



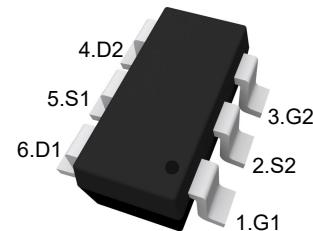
# PJM3222DNSG

## Dual N-Channel Enhancement Mode Power MOSFET

### Features

- Low Gate Charge and  $R_{DS(on)}$
- $V_{DS} = 20V, I_D = 4A$
- $R_{DS(on)} < 42m\Omega @ V_{GS} = 4.5V$

SOT-23-6

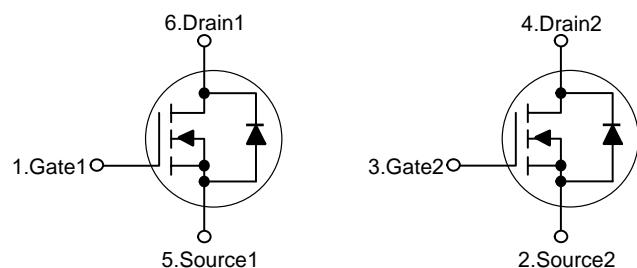


Marking Code: JL

### Applications

- Load switch
- DC/DC Converters

Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous	$I_D$	4	A
Drain Current-Pulsed <sup>Note1</sup>	$I_{DM}$	10	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

Thermal Resistance, Junction-to-Ambient <sup>Note2</sup>	$R_{\theta JA}$	83	°C/W
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## Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	20	--	--	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V	--	--	1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±12V, 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	0.75	0.9	1.2	V
Drain-Source On-Resistance <sup>Note3</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.4A	--	30	42	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =3A	--	37	56	mΩ
Forward Transconductance <sup>Note3</sup>	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2.9A	--	8	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz	--	300	--	pF
Output Capacitance	C <sub>oss</sub>		--	120	--	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		--	80	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V, I <sub>D</sub> =2.9A V <sub>GS</sub> =4.5V, R <sub>GEN</sub> =6Ω	--	10	15	nS
Turn-on Rise Time	t <sub>r</sub>		--	50	85	nS
Turn-off Delay Time	t <sub>d(off)</sub>		--	17	45	nS
Turn-off Fall Time	t <sub>f</sub>		--	10	20	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =2.9A, V <sub>GS</sub> =4.5V	--	4	10	nC
Gate-Source Charge	Q <sub>gs</sub>		--	0.65	--	nC
Gate-Drain Charge	Q <sub>gd</sub>		--	1.2	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>Note3</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>s</sub> =3.4A	--	--	1.2	V
Diode Forward Current <sup>Note2</sup>	I <sub>s</sub>		--	--	4	A

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

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

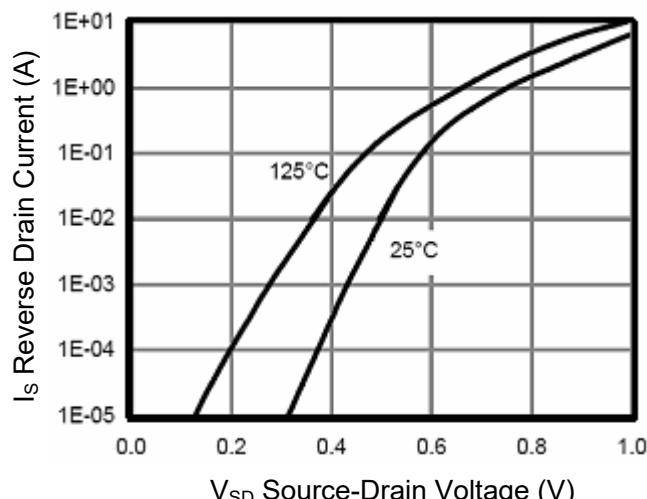
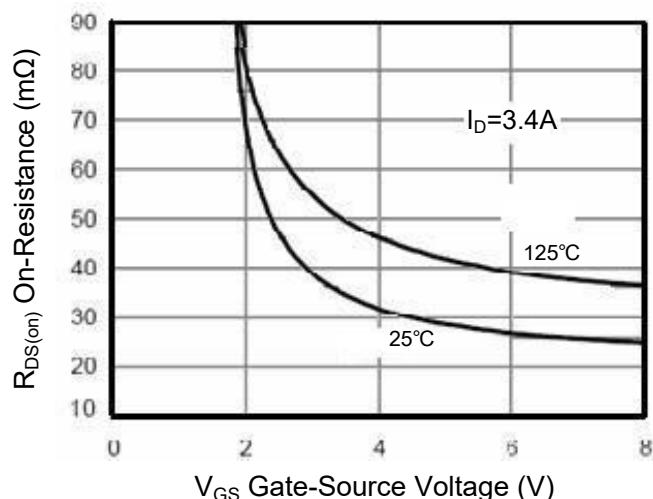
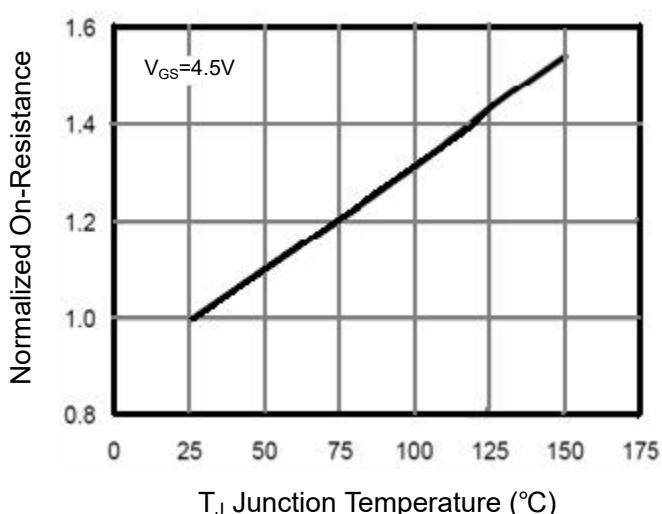
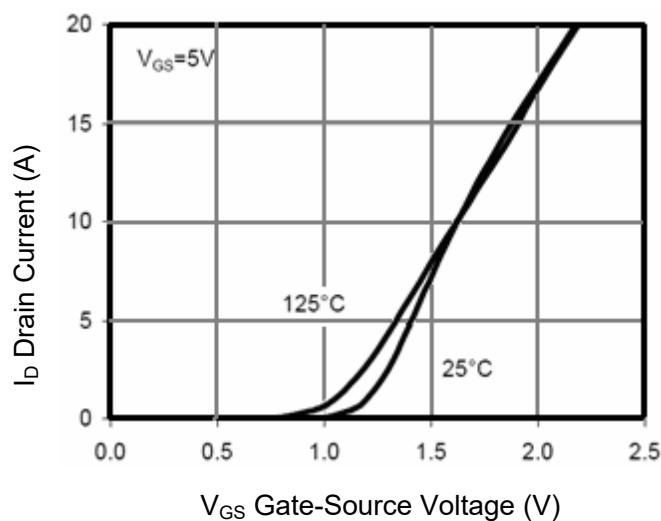
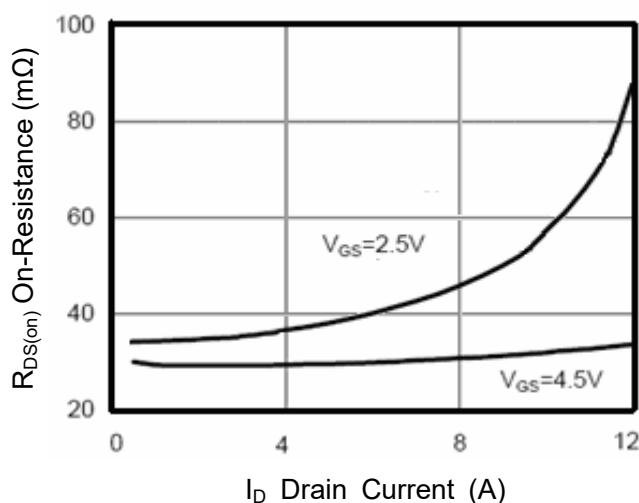
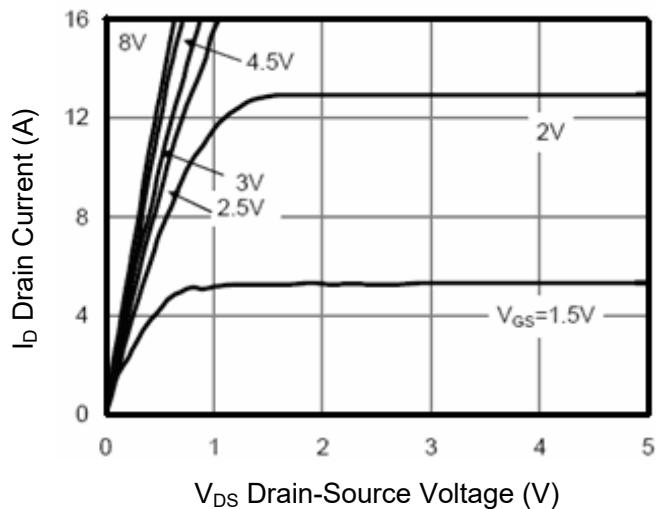
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.



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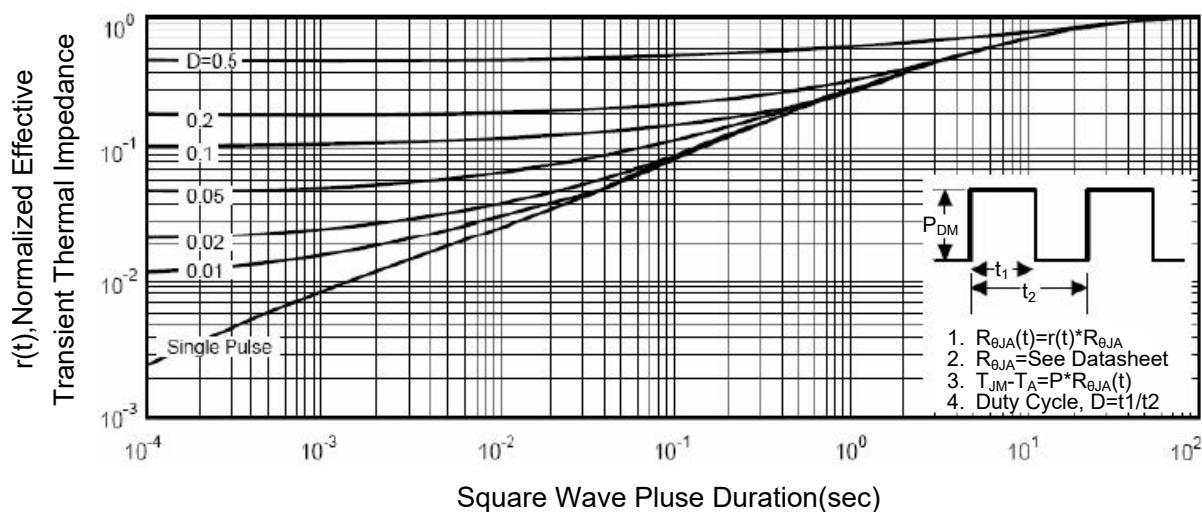
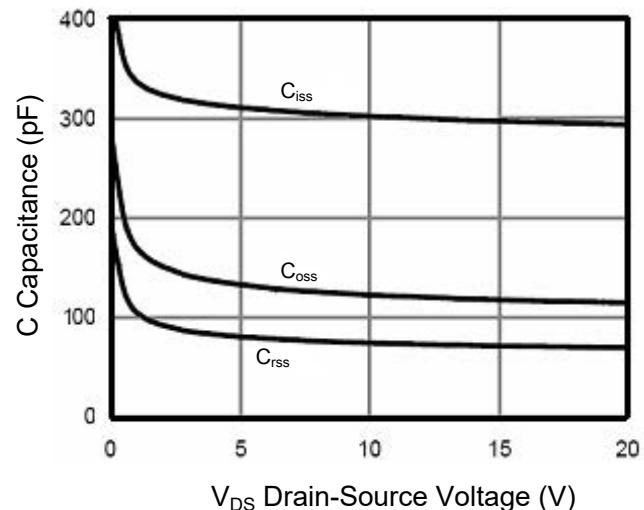
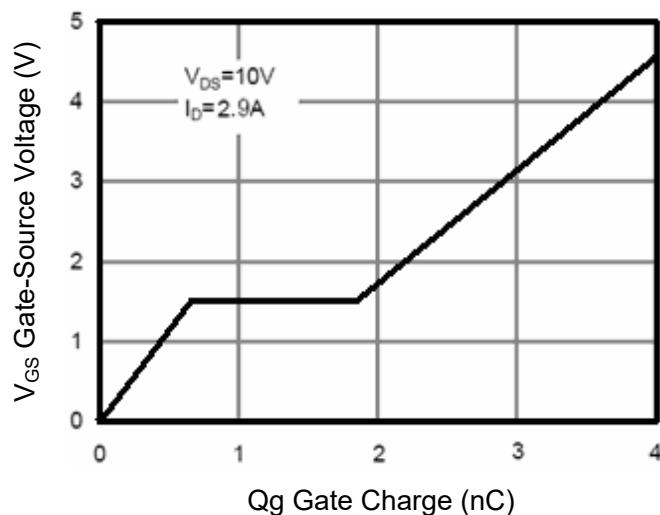
## Typical Characteristic Curves





# PJM3222DNSG

## Dual N-Channel Enhancement Mode Power MOSFET

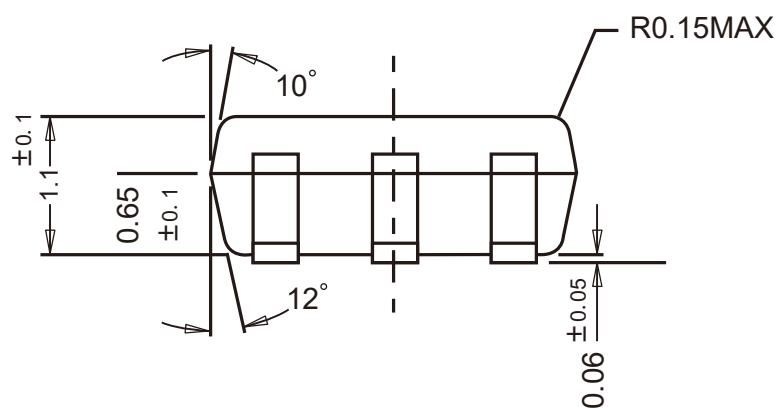
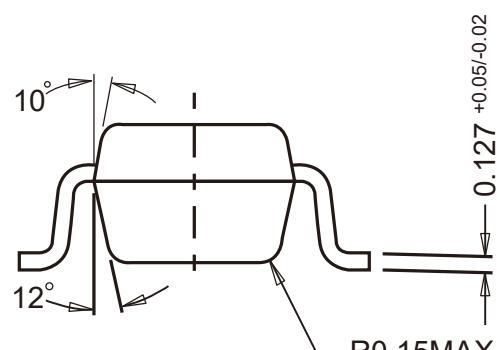
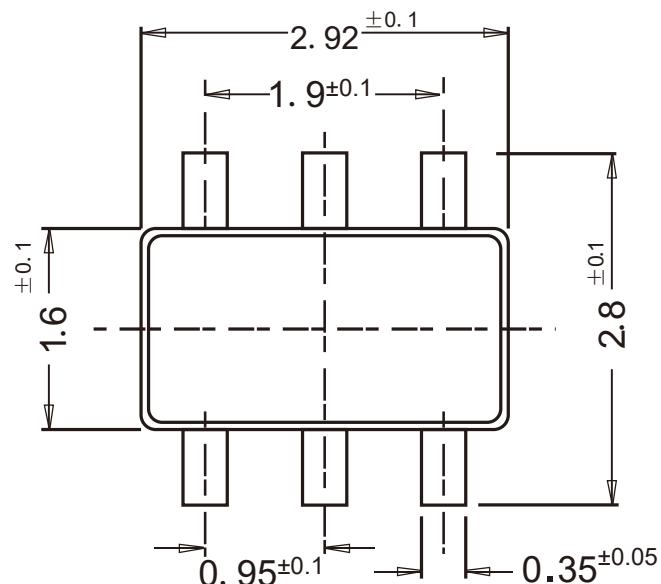




### Package Outline

SOT-23-6

Dimensions in mm



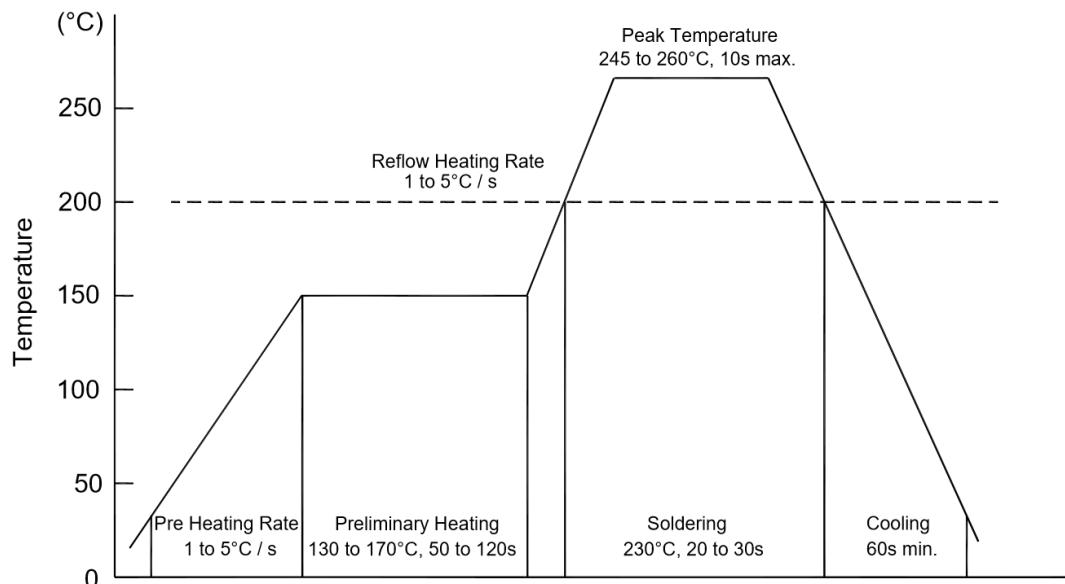
### Ordering Information

Device	Package	Shipping
PJM3222DNSG	SOT-23-6	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:

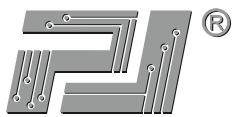
- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

### ◆ Conditions of hand soldering

- Temperature: 370 °C
- Time: 3s max.
- Times: one time

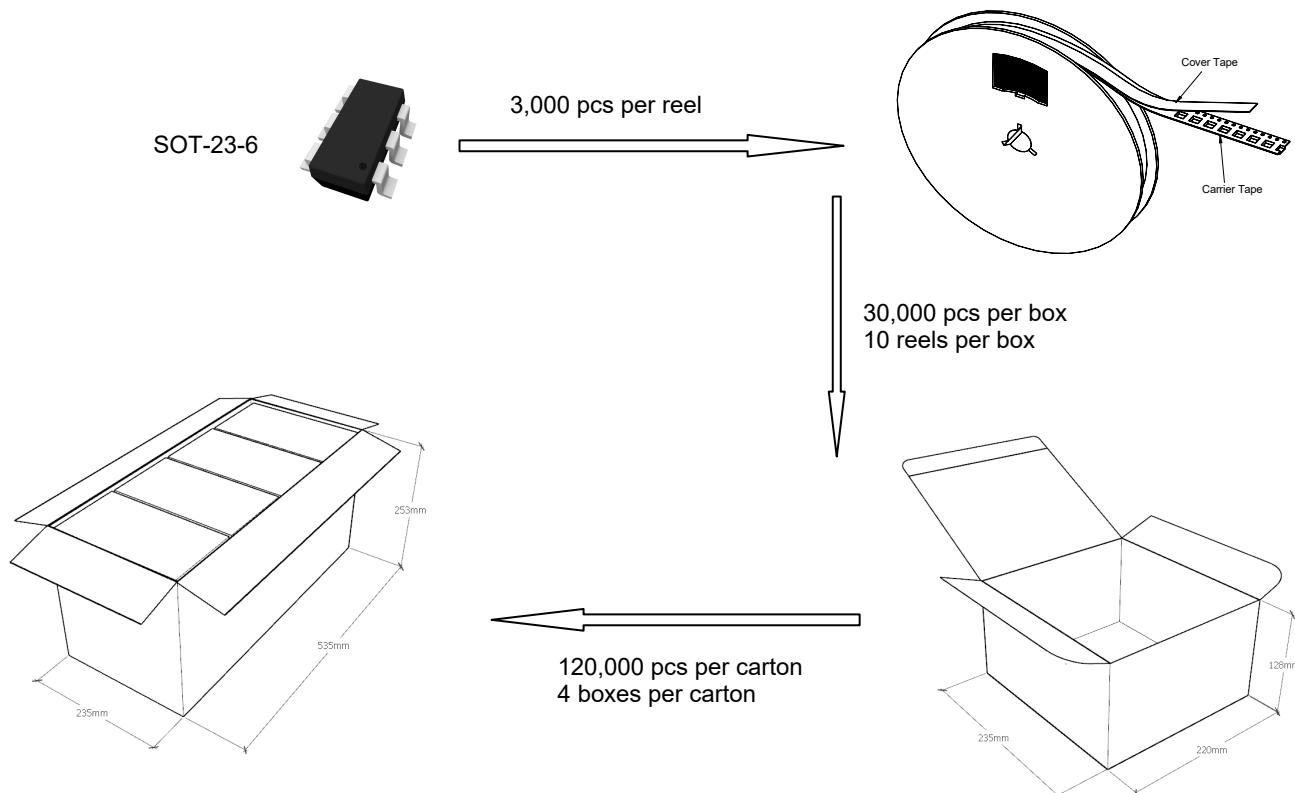
### ◆ Storage conditions

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

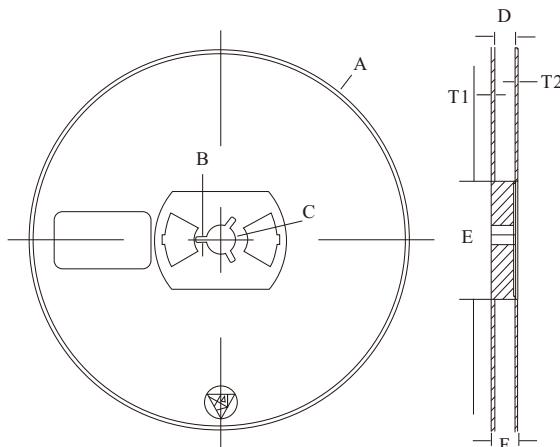


## Package Specifications

- The method of packaging

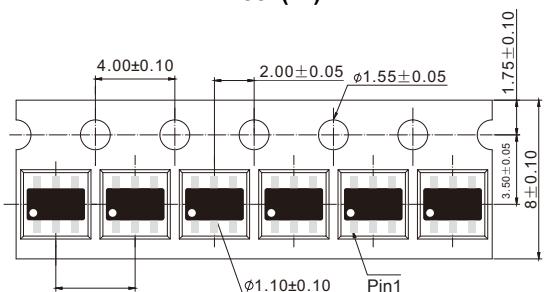


### ◆ Embossed tape and reel data



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")



Tape (8mm)