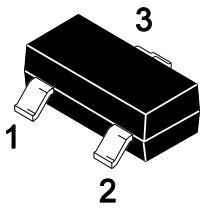
# PJM3401PSA
## P-Enhancement Field Effect Transistor

### Features

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

**SOT-23**



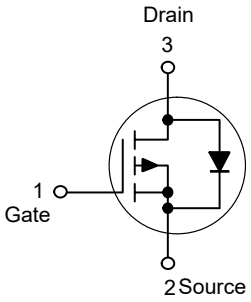

1. Gate 2.Source 3.Drain

**Marking: R1**

### Applications

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

**Schematic Diagram**




### Absolute Maximum Ratings

Ratings at $T_A$=25°C unless otherwise specified.

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Drain-Source Voltage | $-V_{DS}$ | 30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±12 | V |
| Continuous Drain Current | $-I_D$ | 4.1 | 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 | $R_{\theta JA}$ | 104 | °C/W |

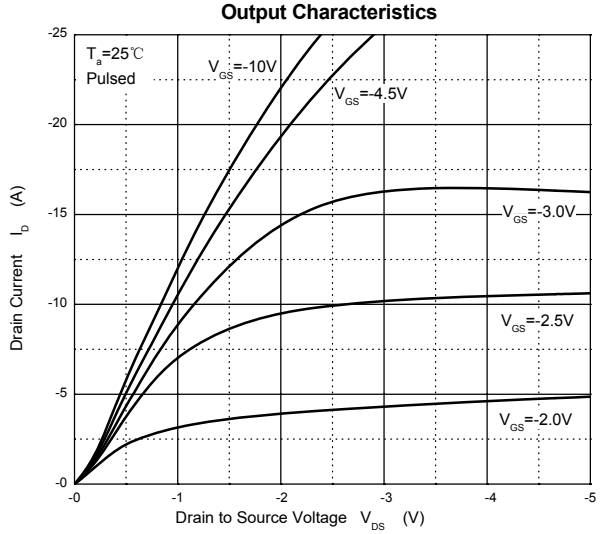
## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-source breakdown voltage | $-V_{(BR)DSS}$ | $V_{GS}$ = 0V, $I_D$=-250μA | 30 | -- | -- | V |
| Drain to Source Leakage 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 Note1 | $-V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =-250μA | 0.7 | -- | 1.3 | V |
| Drain-source on-resistance Note1 | $R_{DS(on)}$ | $V_{GS}$ =-10V, $I_D$ =-4.1A | -- | -- | 65 | mΩ |
| | | $V_{GS}$ =-4.5V, $I_D$ =-2A | -- | -- | 85 | mΩ |
| Forward transconductance Note1 | $g_{FS}$ | $V_{DS}$ =-5V, $I_D$ =-5A | 7 | -- | -- | S |
| **Dynamic characteristics** | | | | | | |
| 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** | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD}$=-15V, $V_{GS}$=-10V， $R_{GEN}$ =6Ω, $R_L$ =3.6Ω, | -- | -- | 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 voltage | $-V_{DS}$ | $V_{GS}$ =0V, $I_S$=-1A | -- | -- | 1 | V |

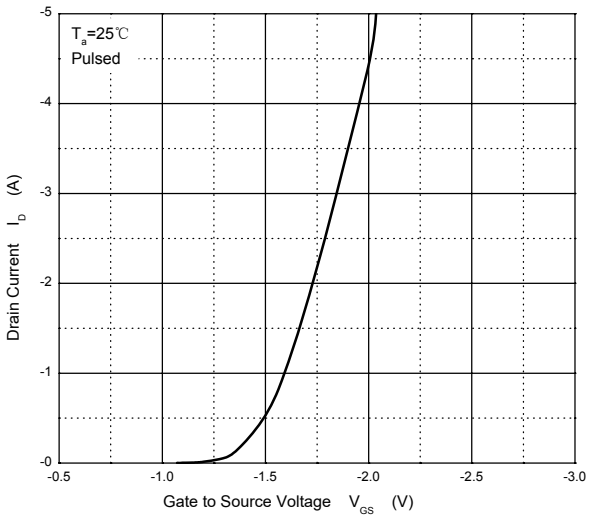
Notes: 1. Pulse test ; pulse width ≤300μs, duty cycle ≤2%.

## Typical Curves

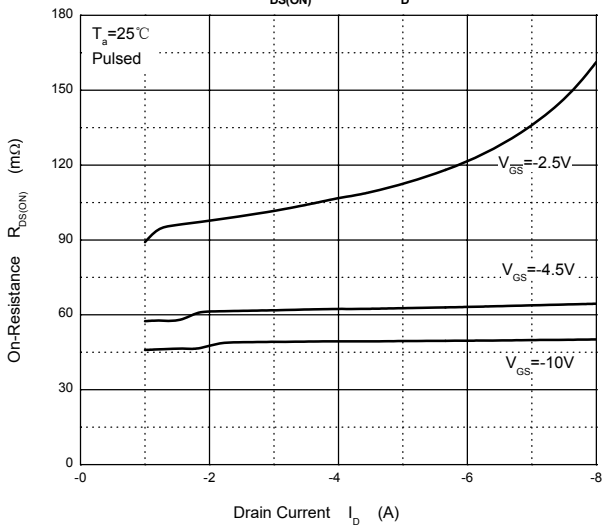
**Output Characteristics**



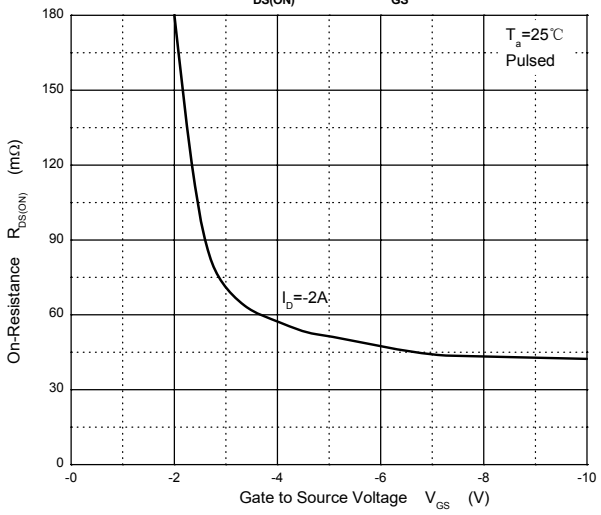

**Transfer Characteristics**



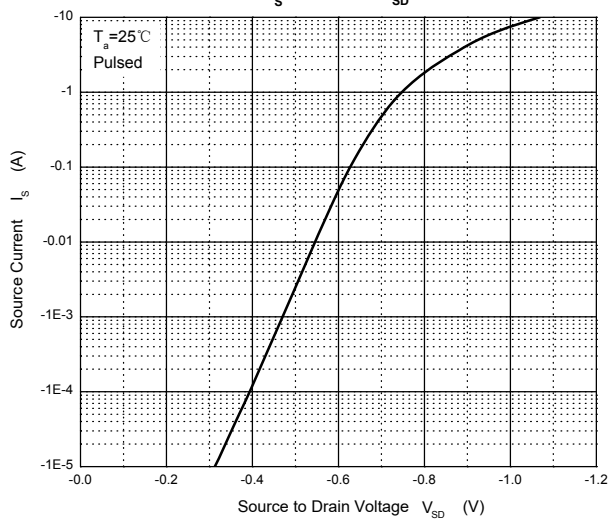

**$R_{DS(ON)}$ — $I_D$**



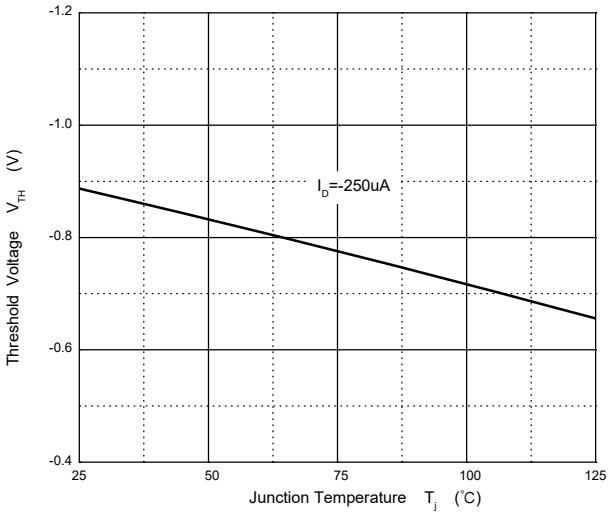

**$R_{DS(ON)}$ — $V_{GS}$**




**$I_S$ — $V_{SD}$**

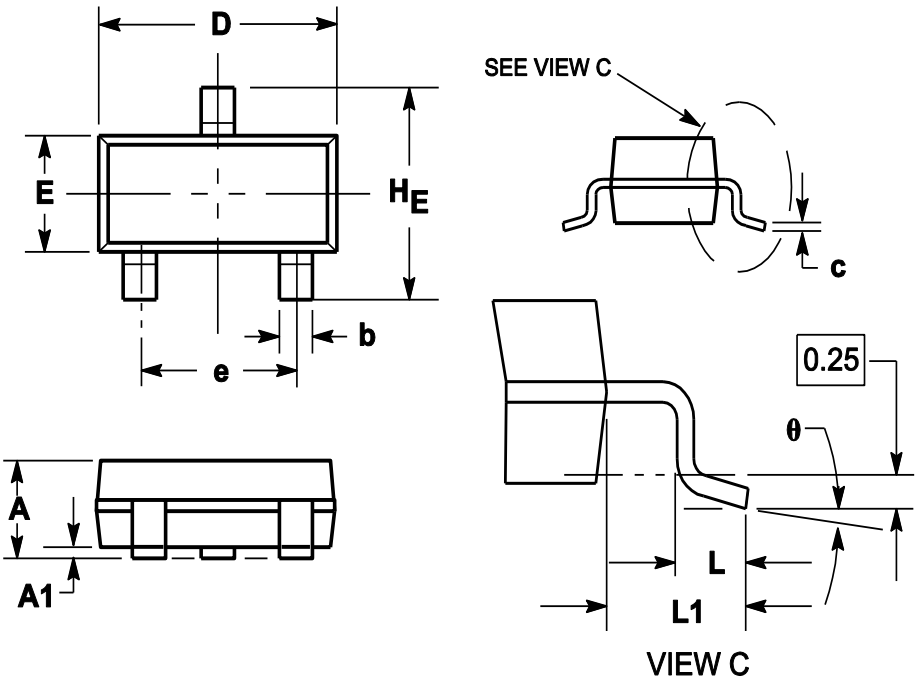



**Threshold Voltage**

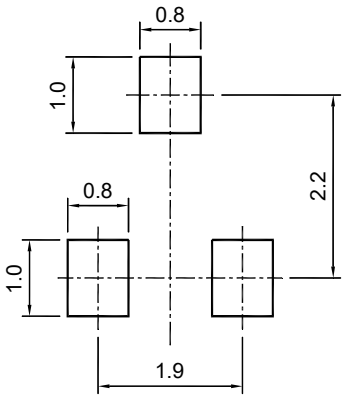


## Package Outline

### 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 | $0^o$ | | $8^o$ |




SOT-23 (TO-236)

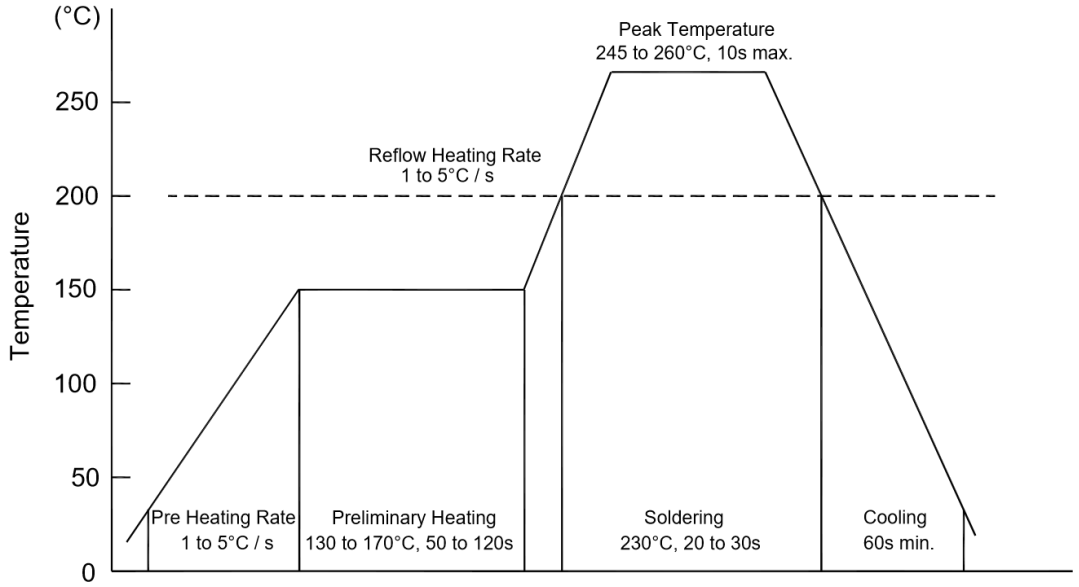
**Recommended Soldering Pad**

## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| PJM3401PSA | SOT-23 | 3000/Reel&Tape(7inch) |

## 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

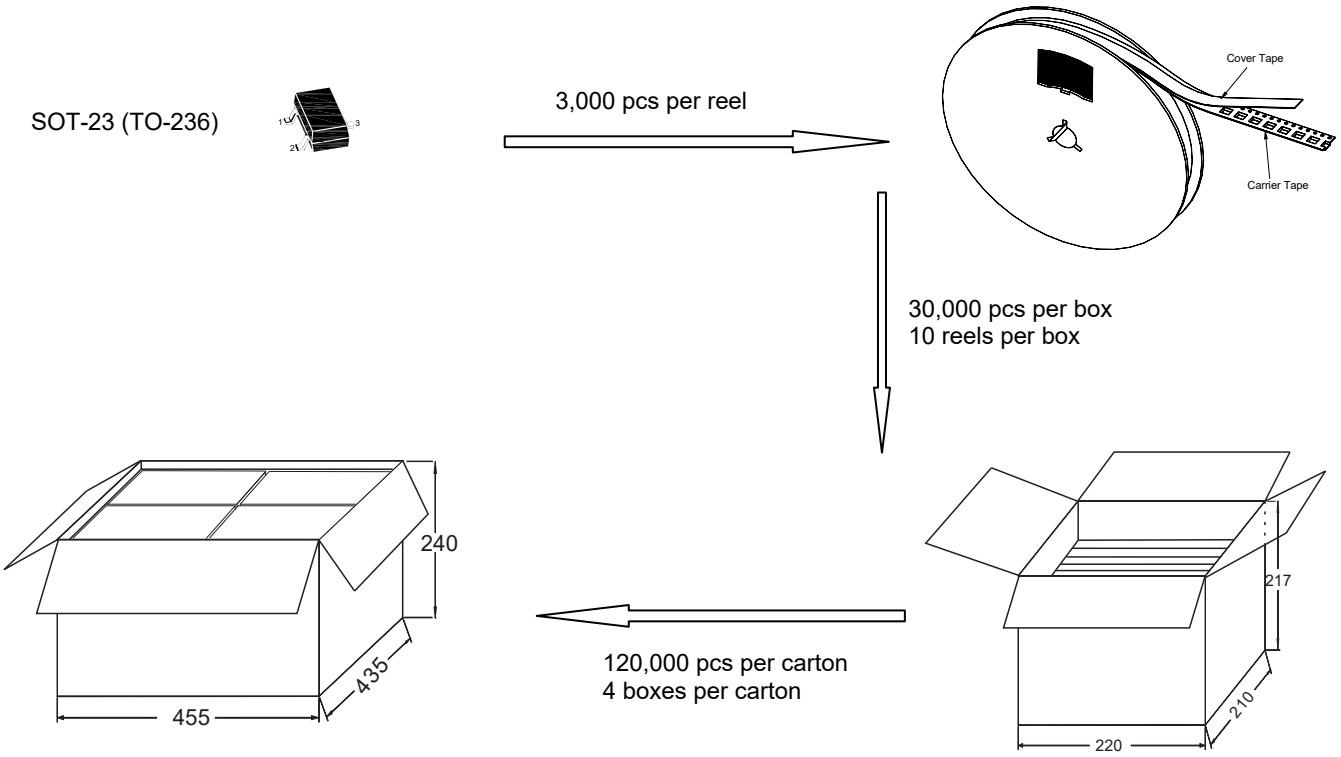
- Temperature: 370 $^{O}$C
- Time:  3s max.
- Times: one time

### ◆ Storage conditions

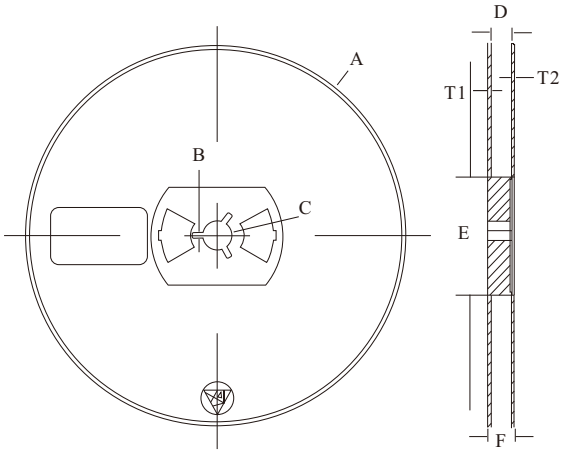
- **Temperature**
  5 to 40 $^{O}$C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

## Package Specifications

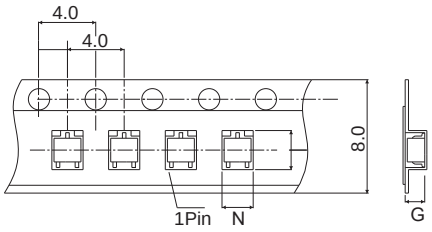
### 1.The method of packaging and dimension are shown as below figure. (Units:mm)




### 2. Tape and reel data (Units:mm)




**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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