ATM3401PSA

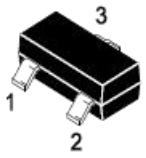
P-Channel Enhancement Mode Field Effect Transistor

Drain-Source Voltage: -30V ***Drain Current: -4.2A***

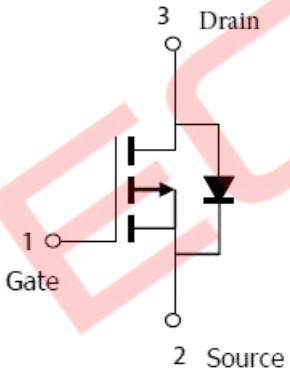
Features

- Trench FET Power MOSFET
- Exceptional on-resistance and maximum DC current capability
- $R_{DS(ON)}$ < 65mΩ (V_{GS} = -10V)
- $R_{DS(ON)}$ < 75mΩ (V_{GS} =- 4.5V)
- $R_{DS(ON)}$ < 90mΩ (V_{GS} = -2.5V)

SOT-23



1 Gate 2 Source 3 Drain



Marking:R1

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Absolute maximum ratings (Ta=25℃ 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	-4.2	A
Power Dissipation	P_D	1.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	104	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

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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	-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			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.7	-0.9	-1.3	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.2A		50	65	mΩ
		V_{GS} =-4.5V, I_D =-4A		60	75	
		V_{GS} =-2.5V, I_D =-1A		70	90	
Forward transconductance[1]	g_{FS}	V_{DS} =-5V, I_D =-4.2A		10		S
Dynamic characteristics[2]						
Input Capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		954		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			77		
Switching characteristics[2]						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=3.6Ω,R_{GEN}=6Ω			6.3	ns
Turn-on rise time	t_r				3.2	
Turn-off delay time	$t_{d(off)}$				38.2	
Turn-off fall time	t_f				12	
Source-Drain Diode characteristics						
Diode forward current	I_S				-2	A
Diode pulsed forward current	I_{SM}				-25	A
Diode Forward voltage[1]	V_{DS}	V_{GS} =0V, I_S=-4.2A			-1.2	V

Notes:

1) Pulse test: pulse width≤300μs, duty cycle≤2%.

2) Guaranteed by design, not subject to production testing.

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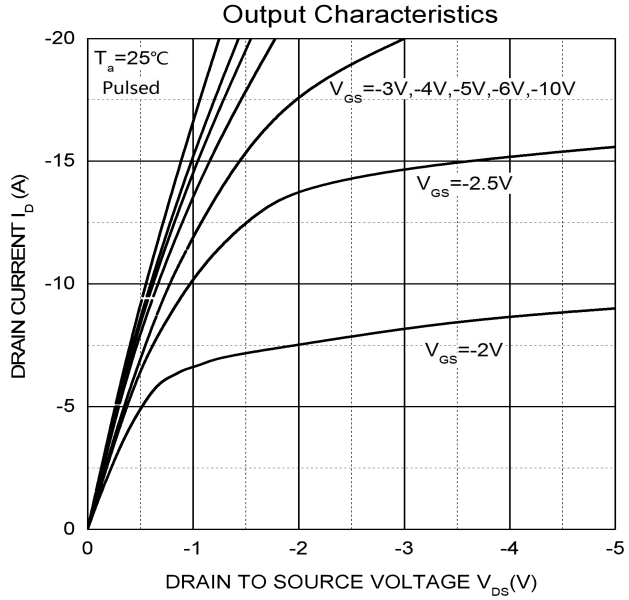
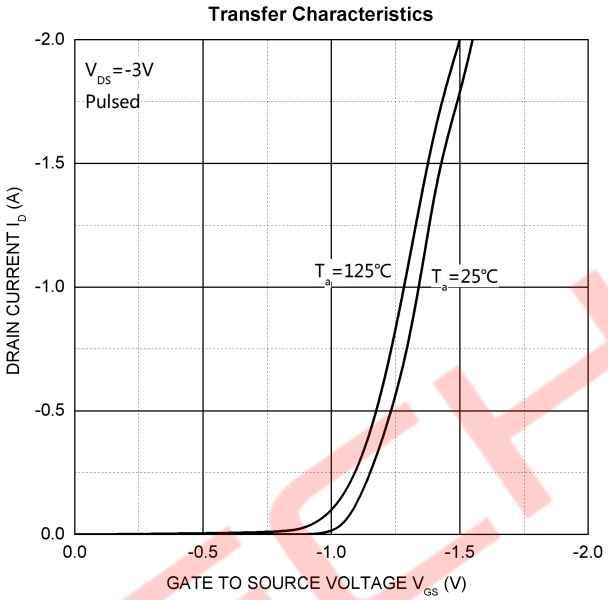
Typical Characteristics Curves

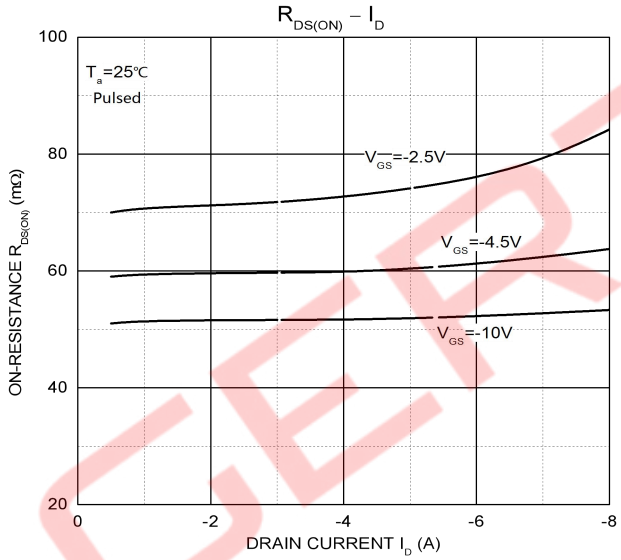
Output Characteristics



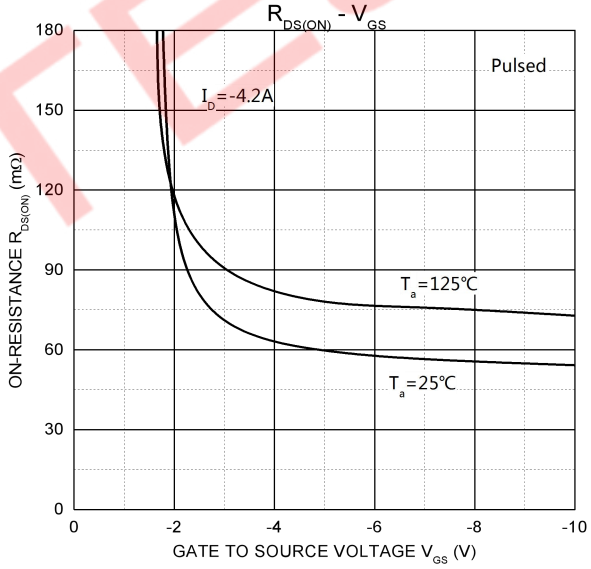
Transfer Characteristics



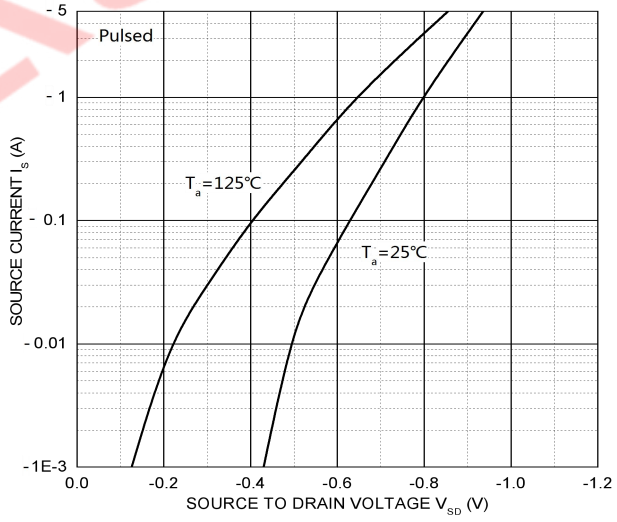
$R_{DS(ON)}$ – I_D



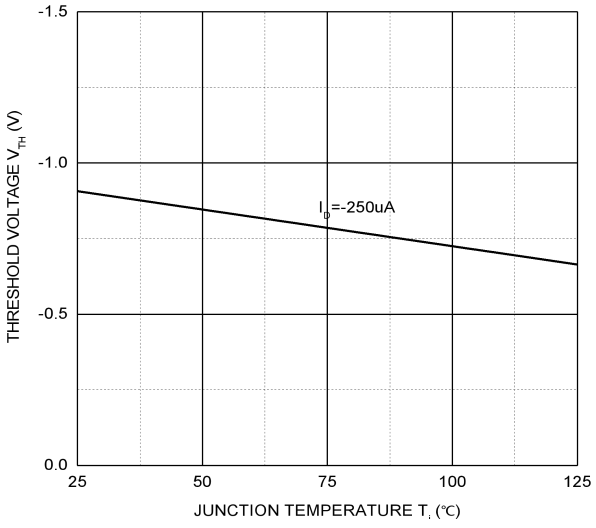
$R_{DS(ON)}$ - V_{GS}



I_S - V_{SD}

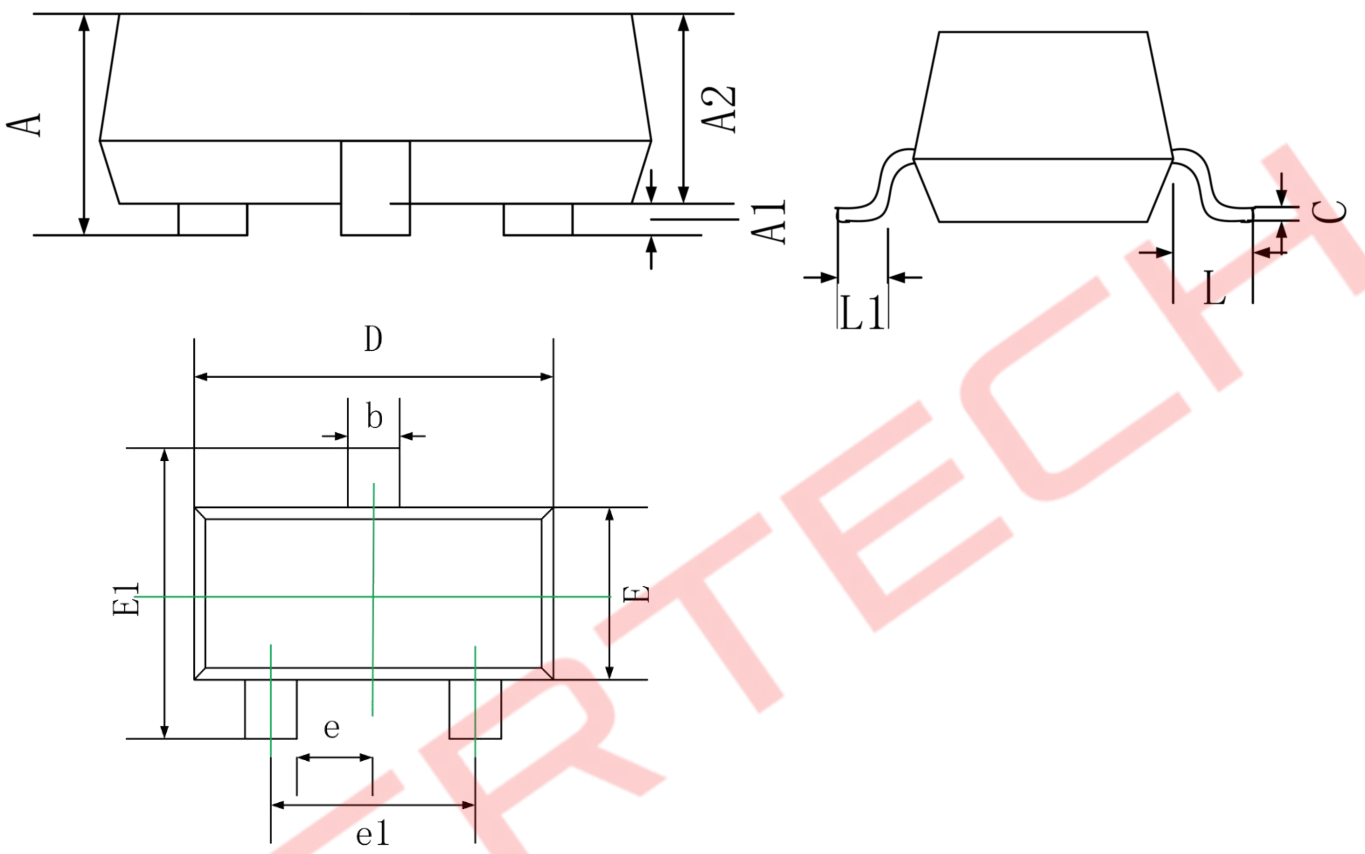


Threshold Voltage



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

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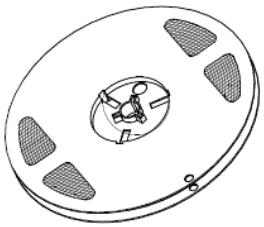
Package Specifications

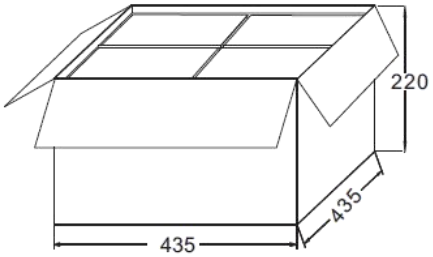
◆ **The method of packaging**

SOT-23 (TO-236)

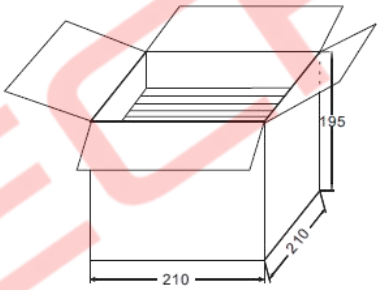
3,000 pcs per reel



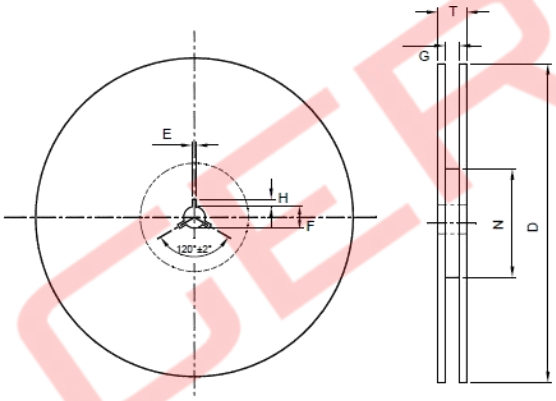
30,000 pcs per box
10 reels per box



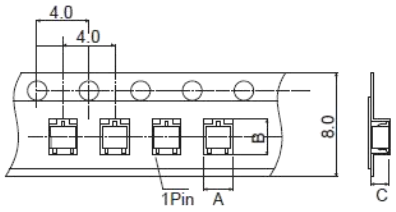
120,000 pcs per carton
4 boxes per carton



◆ **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

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