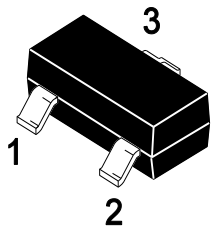
PJM3402NSA
N-Channel MOSFET

Features

- Fast Switching
- Low $R_{DS(ON)}$ and Gate Charge
- Low Reverse Transfer Capacitance

SOT-23



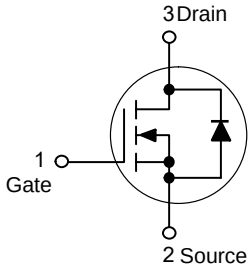
1. Gate 2.Source 3.Drain

Marking: R2

Applications

- Load Switch
- PWM Applications

Schematic diagram



Absolute Maximum Ratings

Ratings at T_A =25°C unless otherwise specified.

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	4	V
Pulsed Drain Current Note1	I_{DM}	15	A
Power Dissipation	P_D	1.2	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	$R_{\theta JA}$	104	°C/W
Maximum Junction-to-Lead	$R_{\theta JL}$	63	°C/W

Electrical Characteristics (T_J = 25℃)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250μA, V_{GS}=0V	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, 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	0.7	--	1.5	V
Static Drain-Source On-Resistance Note3	$R_{DS(ON)}$	V_{GS}=10V, I_D=2.0A	--	--	52	mΩ
		V_{GS}=4.5V, I_D=2.0A	--	--	65	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=5V, I_D=3.6A	--	14	--	S
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f=1MHz	--	235	--	pF
Output Capacitance	C_{oss}		--	35	--	pF
Reverse Transfer Capacitance	C_{rss}		--	18	--	pF
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=15V, I_D=4A	--	10	--	nC
Gate Source Charge	Q_{gs}		--	0.95	--	nC
Gate Drain Charge	Q_{gd}		--	1.6	--	nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=3.75Ω, R_{GEN} =3Ω	--	3.5	--	ns
Turn-On Rise Time	t_r		--	1.5	--	ns
Turn-Off DelayTime	$t_{D(off)}$		--	17.5	--	ns
Turn-Off Fall Time	t_f		--	2.5	--	ns
Source-Drain Diode characteristics						
Body Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V	--	0.75	1.5	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Electrical Characteristics Curves

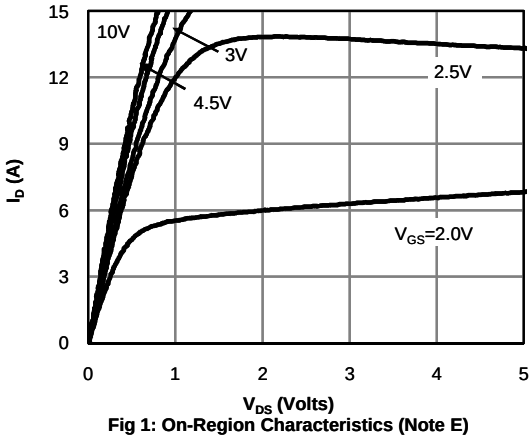


Fig 1: On-Region Characteristics (Note E)

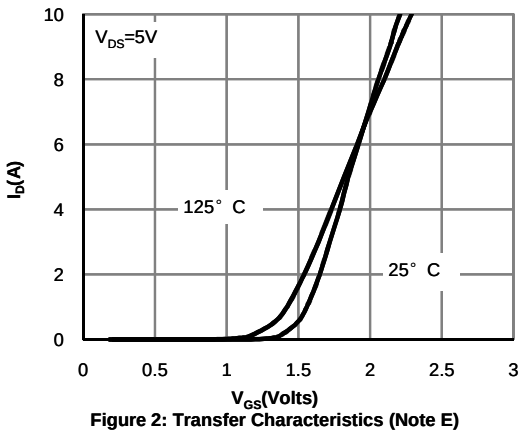


Figure 2: Transfer Characteristics (Note E)

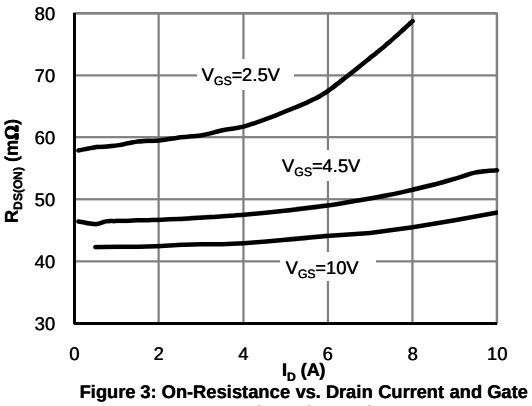


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

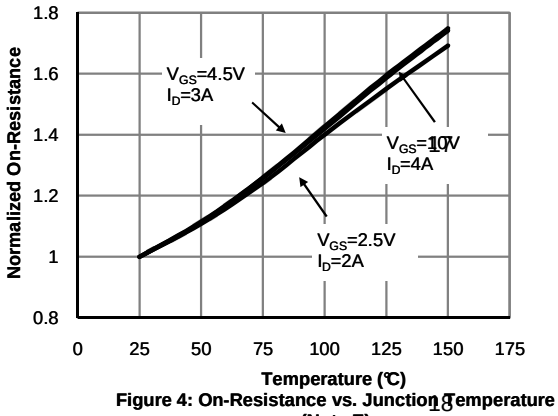


Figure 4: On-Resistance vs. Junction Temperature (Note E)

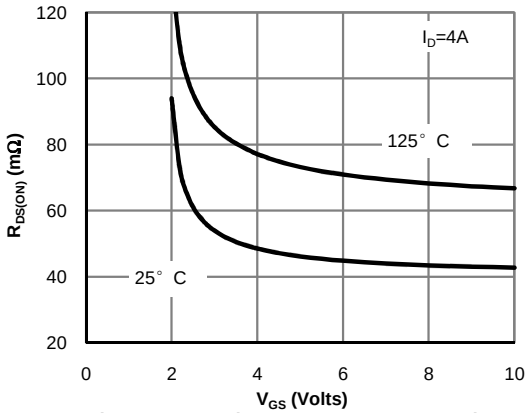


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

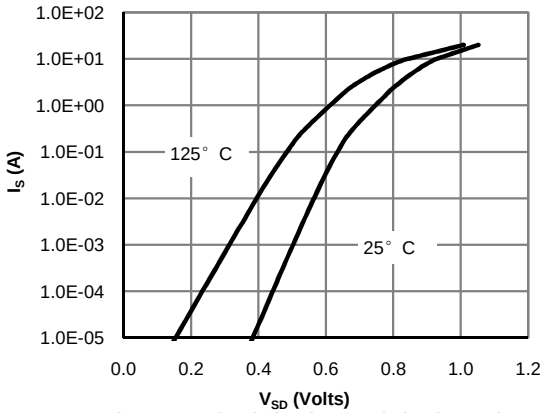


Figure 6: Body-Diode Characteristics (Note E)

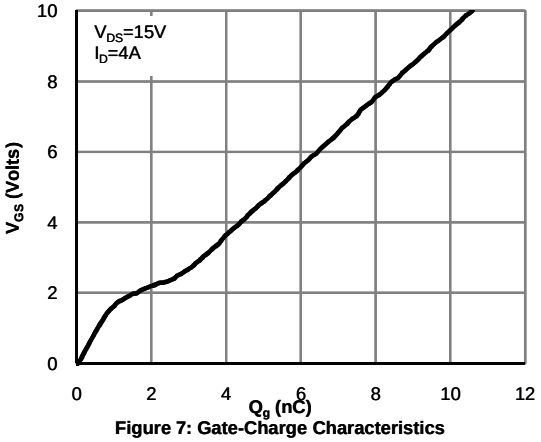


Figure 7: Gate-Charge Characteristics

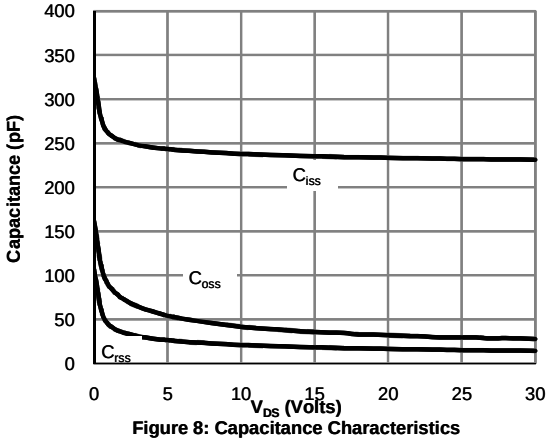


Figure 8: Capacitance Characteristics

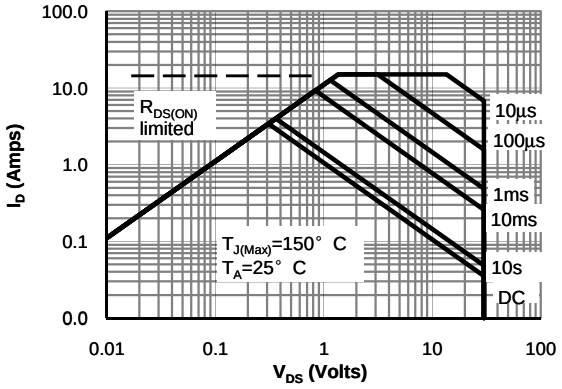


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

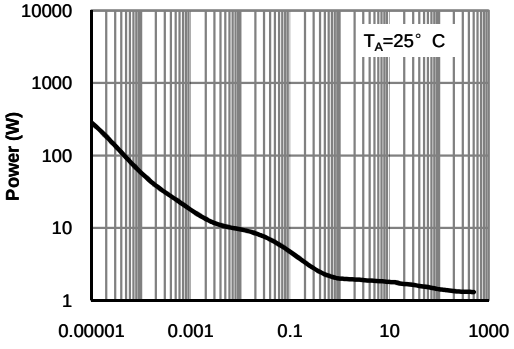


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

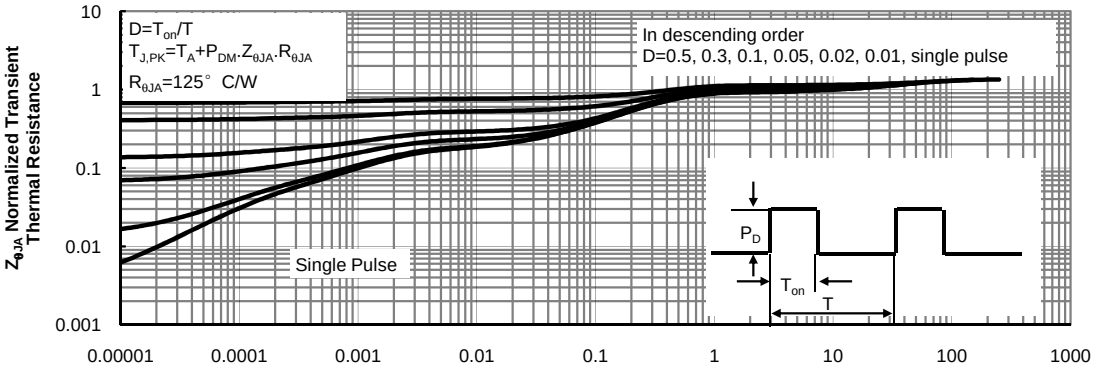
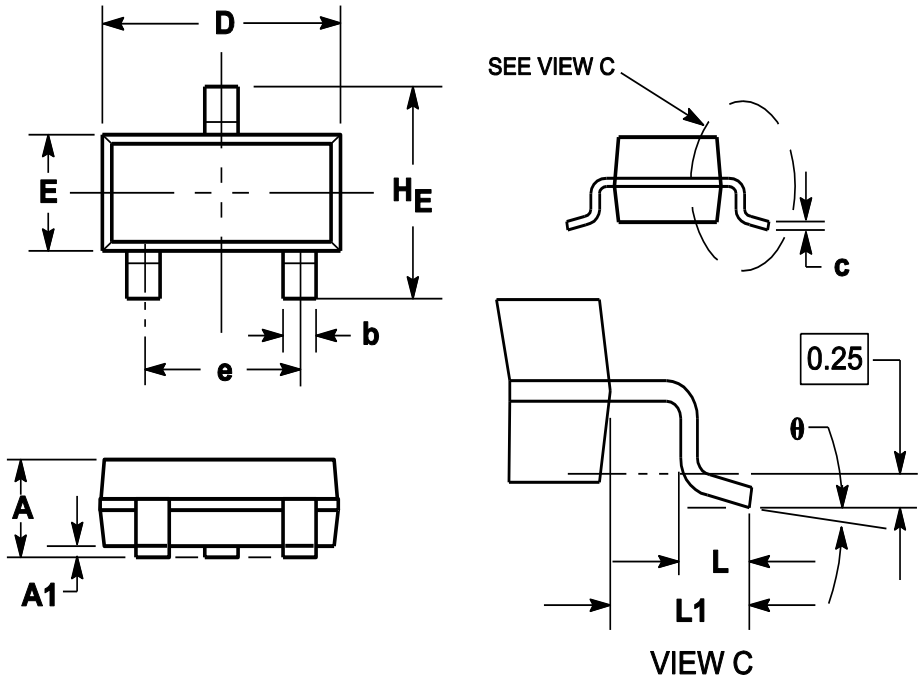


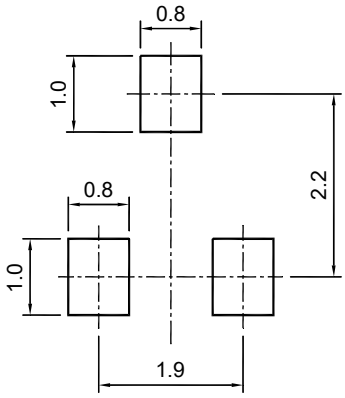
Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

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^o		8^o



SOT-23 (TO-236)

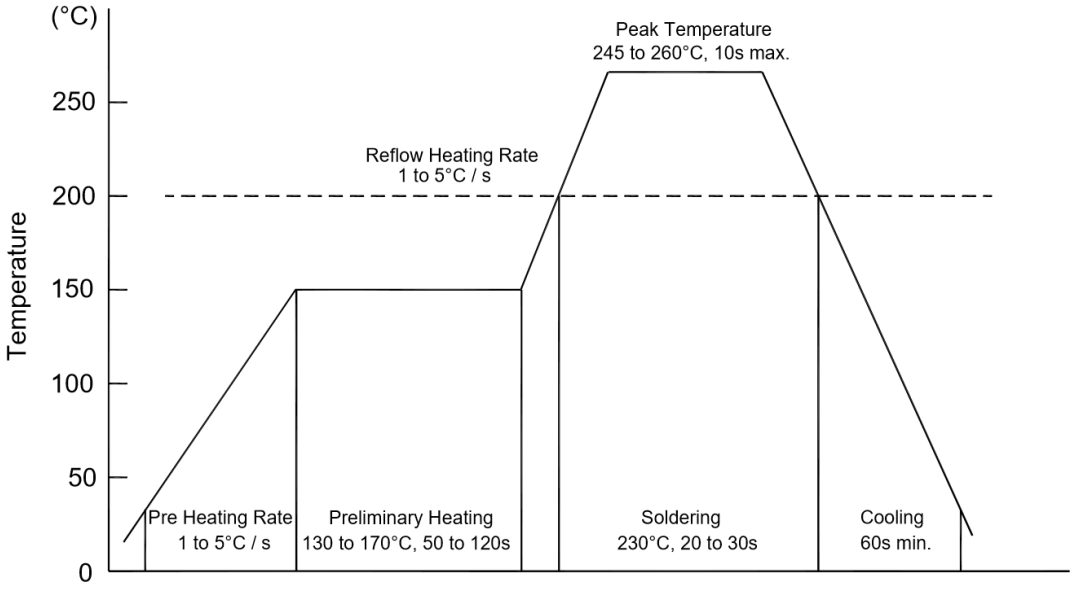
Recommended Soldering Pad

Ordering Information

Device	Package	Shipping
PJM3402NSA	SOT-23	3,000PCS/T&R (7 inch)

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

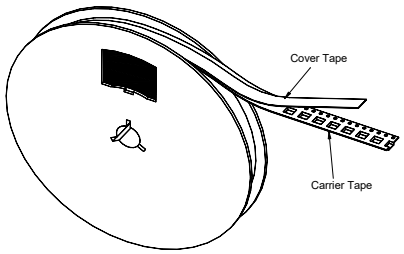
- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

Package Specifications

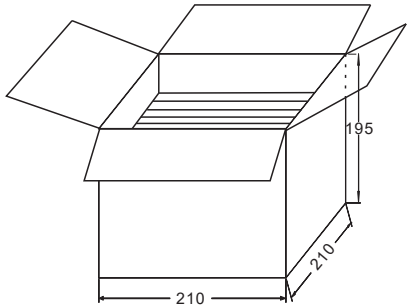
◆ The method of packaging

SOT-23 (TO-236)

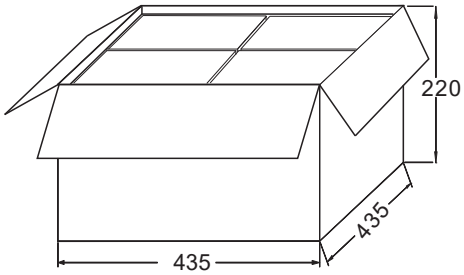
3,000 pcs per reel



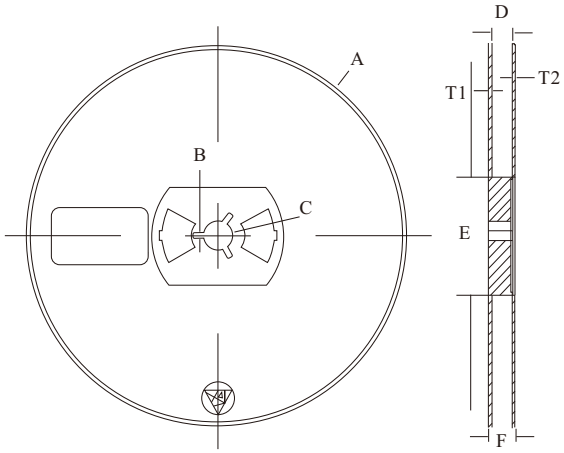
30,000 pcs per box
10 reels per box



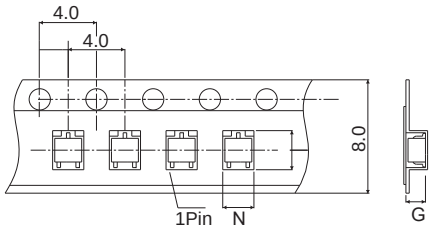
120,000 pcs per carton
4 boxes per carton



◆ Embossed tape and reel data



Reel (7")



Tape (8mm)

Symbol	Value (unit: mm)
A	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