



PJM2300NSA

N-Channel MOSFET

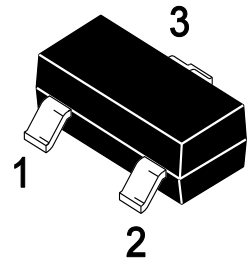
Features

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge
- MSL: 1 Level

Applications

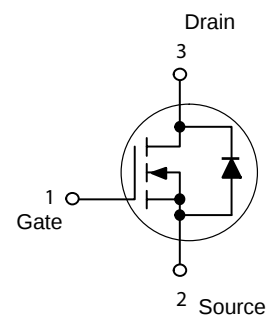
- Load Switch for Portable Devices
- DC/DC Converter

SOT-23



1.Gate 2.Source 3.Drain

Schematic diagram



Marking: M02

Absolute Maximum Ratings

Ratings at $T_A = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	6.0	A
Pulsed Drain Current (Note1)	I_{DM}	18	
Power Dissipation	P_D	0.9	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	$^\circ\text{C}$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient (Note2)	$R_{\theta JA}$	139	$^\circ\text{C/W}$

Note:

- 1.Repetitive rating : Pulse width limited by junction temperature.
- 2.Surface mounted on FR4 board, $t \leq 10\text{s}$.

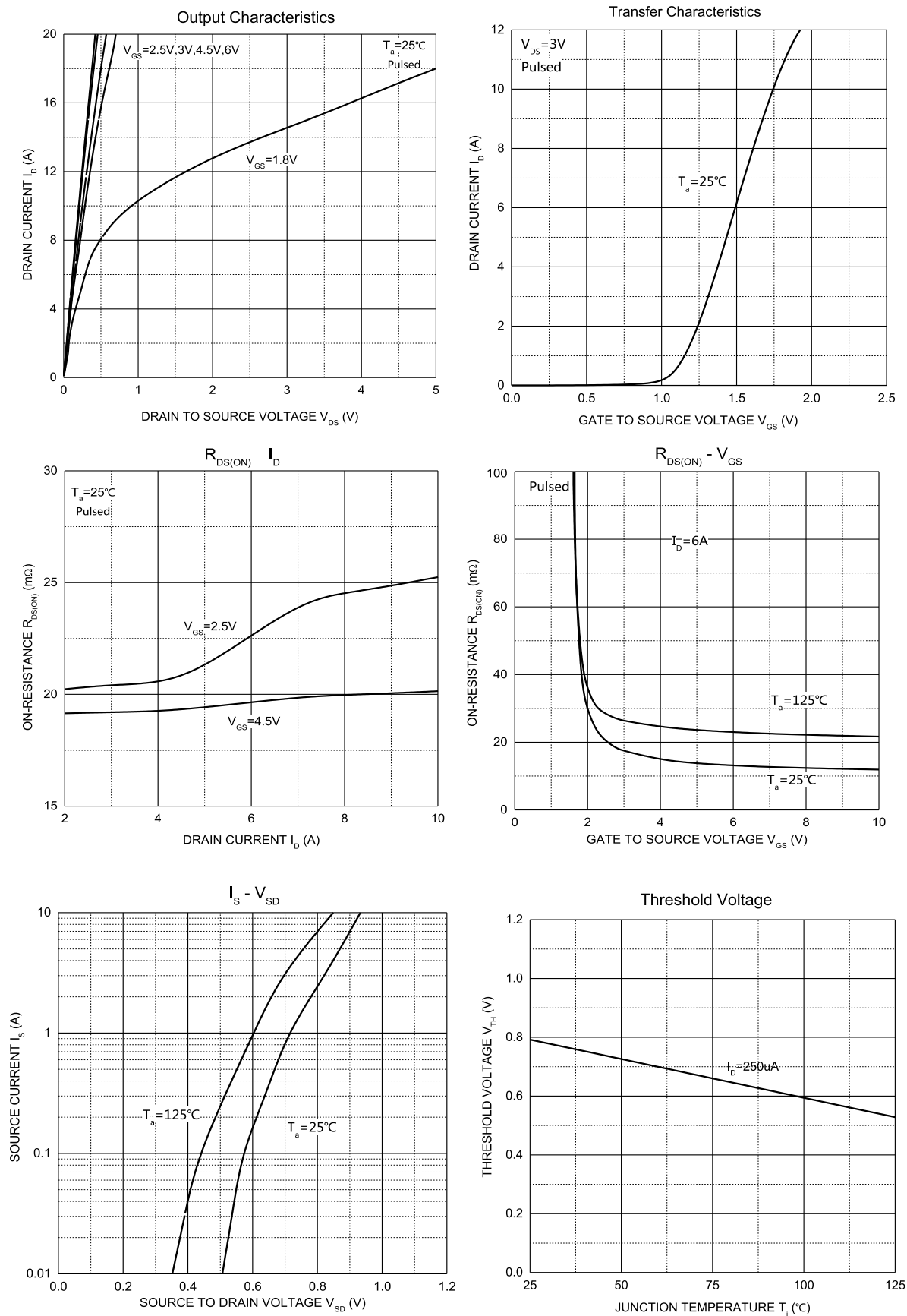


Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	--	--	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	--	1	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =4A	--	15	20	mΩ
		V _{GS} =4.5V, I _D =3A	--	17	30	mΩ
		V _{GS} =2.5V, I _D =2A	--	20	35	mΩ
		V _{GS} =1.8V, I _D =2A	--	30	45	mΩ
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =6A	--	5	--	S
Body Diode Forward Voltage	V _{SD}	I _S =1.7A, V _{GS} =0V	--	--	1.2	V
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =8V, f=1MHz	--	523	--	pF
Output Capacitance	C _{oss}		--	99	--	pF
Reverse Transfer Capacitance	C _{rss}		--	75	--	pF
Switching Parameters						
Total gate charge	Q _g	V _{GS} =4.5V, V _{DS} =10V,I _D =6A	--	6.4	8.2	nC
Gate Source Charge	Q _{gs}		--	1.8	2.3	nC
Gate Drain Charge	Q _{gd}		--	1.3	1.9	nC
Turn-On DelayTime	t _{D(on)}	V _{DS} =10V, V _{GS} =4.5V I _D =1A, R _{GEN} =6Ω	--	10.5	21	ns
Turn-On Rise Time	t _r		--	4.5	9	ns
Turn-Off DelayTime	t _{D(off)}		--	27.5	55	ns
Turn-Off Fall Time	t _f		--	4.3	8.6	ns



Typical Characteristics Curves



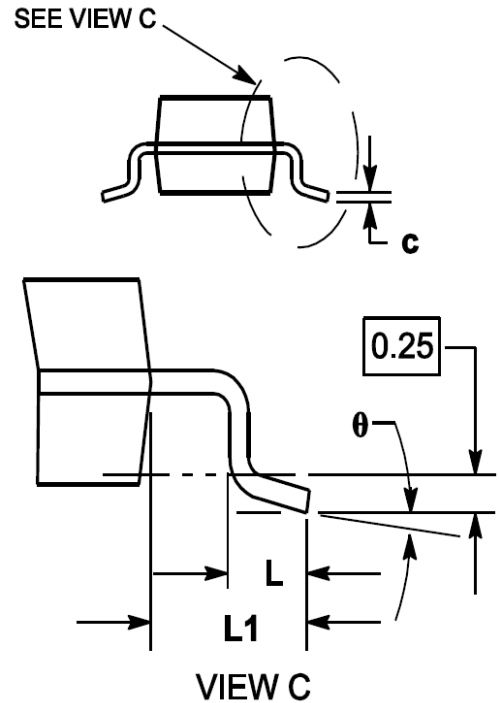
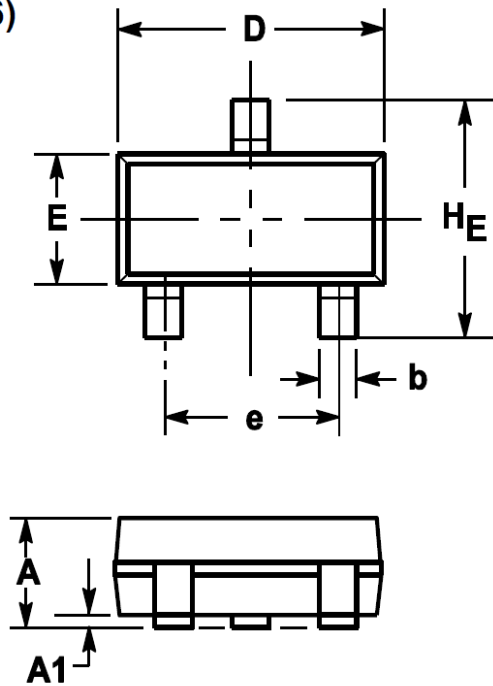


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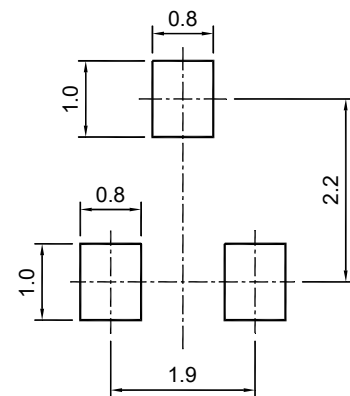
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Package Outline

SOT-23 (TO-236)



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°



SOT-23 (TO-236)

Recommended soldering pad

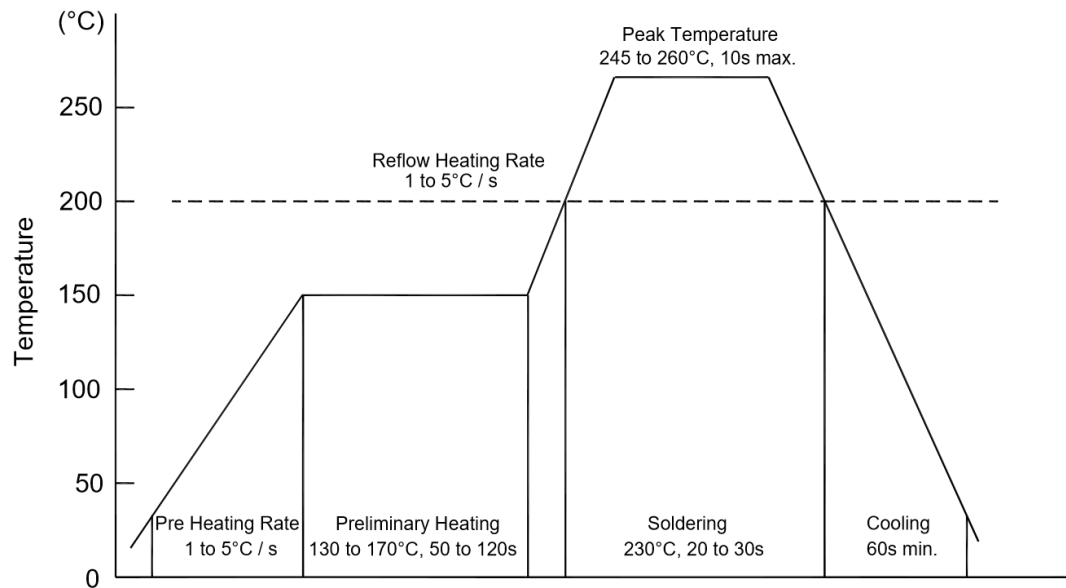
Ordering Information

Device	Package	Shipping
PJM2300NSA	SOT-23	3,000/Tape & Reel (7 inches)



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

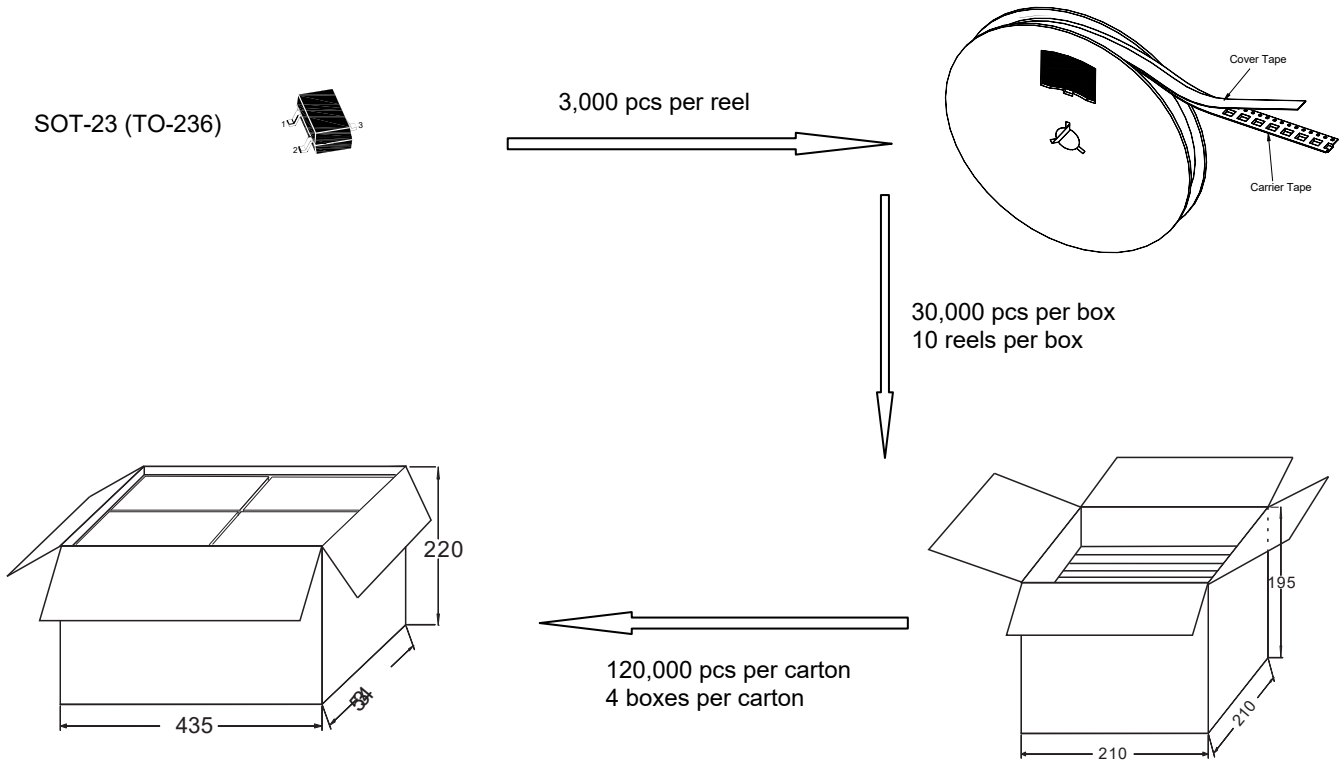


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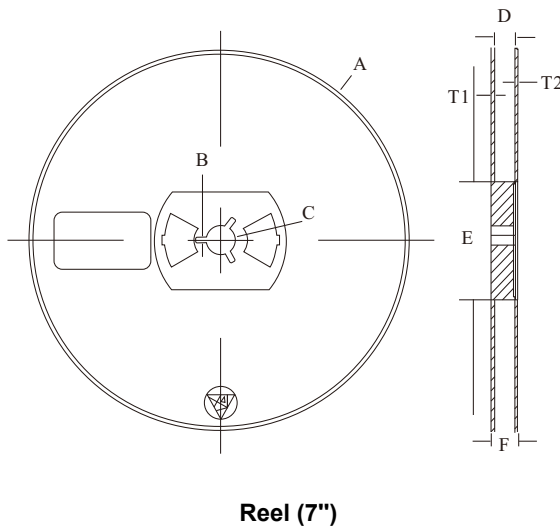
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Package Specifications

◆ The method of packaging



◆ Embossed tape and reel data



Symbol	Value (unit: mm)
A	$\varnothing 177.8 \pm 1$
B	2.7 ± 0.2
C	$\varnothing 13.5 \pm 0.2$
E	$\varnothing 54.5 \pm 0.2$
F	12.3 ± 0.3
D	$9.6 + 2 / - 0.3$
T1	1.0 ± 0.2
T2	1.2 ± 0.2
N	3.15 ± 0.1
G	1.25 ± 0.1