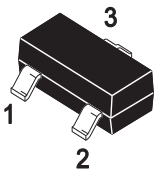
PJM2306NSA
N- Enhancement Mode Field Effect Transistor

DESCRIPTION

The PJM2306NSA uses advanced trench technology to provide excellent $R_{DS(on)}$ with low gate charge. This device is suitable for use as a load switch or DC/DC converter .



1Gate 2Source 3Drain
SOT-23 Plastic Package

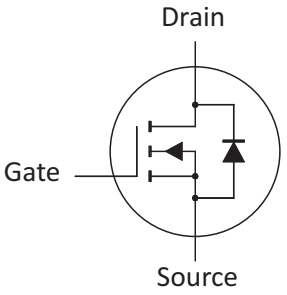
FEATURES

V_{DS} = 30V

I_D = 3.16A

$R_{DS(on)}$＜47mΩ@10V

$R_{DS(on)}$＜65mΩ@4.5V



MAXIMUM RATINGS

at T_A=25℃ unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current (T_J=125℃)[1.2]	I_D	3.16	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source Current(Diode Conduction)[1.2]	I_S	0.62	
Maximum Power Dissipation[1.2]	P_D	0.75	W
Thermal Resistance from Junction to Ambient (t≤5s)	$R_{\theta JA}$	100	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to150	℃

Notes :
1. Surface Mounted on 1”×1” FR4 board, t≤5s.
2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS

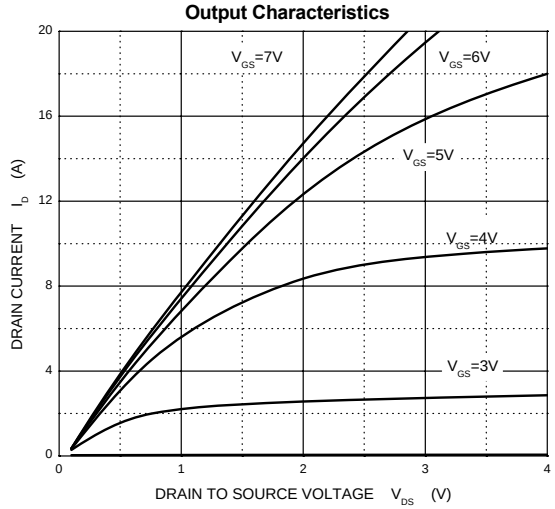
T_A =25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	V_{GS} = 0V, I_D =250μA	30			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0		3.0	
Gate-Body Leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			0.5	μA
Drain-Source On-Resistance(1)	$R_{DS(on)}$	V_{GS} =10V, I_D =3.5A		0.038	0.047	Ω
		V_{GS} =4.5V, I_D =2.8A		0.052	0.065	
Forward Transconductance(1)	g_{fs}	V_{DS} =4.5V, I_D =2.5A		7.0		S
Diode Forward Voltage	V_{SD}	I_S=1.25A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Gate Charge	Q_g	V_{DS} =15V,V_{GS} =5V,I_D =2.5A		3.0	4.5	nC
Total Gate Charge	Q_{gt}	V_{DS} =15V,V_{GS} =10V,I_D =2.5A		6	9	
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			0.6		
Gate Resistance	R_g	f =1.0MHz	2.5	5	7.5	Ω
Input Capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		305		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			29		
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V, R_L=15Ω, I_D ≈1A, V_{GEN}=10V,Rg=6Ω		7	11	ns
Rise Time	t_r			12	18	
Turn-Off Delay Time	$t_{d(off)}$			14	25	
Fall Time	t_f			6	10	

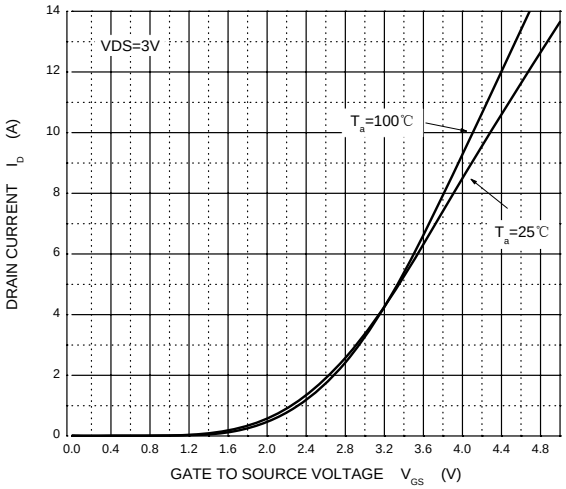
Notes :
1.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

TYPICAL CHARACTERISTICS CURVES

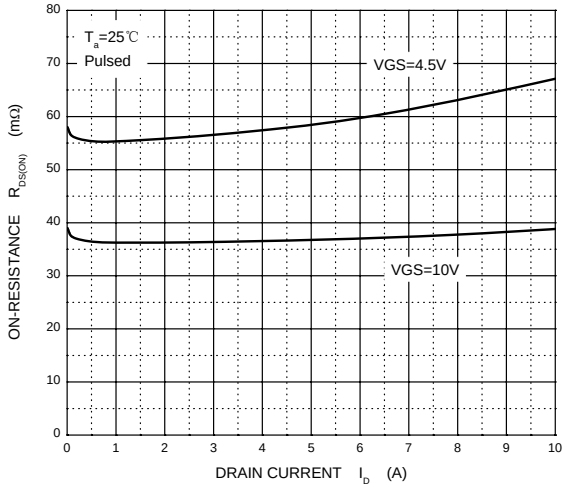
Output Characteristics



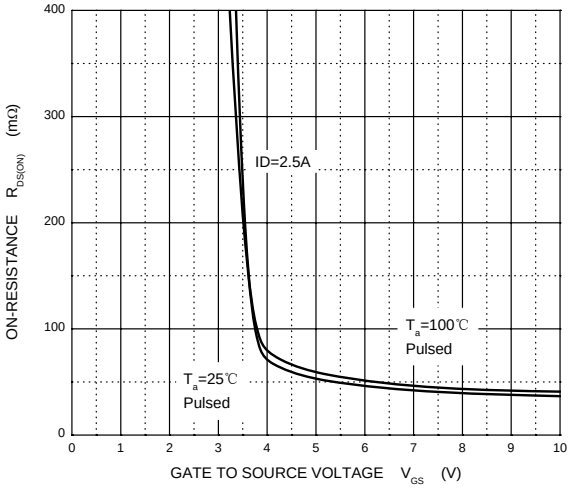
Transfer Characteristics



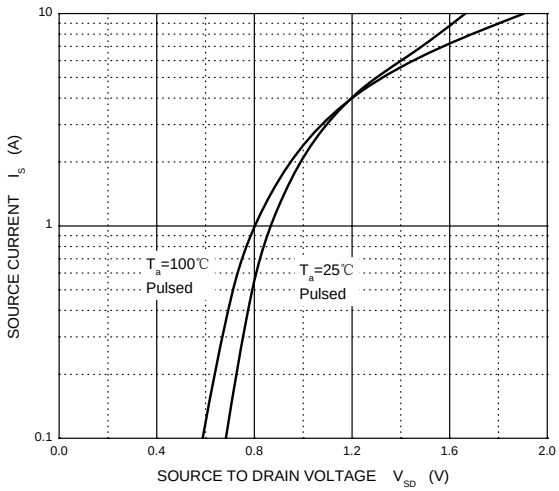
$R_{DS(ON)}$ —— I_D



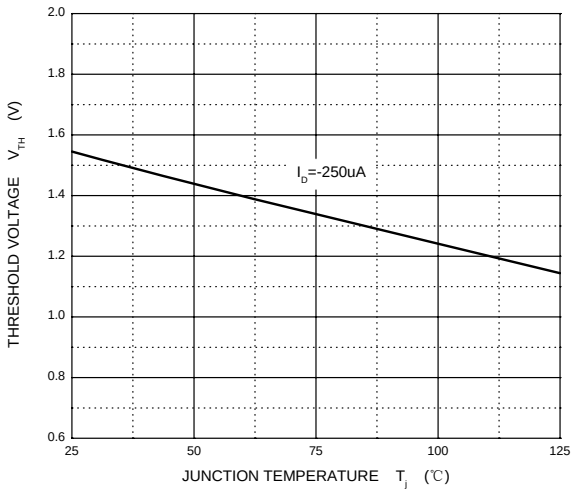
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

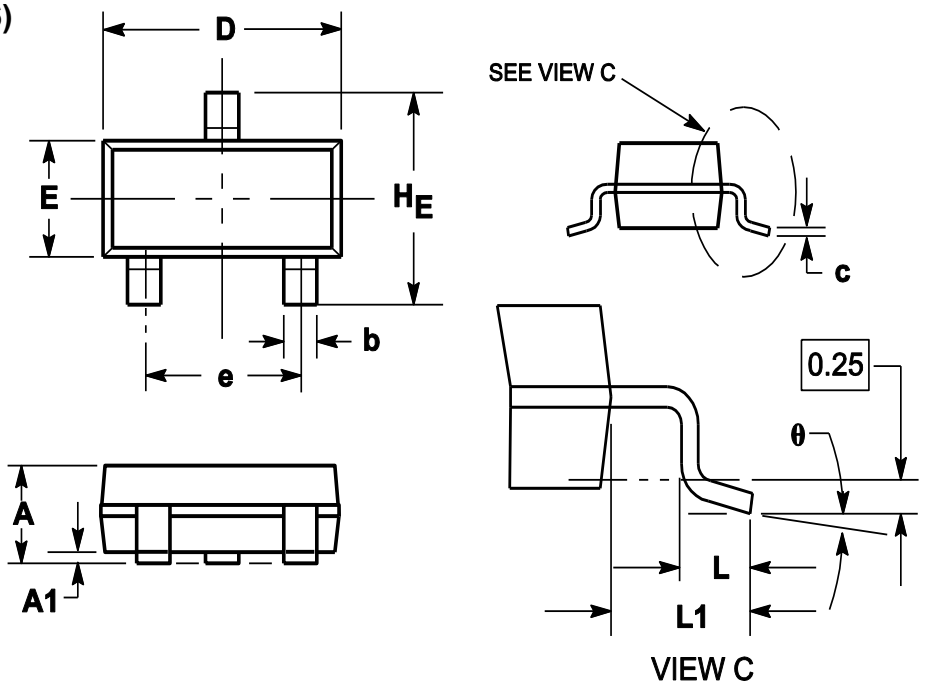


Threshold Voltage

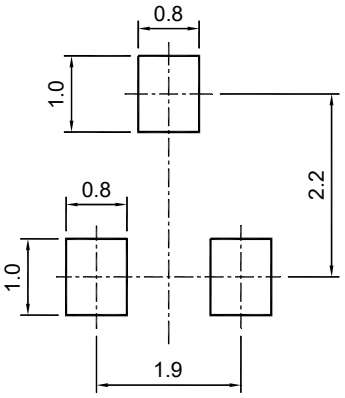


PACKAGE OUTLINE

SOT-23（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
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°		8°



SOT-23 (TO-236)

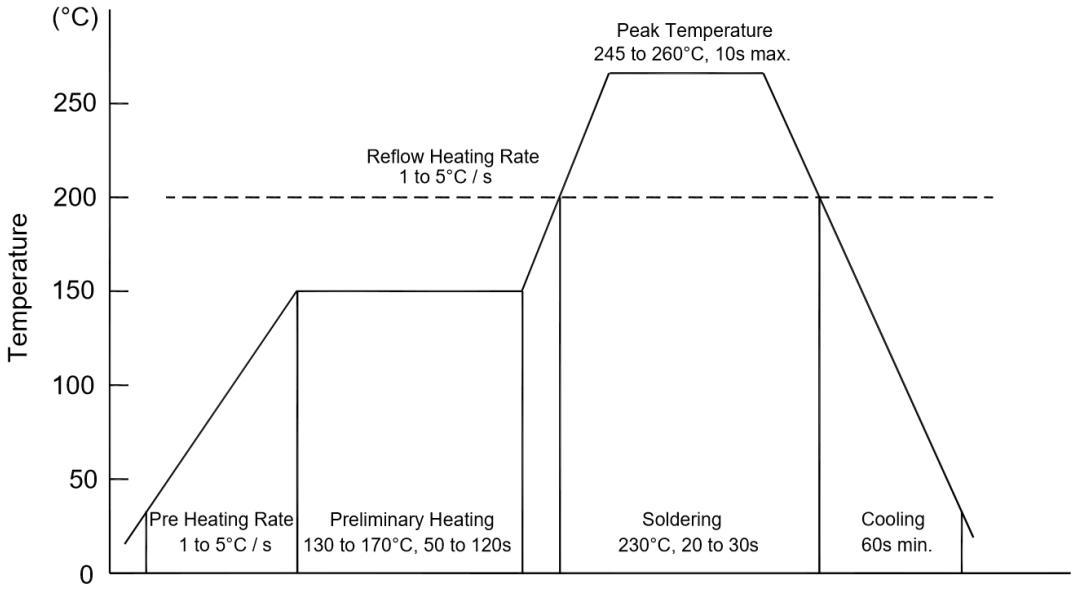
Recommended soldering pad

ORDERING INFORMATION

Device	Package	Shipping
PJM2306NSA	SOT-23	3000/Reel&Tape(7inch)

CONDITIONS OF SOLDERING AND STORAGE

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ℃. If peak temperature is below 245 ℃, 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 ℃
- Time: 3s max.
- Times: one time

◆ Storage conditions

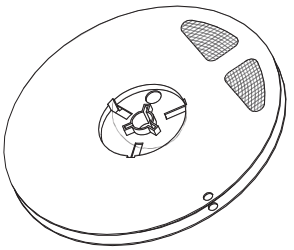
- **Temperature**
  5 to 40 ℃
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

PACKAGE SPECIFICATIONS

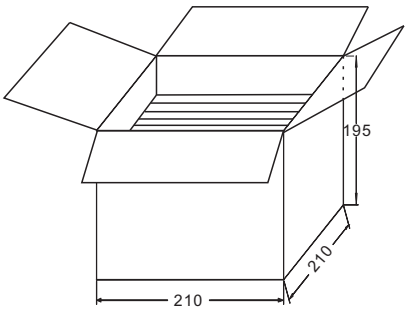
◆ **The method of packaging**

SOT-23 (TO-236)

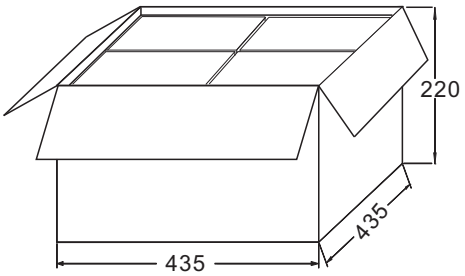
3,000 pcs per reel



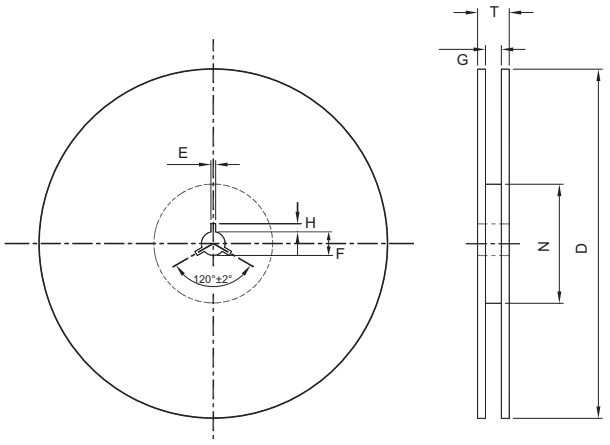
30,000 pcs per box
10 reels per box



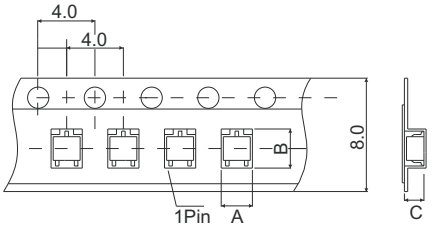
120,000 pcs per carton
4 boxes per carton



◆ 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