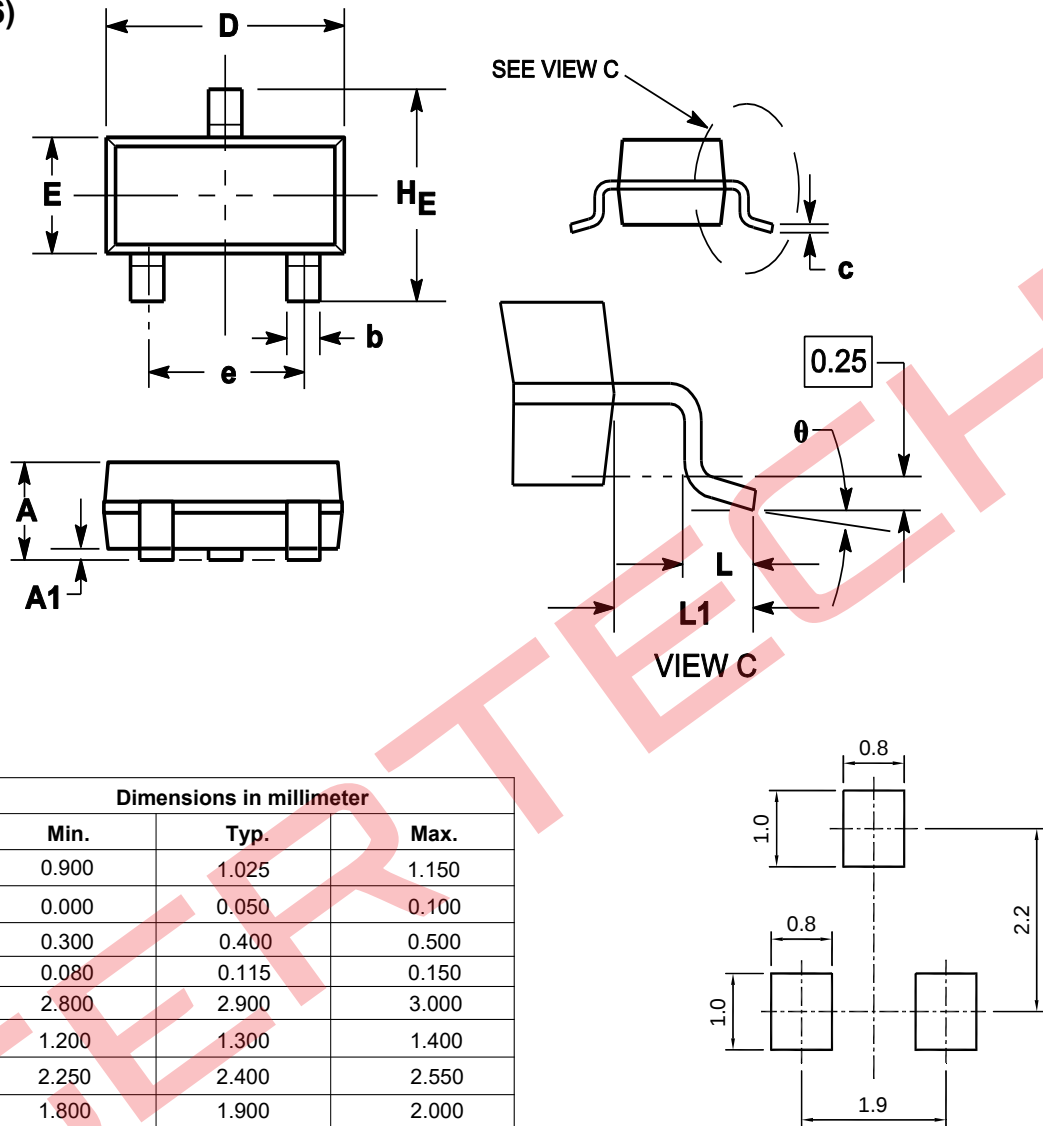
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS CURVES



PACKAGE OUTLINE

SOT-23 (TO-236)



SOT-23 (TO-236)

Recommended soldering pad

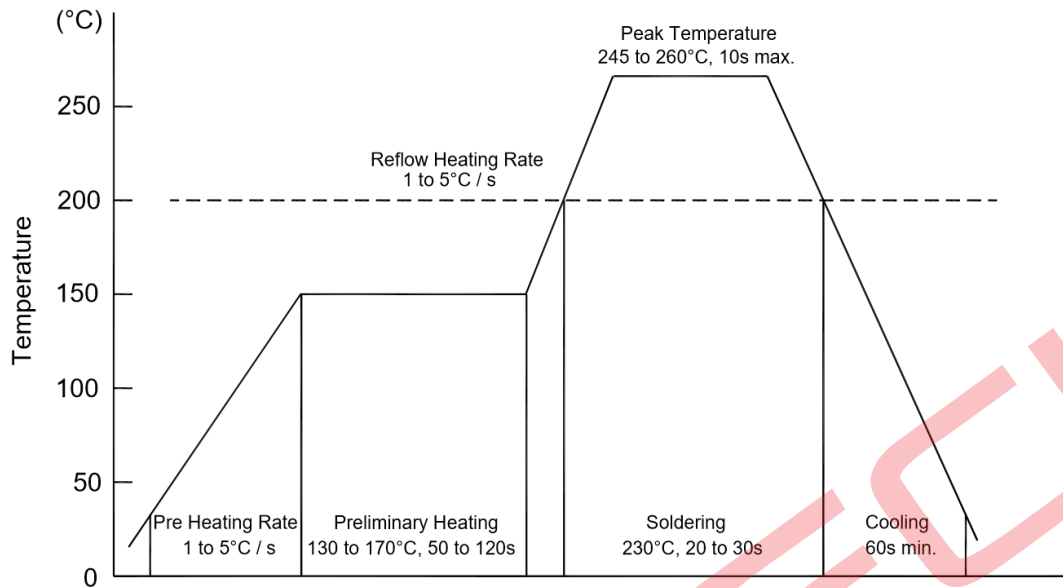
Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°

ORDERING INFORMATION

Device	Package	Shipping
ATM3400ANSA	SOT-23	3000/Reel&Tape(7inch)

CONDITIONS OF SOLDERING AND STORAGE

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

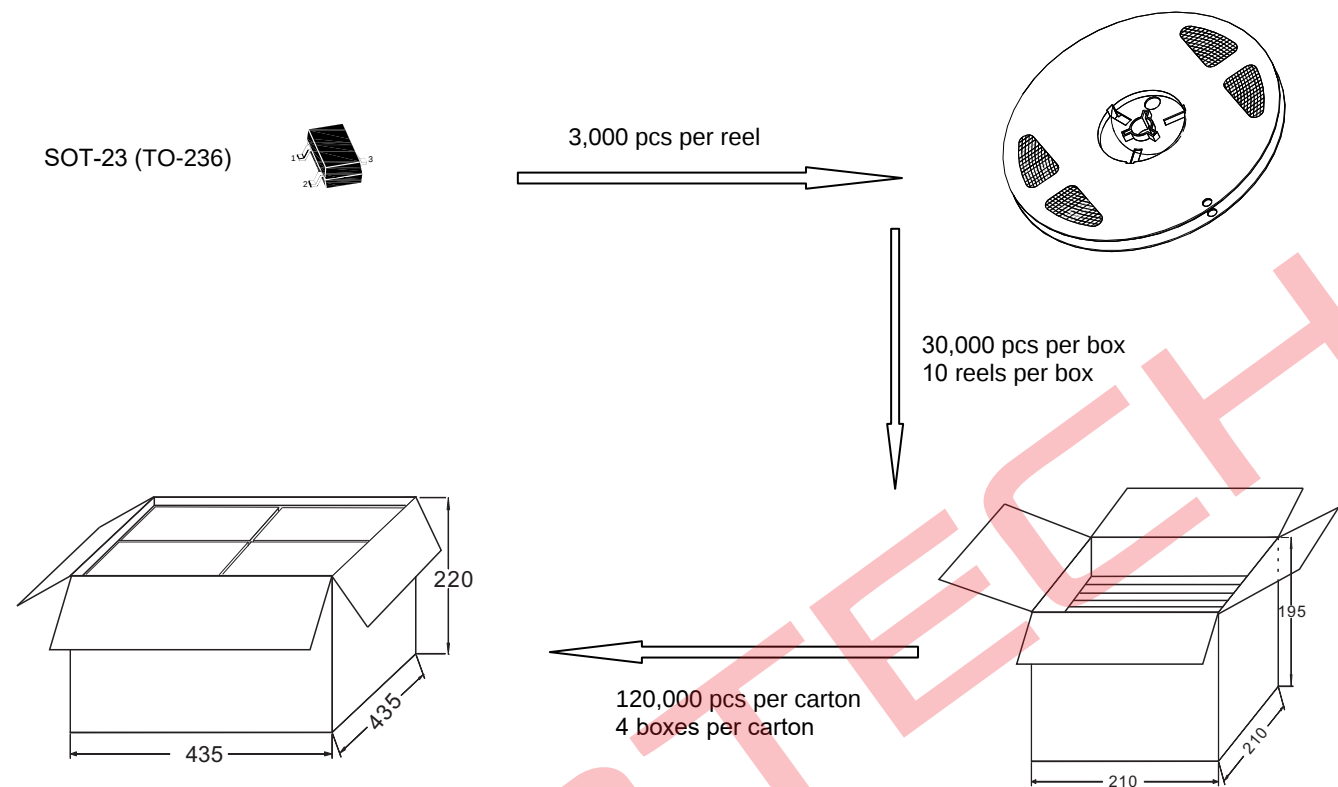
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

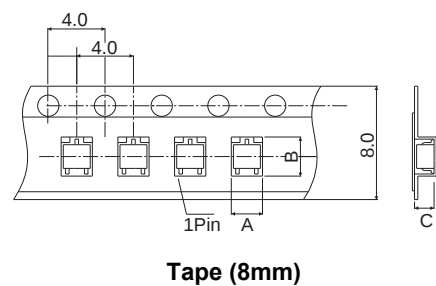
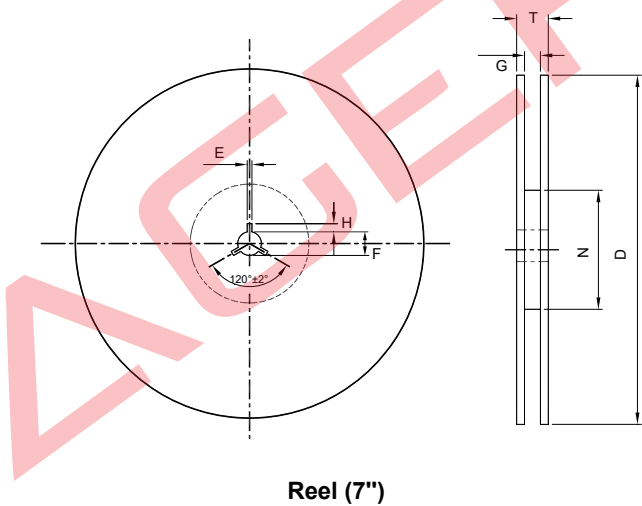
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

PACKAGE SPECIFICATIONS

The method of packaging



Embossed tape and reel data



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