



PJM04DN30PA

Dual N-Channel Enhancement Mode Power MOSFET

Product Summary

- $V_{DS} = 30V, I_D = 4A$
- $R_{DS(on)} < 38m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 65m\Omega @ V_{GS} = 4.5V$

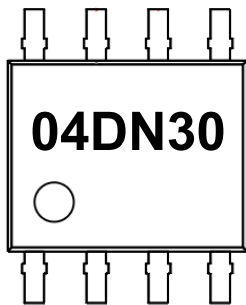
Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

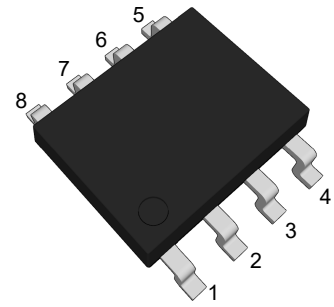
Application

- Load Switch
- PWM Applications
- Power Management

Marking Code



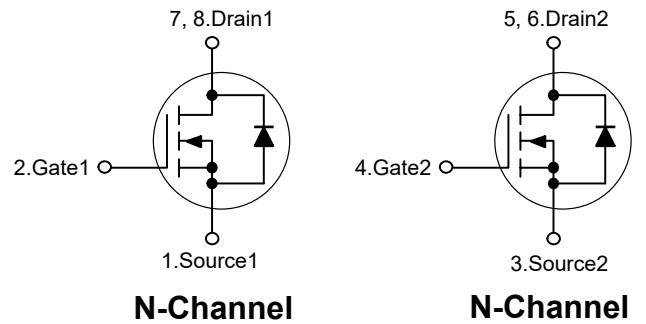
SOP-8



(Top View)

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | Source1 | 4 | Gate2 |
| 2 | Gate1 | 5,6 | Drain2 |
| 3 | Source2 | 7,8 | Drain1 |

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---------------------------------------|-----------|-------------|------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Drain Current-Continuous | I_D | 4 | A |
| Drain Current-Pulsed ^{Note1} | I_{DM} | 16 | A |
| Maximum Power Dissipation | P_D | 1.2 | W |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

Thermal Characteristics

| | | | |
|--|-----------------|-----|------|
| Thermal Resistance, Junction-to-Ambient ^{Note2} | $R_{\theta JA}$ | 104 | °C/W |
|--|-----------------|-----|------|



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Electrical Characteristics

(T_J=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|----------------------|---|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =250μA | 30 | -- | -- | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =30V, V _{GS} =0V | -- | -- | 1 | μA |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} =±20V, V _{DS} =0V | -- | -- | ±100 | nA |
| Gate Threshold Voltage ^{Note3} | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 1.0 | 1.5 | 2.5 | V |
| Drain-Source On-Resistance ^{Note3} | R _{DS(on)} | V _{GS} =10V, I _D =4A | -- | 29 | 38 | mΩ |
| | | V _{GS} =4.5V, I _D =3A | -- | 45 | 65 | mΩ |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =15V, V _{GS} =0V, f=1MHz | -- | 233 | -- | pF |
| Output Capacitance | C _{oss} | | -- | 44 | -- | pF |
| Reverse Transfer Capacitance | C _{rss} | | -- | 33 | -- | pF |
| Total Gate Charge | Q _g | V _{DS} =15V V _{GS} =10V, I _D =2A | -- | 3 | -- | nC |
| Gate-Source Charge | Q _{gs} | | -- | 0.5 | -- | nC |
| Gate-Drain Charge | Q _{gd} | | -- | 0.8 | -- | nC |
| Switching Characteristics | | | | | | |
| Turn-on Delay Time | t _{d(on)} | V _{DD} =15V, I _D =4A, V _{GS} =10V, R _{GEN} =3Ω | -- | 4 | -- | nS |
| Turn-on Rise Time | t _r | | -- | 2.1 | -- | nS |
| Turn-off Delay Time | t _{d(off)} | | -- | 15 | -- | nS |
| Turn-off Fall Time | t _f | | -- | 3.2 | -- | nS |
| Source-Drain Diode Characteristics | | | | | | |
| Diode Forward Voltage ^{Note3} | V _{SD} | V _{GS} =0V, I _S =4A | -- | -- | 1.2 | V |
| Diode Forward Current ^{Note2} | I _S | | -- | -- | 4 | A |

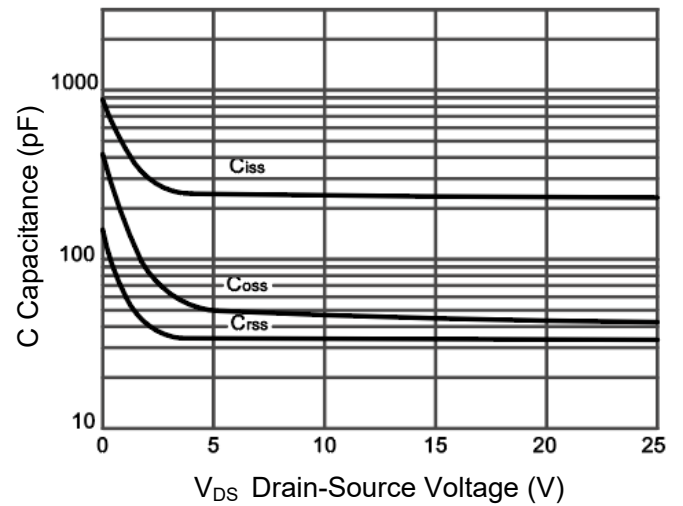
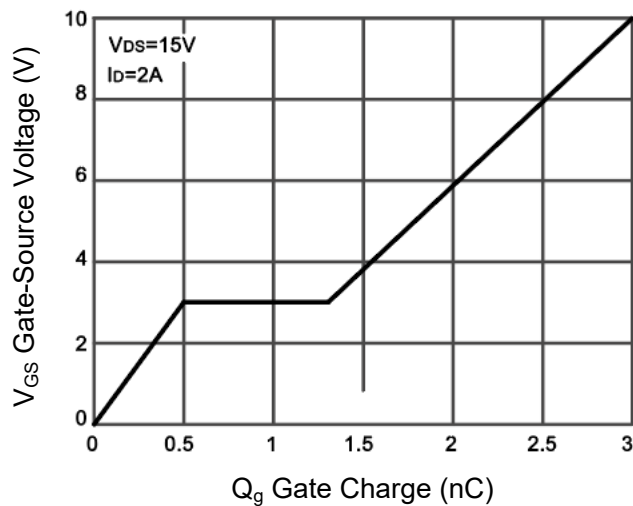
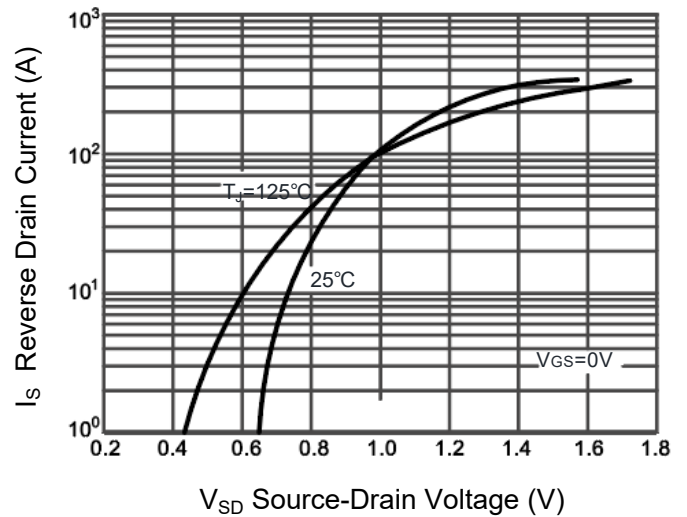
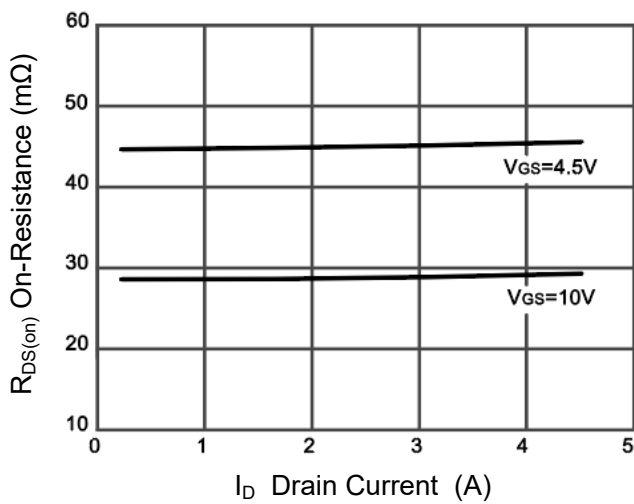
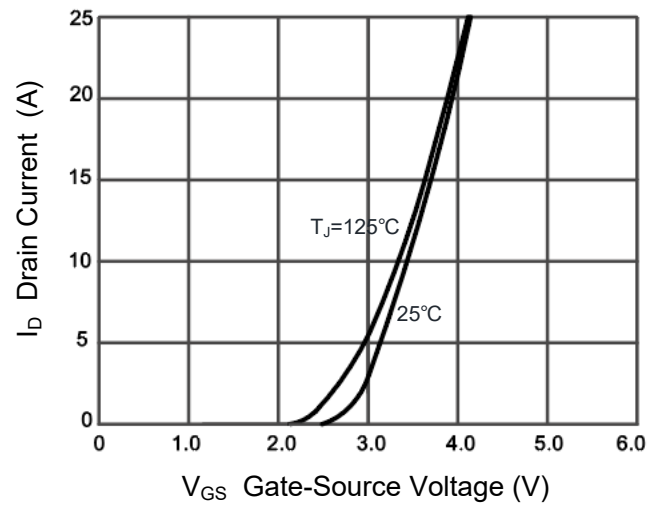
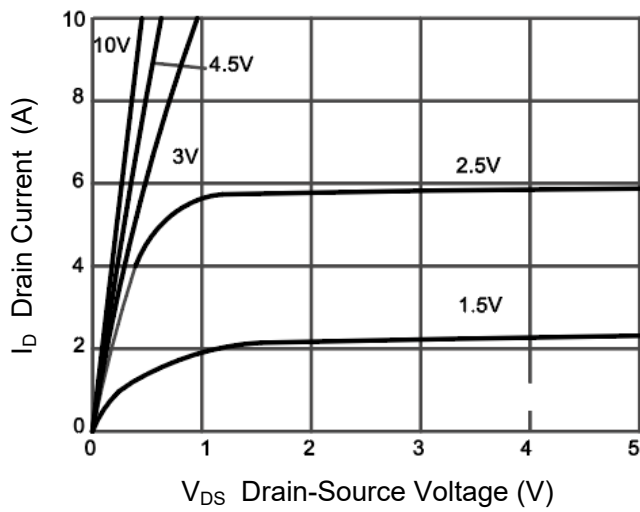
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 0.5%



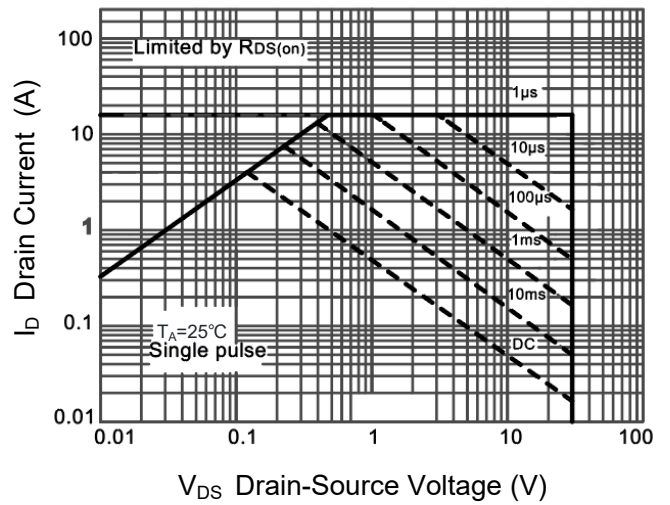
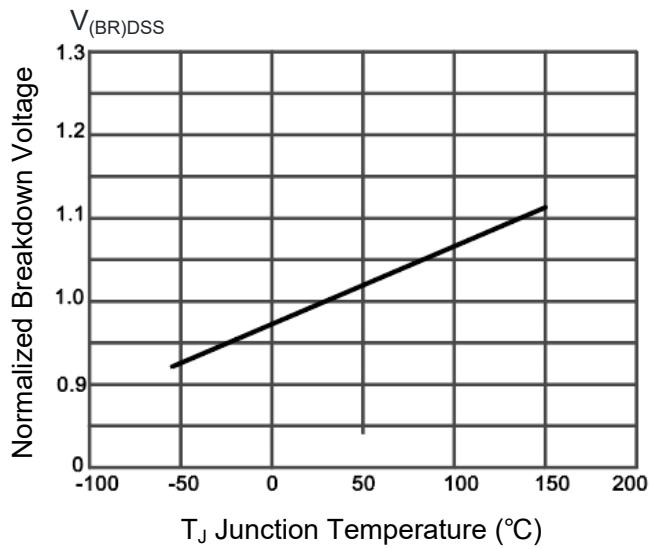
Typical Characteristic Curves





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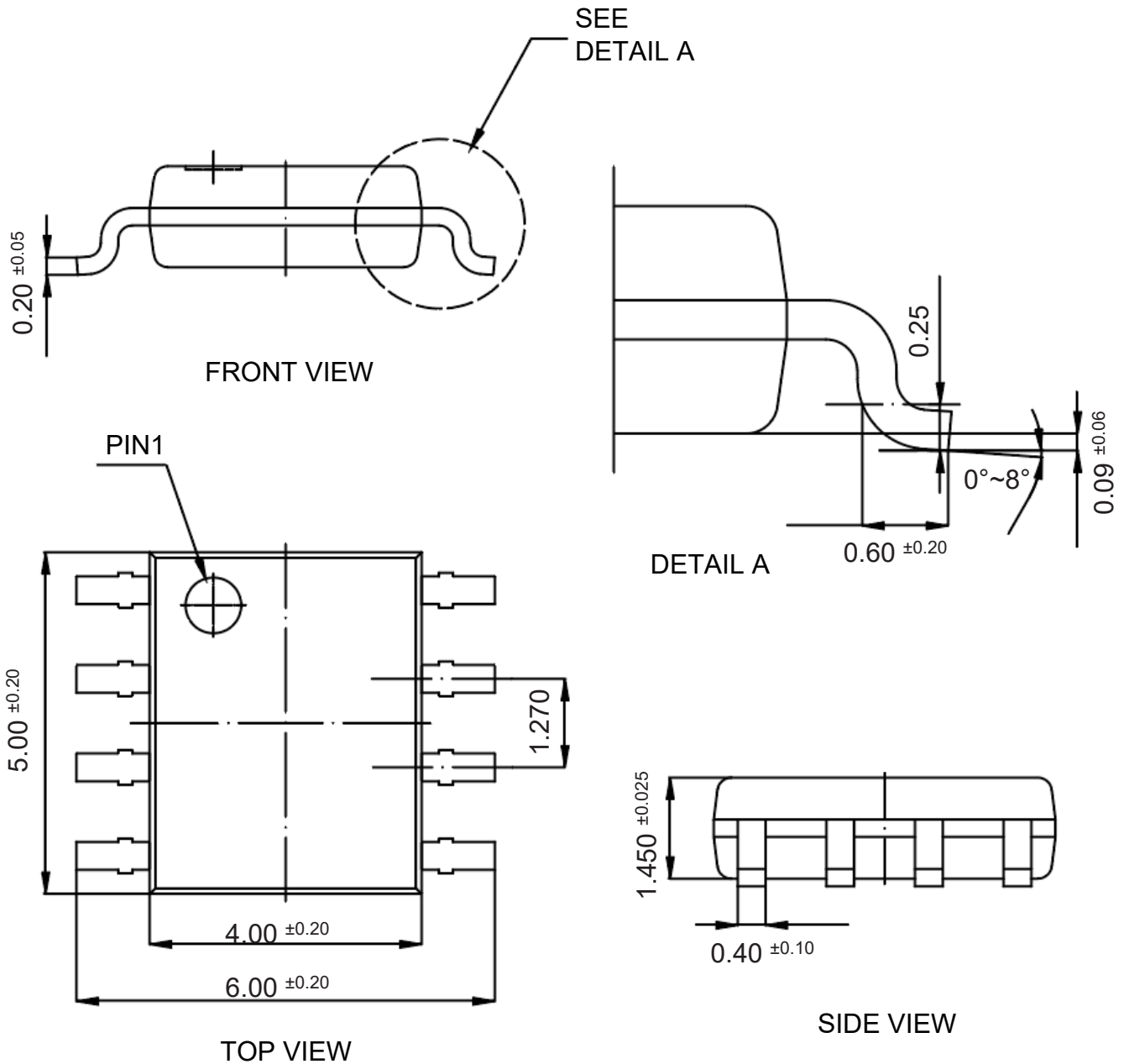
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Package Outline

SOP-8

Dimensions in mm



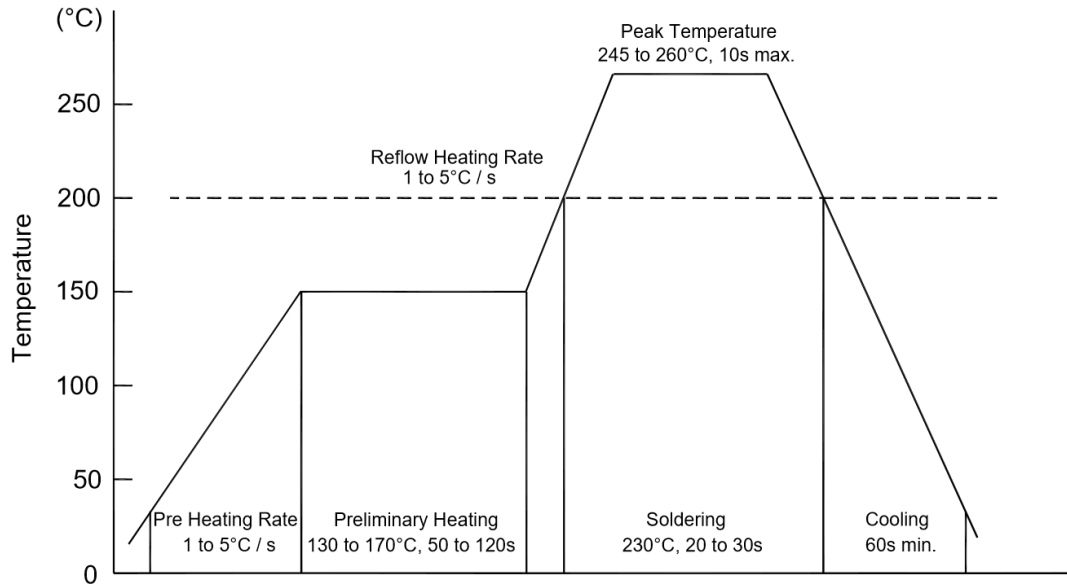
Ordering Information

| Device | Package | Shipping |
|-------------|---------|------------------------|
| PJM04DN30PA | SOP-8 | 4,000PCS/Reel&13inches |



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: 300°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

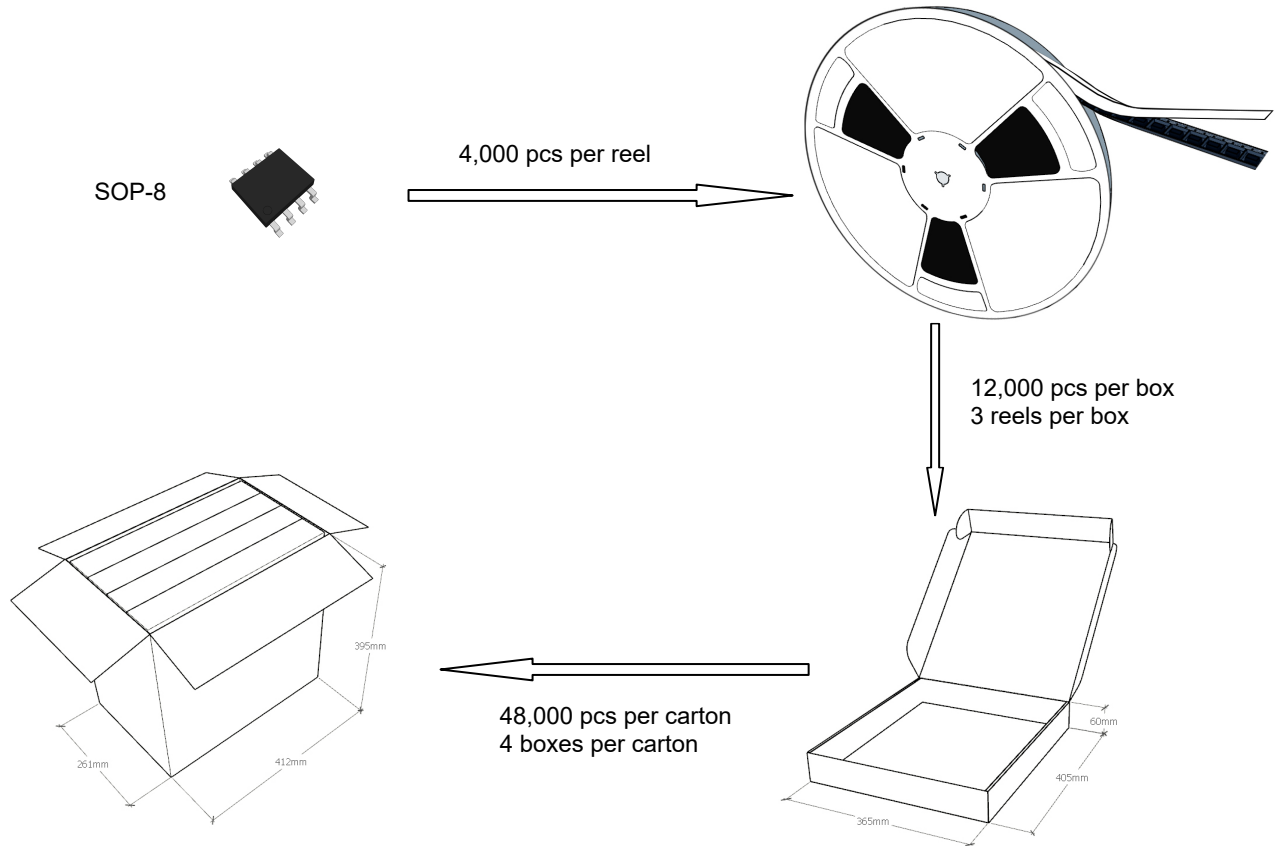


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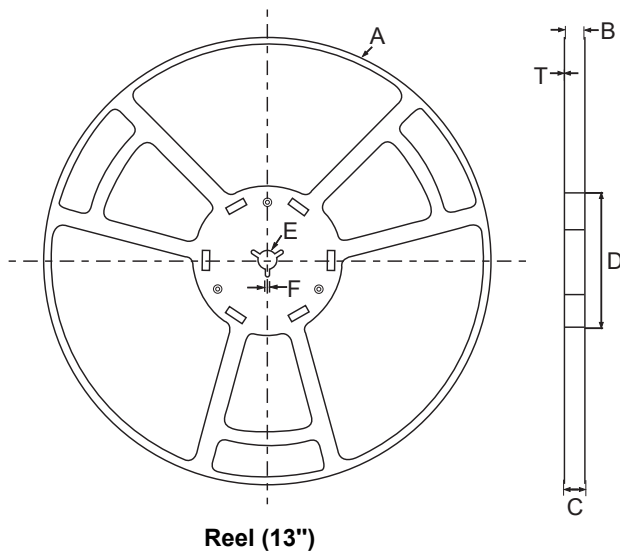
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Package Specifications

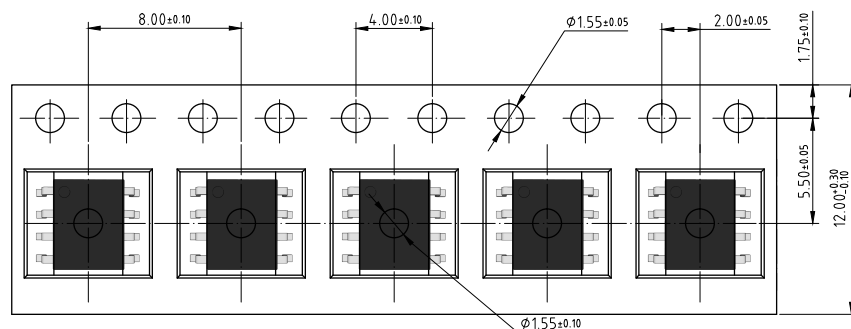
- The method of packaging



◆ Embossed tape and reel data



| symbol | Value(unit:mm) |
|--------|---------------------|
| A | $\phi 330 \pm 1$ |
| B | 12.7 ± 0.5 |
| C | 16.5 ± 0.3 |
| D | $\phi 99.5 \pm 0.5$ |
| E | $\phi 13.6 \pm 0.3$ |
| F | 2.8 ± 0.3 |
| T | 1.9 ± 0.2 |



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