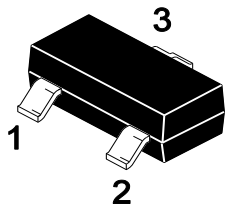
PJM2300NSA
N-Channel MOSFET

Feature

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

SOT-23



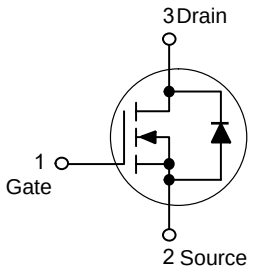
1. Gate 2.Source 3.Drain

Marking: M02

Applications

- Load Switch for Portable Devices
- DC/DC Converter

Schematic diagram



Absolute Maximum Ratings

Ratings at T_A=25℃ unless otherwise specified.

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	4.5	A
Pulsed Drain Current Note1	I_{DM}	18	
Power Dissipation	P_D	0.35	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	°C
Thermal Characteristics			
Parameter	**Symbol**	**Typ.**	**Units**
Maximum Junction-to-Ambient Note2	$R_{\theta JA}$	357	°C/W

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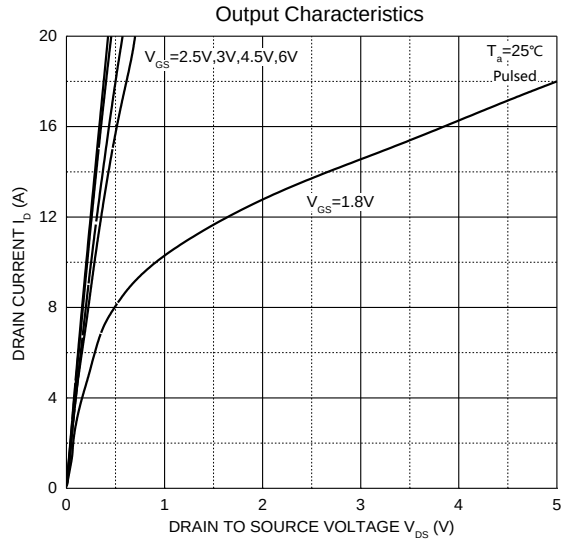
Electrical Characteristics (T_C = 25℃)

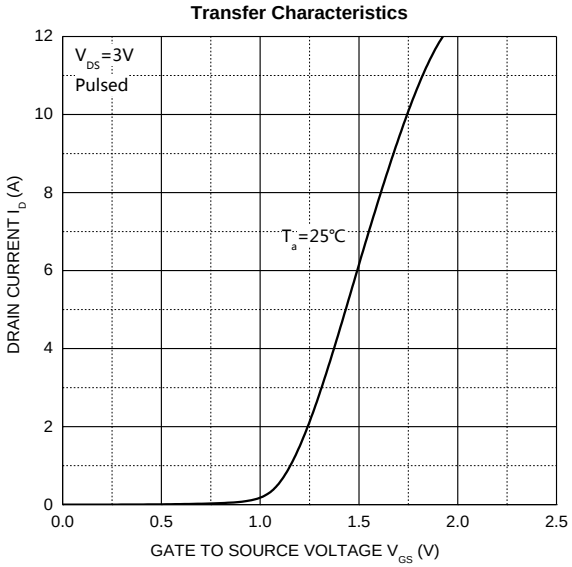
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250μA, V_{GS}=0V	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V	--	--	±100	nA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.45	--	1	V
Static Drain-Source On-Resistance Note3	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=3A	--	--	32	mΩ
		V_{GS}=2.5V, I_D=2A	--	--	40	mΩ
		V_{GS}=1.8V, I_D=2A	--	--	70	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=10V, I_D=6A	--	5	--	S
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
Drain-Source Diode Characteristics						
Body Diode Forward Voltage	V_{SD}	I_S=1.7A, V_{GS}=0V	--	--	1.2	V

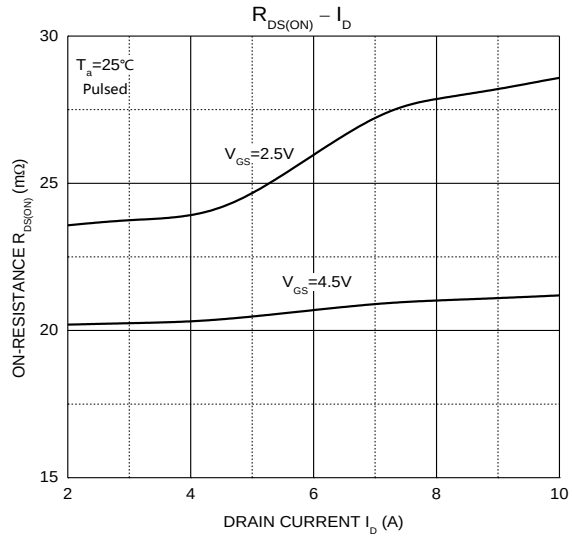
Note:
1.Repetitive rating : Pulse width limited by junction temperature.
2.Surface mounted on FR4 board, t≤10s.
3.Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

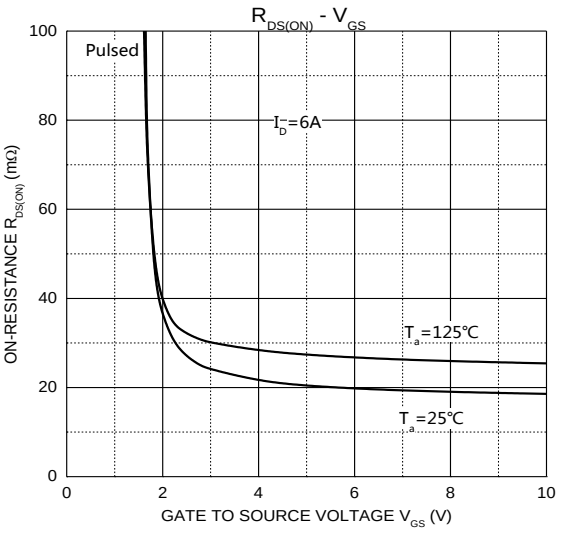
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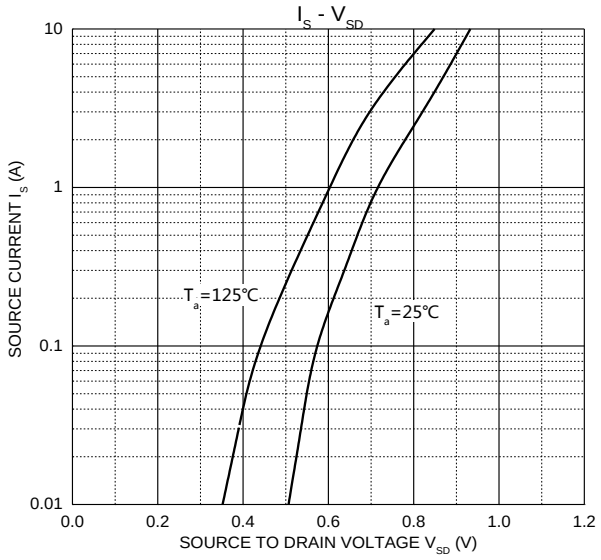
Typical Characteristics Curves

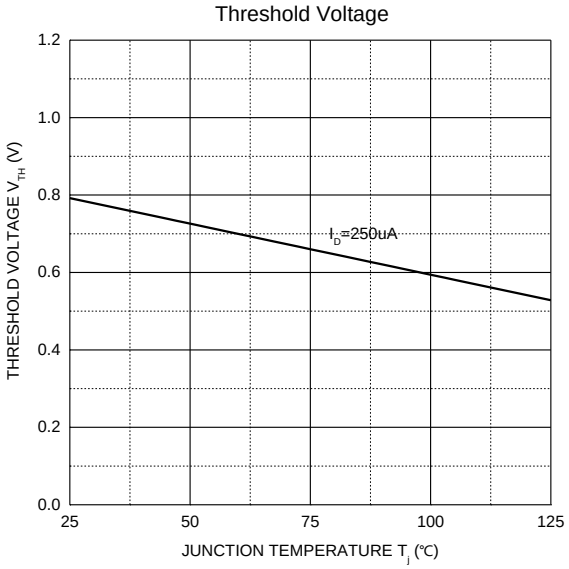








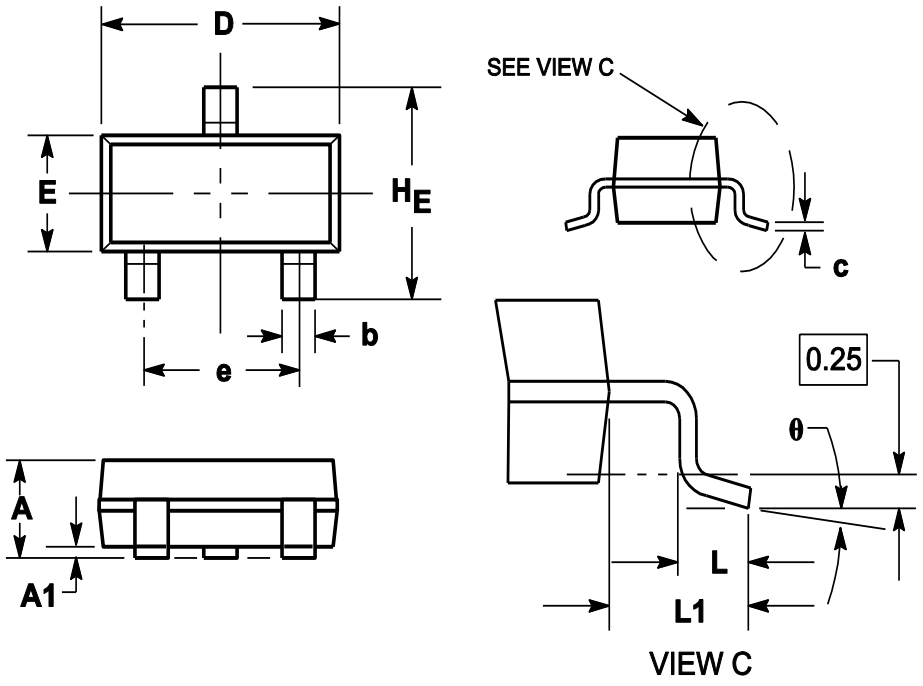




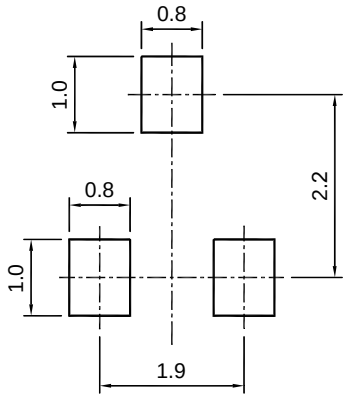
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Package Outline

SOT-23
unit:mm



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
H_E	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0^o		8^o



SOT-23

Recommended soldering pad

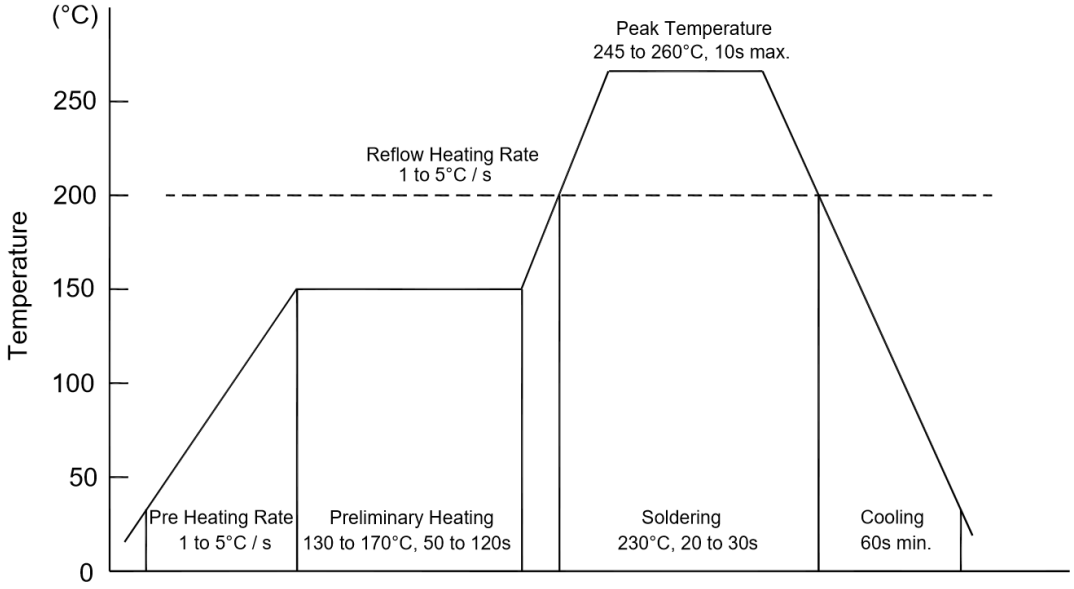
Ordering Information

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

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Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ^{O}C. If peak temperature is below 245 ^{O}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 ^{O}C
- Time: 3s max.
- Times: one time

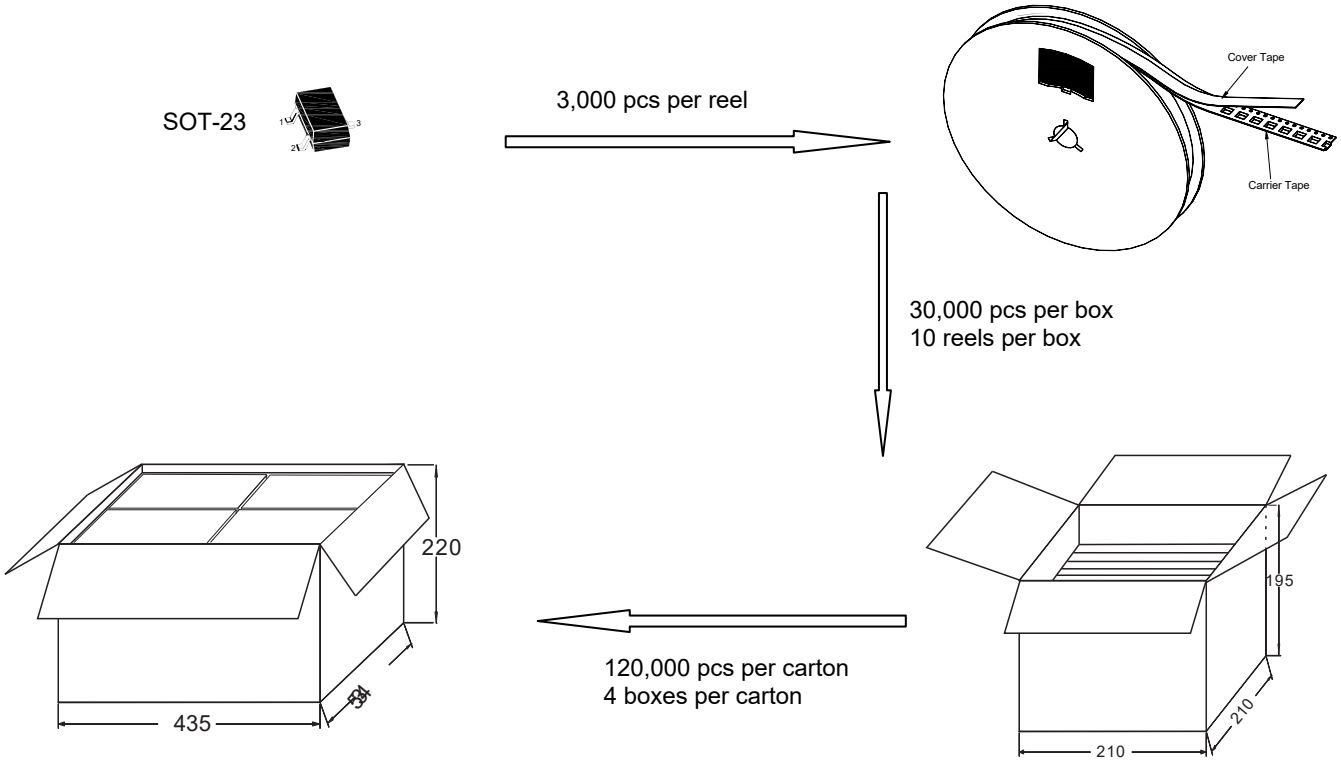
◆ Storage conditions

- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

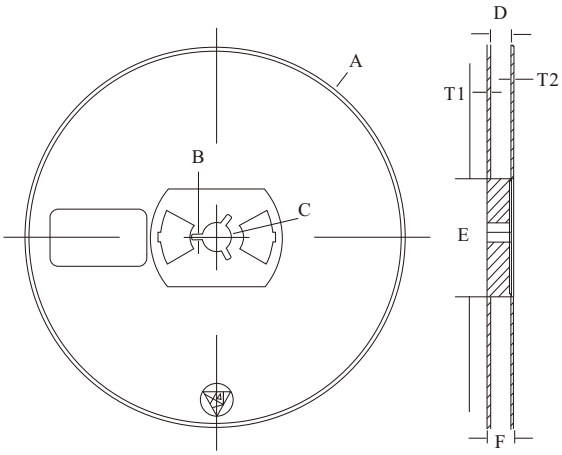
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Package Specifications

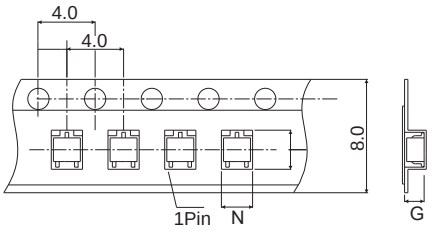
◆ The method of packaging



◆ Embossed tape and reel data



Reel (7")



Tape (8mm)

Symbol	Value (unit: mm)
A	Ø 177.8±1
B	2.7±0.2
C	Ø 13.5±0.2
E	Ø 54.5±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

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