



# PJM05P60SC

## P-Channel Enhancement Mode Power MOSFET

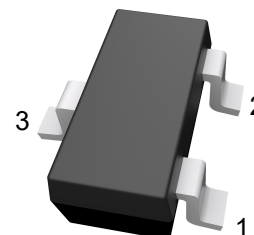
### Features

- Surface mount package
- High density cell design for ultra low  $R_{DS(on)}$
- $V_{DS} = -60V, I_D = -5A$   
 $R_{DS(on)} < 75m\Omega @ V_{GS} = -10V$

### Application

- Load switch and in PWM applications
- Power management

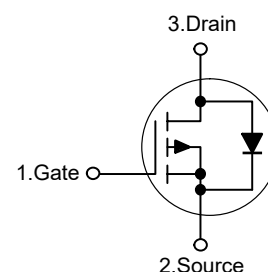
### SOT-23-3



1. Gate 2. Source 3. Drain

**Marking Code: KM**

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter                             | Symbol    | Value       | Unit |
|---------------------------------------|-----------|-------------|------|
| Drain-Source Voltage                  | $-V_{DS}$ | 60          | V    |
| Gate-Source Voltage                   | $V_{GS}$  | $\pm 20$    | V    |
| Drain Current-Continuous              | $-I_D$    | 5           | A    |
| Drain Current-Pulsed <sup>Note1</sup> | $-I_{DM}$ | 16          | A    |
| Maximum Power Dissipation             | $P_D$     | 1.5         | W    |
| Junction Temperature                  | $T_J$     | 150         | °C   |
| Storage Temperature Range             | $T_{STG}$ | -55 to +150 | °C   |

### Thermal Characteristics

|                                           |                 |      |      |
|-------------------------------------------|-----------------|------|------|
| Maximum Junction-to-Case <sup>Note2</sup> | $R_{\theta JC}$ | 83.3 | °C/W |
|-------------------------------------------|-----------------|------|------|



# PJM05P60SC

## P-Channel Enhancement Mode Power MOSFET

### Electrical Characteristics

(Ta=25°C unless otherwise specified)

| Parameter                                   | Symbol                | Test Condition                                                                              | Min. | Typ. | Max. | Unit |
|---------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------|------|------|------|------|
| Static Characteristics                      |                       |                                                                                             |      |      |      |      |
| Drain-Source Breakdown Voltage              | -V <sub>(BR)DSS</sub> | V <sub>GS</sub> =0V,I <sub>D</sub> =-250μA                                                  | 60   | --   | --   | V    |
| Zero Gate Voltage Drain Current             | -I <sub>DSS</sub>     | V <sub>DS</sub> =-60V,V <sub>GS</sub> =0V                                                   | --   | --   | 1    | μA   |
| Gate-Body Leakage Current                   | I <sub>GSS</sub>      | V <sub>GS</sub> =±20V,V <sub>DS</sub> =0V                                                   | --   | --   | ±100 | nA   |
| Gate Threshold Voltage <sup>Note3</sup>     | -V <sub>GS(th)</sub>  | V <sub>DS</sub> =V <sub>GS</sub> ,I <sub>D</sub> =-250μA                                    | 1    | 1.5  | 2    | V    |
| Drain-Source On-Resistance <sup>Note3</sup> | R <sub>DS(on)</sub>   | V <sub>GS</sub> =-10V,I <sub>D</sub> =-4A                                                   | --   | 55   | 70   | mΩ   |
|                                             |                       | V <sub>GS</sub> =-4.5V,I <sub>D</sub> =-3A                                                  | --   | 65   | 80   | mΩ   |
| Forward Transconductance <sup>Note3</sup>   | g <sub>FS</sub>       | V <sub>DS</sub> =-5V,I <sub>D</sub> =-1A                                                    | --   | 6    | --   | S    |
| Dynamic Characteristics                     |                       |                                                                                             |      |      |      |      |
| Input Capacitance                           | C <sub>iss</sub>      | V <sub>DS</sub> =-30V,V <sub>GS</sub> =0V,f=1MHz                                            | --   | 930  | --   | pF   |
| Output Capacitance                          | C <sub>oss</sub>      |                                                                                             | --   | 85   | --   | pF   |
| Reverse Transfer Capacitance                | C <sub>rss</sub>      |                                                                                             | --   | 35   | --   | pF   |
| Switching Characteristics                   |                       |                                                                                             |      |      |      |      |
| Turn-on Delay Time                          | t <sub>d(on)</sub>    | V <sub>DD</sub> =-30V, ,V <sub>GS</sub> =-10V,<br>R <sub>GEN</sub> =3Ω,R <sub>L</sub> =7.5Ω | --   | 8    | --   | nS   |
| Turn-on Rise Time                           | t <sub>r</sub>        |                                                                                             | --   | 4    | --   | nS   |
| Turn-off Delay Time                         | t <sub>d(off)</sub>   |                                                                                             | --   | 32   | --   | nS   |
| Turn-off Fall Time                          | t <sub>f</sub>        |                                                                                             | --   | 7    | --   | nS   |
| Total Gate Charge                           | Q <sub>g</sub>        | V <sub>DS</sub> =-30V,I <sub>D</sub> =-10A, V <sub>GS</sub> =-4V                            | --   | 25   | --   | nC   |
| Gate-Source Charge                          | Q <sub>gs</sub>       |                                                                                             | --   | 3    | --   | nC   |
| Gate-Drain Charge                           | Q <sub>gd</sub>       |                                                                                             | --   | 7    | --   | nC   |
| Source-Drain Diode Characteristics          |                       |                                                                                             |      |      |      |      |
| Diode Forward Voltage <sup>Note3</sup>      | -V <sub>SD</sub>      | V <sub>GS</sub> =0V,I <sub>S</sub> =-5A                                                     | --   | --   | 1.2  | V    |
| Diode Forward Current <sup>Note2</sup>      | -I <sub>S</sub>       |                                                                                             | --   | --   | 5    | A    |

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

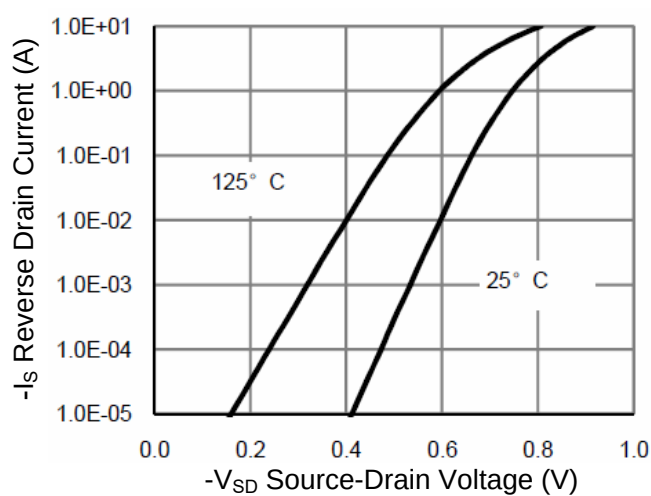
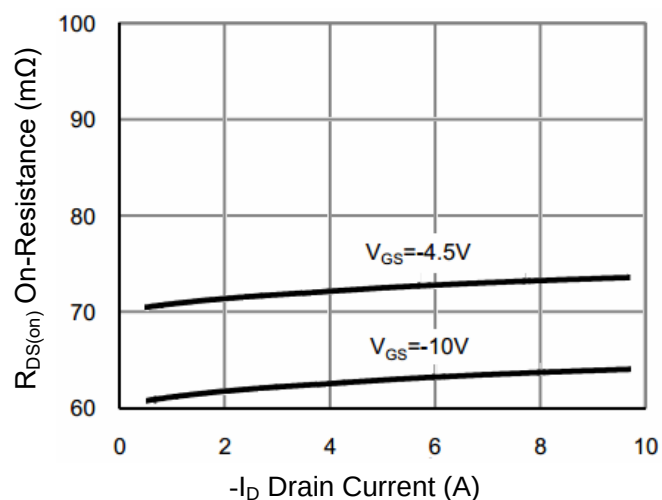
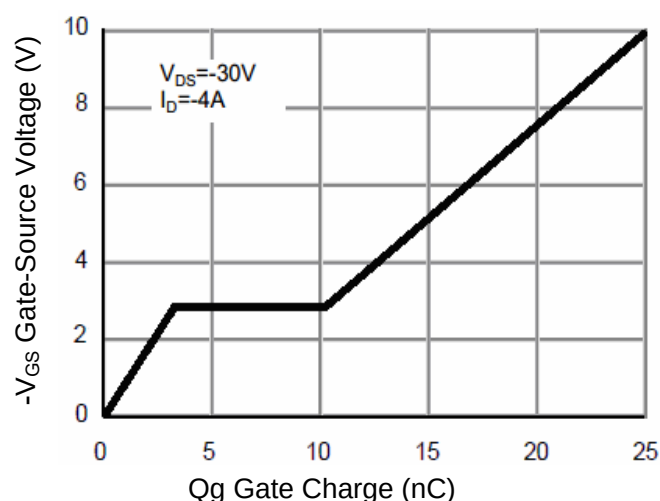
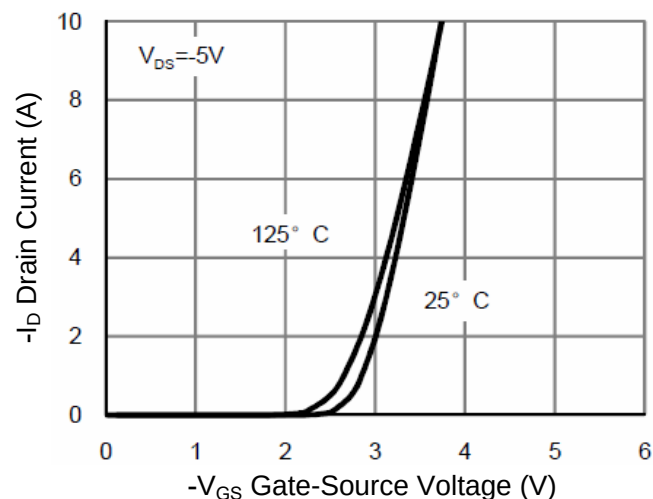
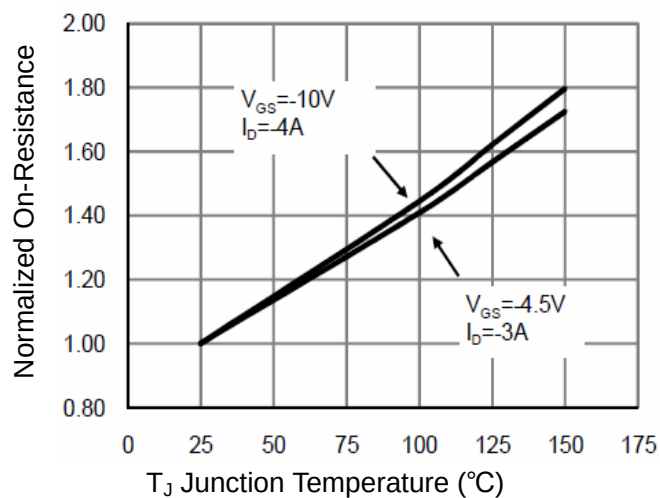
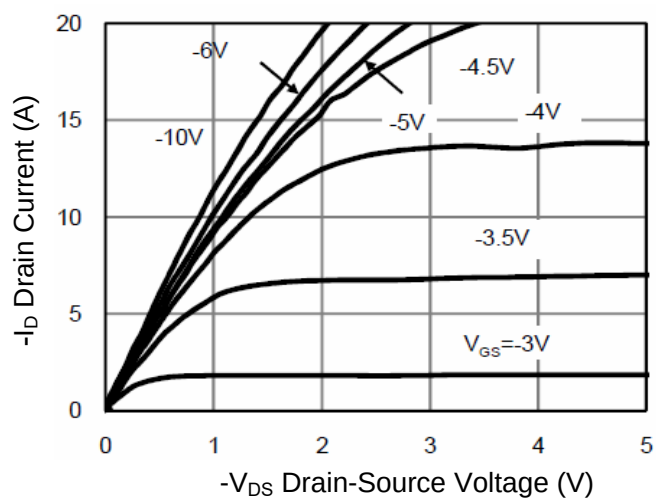
3. Pulse Test: Pulse width  $\leq 300\mu s$ , duty cycles  $\leq 2\%$ .



# PJM05P60SC

## P-Channel Enhancement Mode Power MOSFET

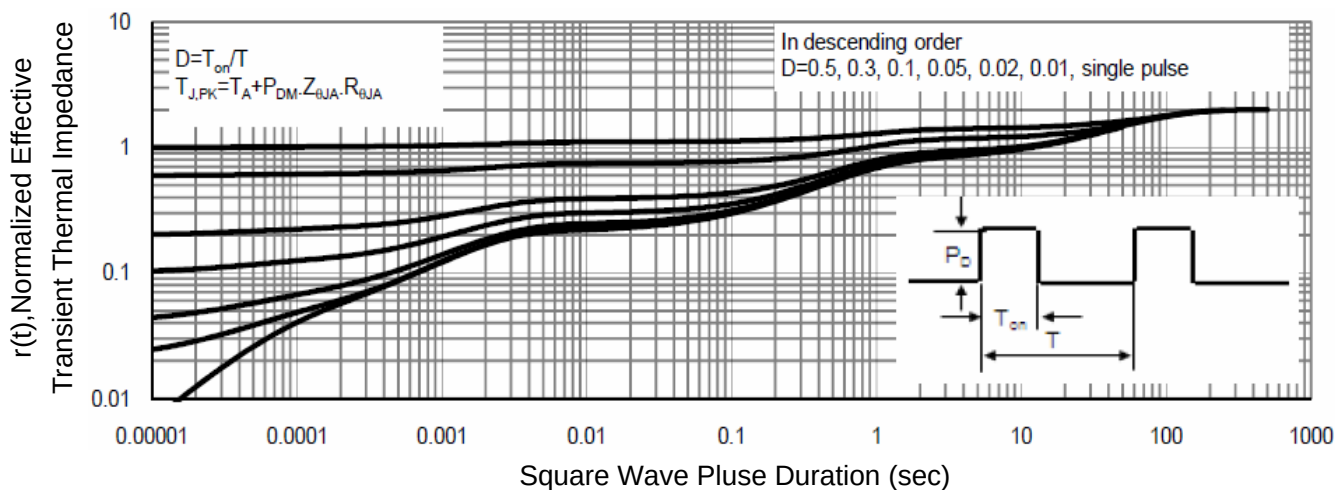
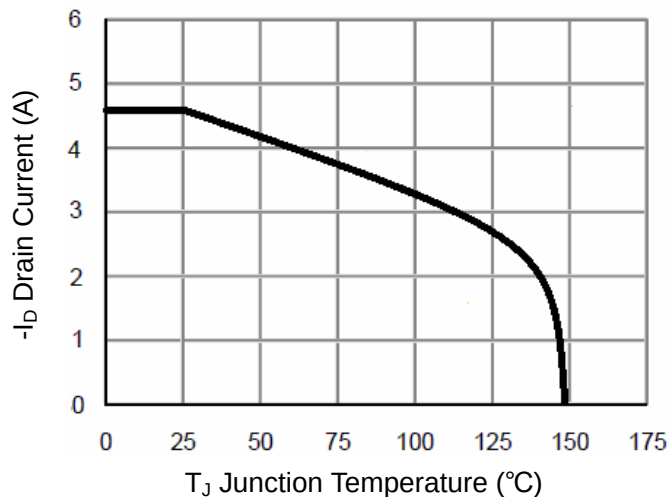
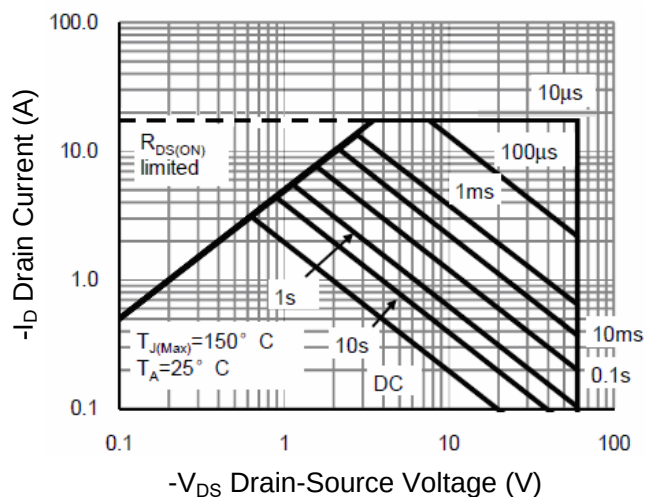
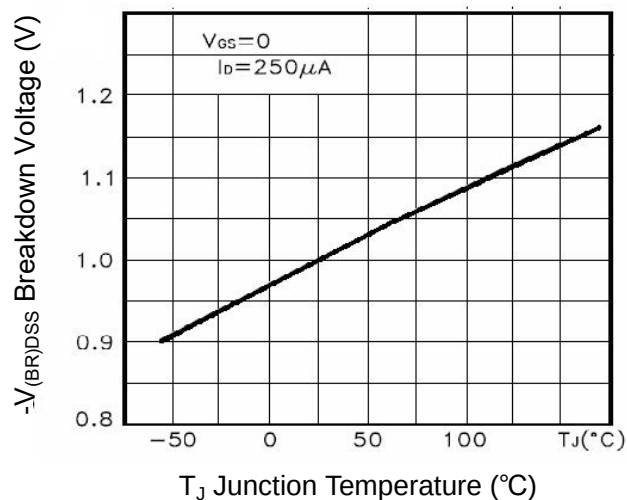
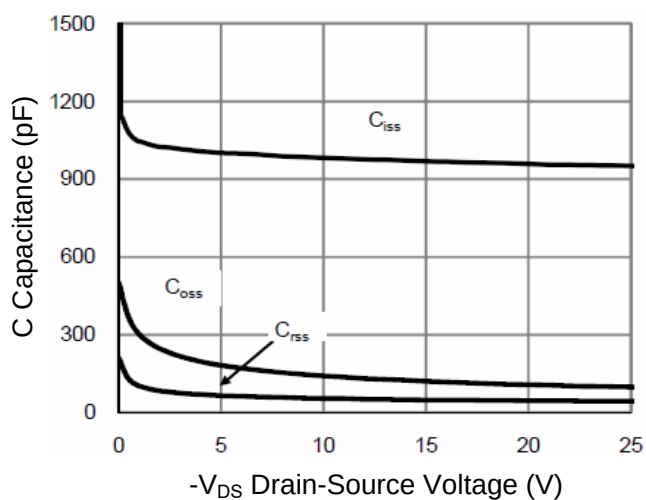
### Typical Characteristic Curves





# PJM05P60SC

## P-Channel Enhancement Mode Power MOSFET





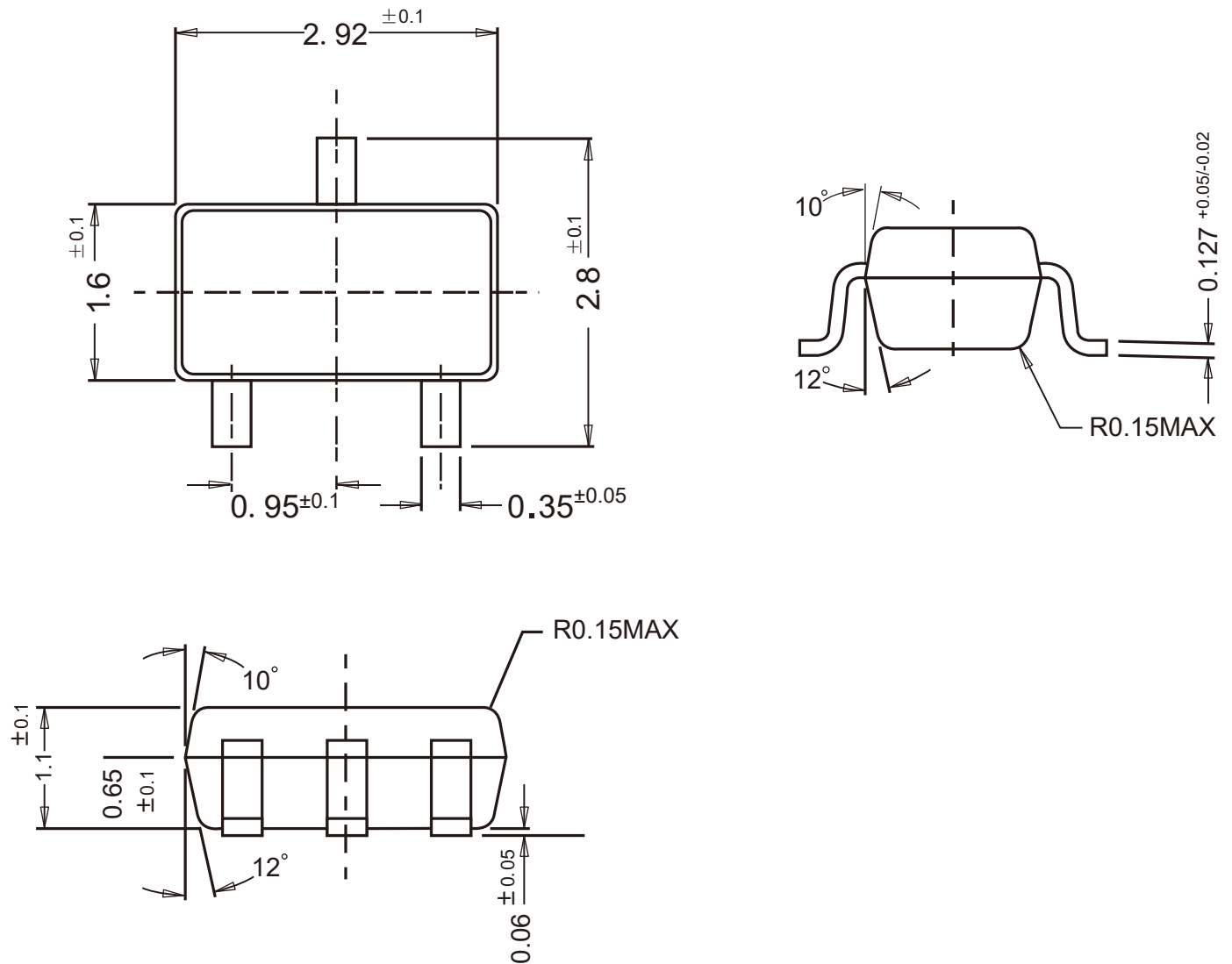
# PJM05P60SC

## P-Channel Enhancement Mode Power MOSFET

### Package Outline

SOT-23-3

Dimensions in mm



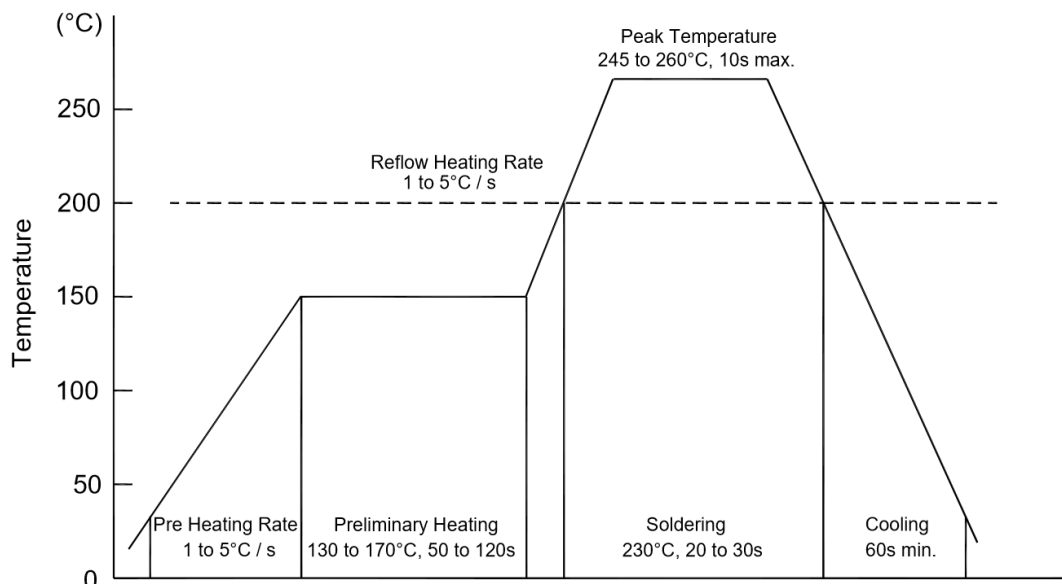
### Ordering Information

| Device     | Package  | Shipping              |
|------------|----------|-----------------------|
| PJM05P60SC | SOT-23-3 | 3,000PCS/Reel&7inches |



### 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

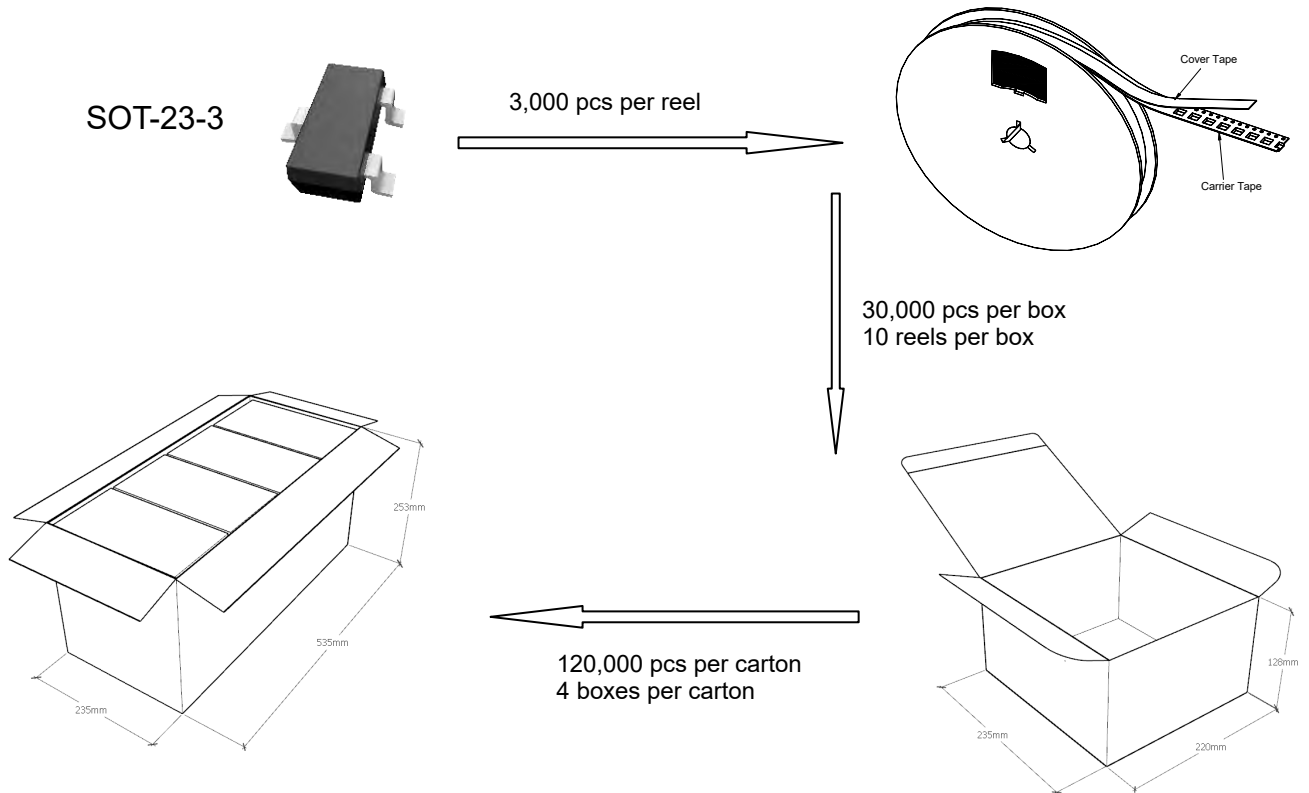


# PJM05P60SC

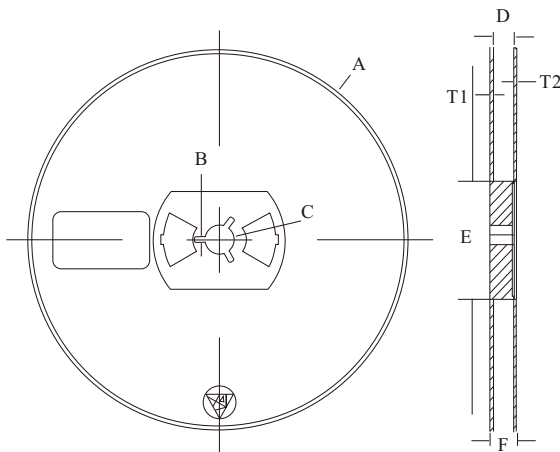
## P-Channel Enhancement Mode Power MOSFET

### Package Specifications

- The method of packaging



### ◆ Embossed tape and reel data



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

Reel (7")

