PJM2303PSA
P Enhancement Field Effect Transistor

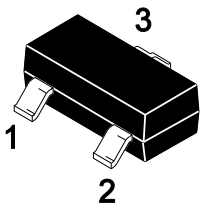
Features

- V_{DS}=-30V, I_D=-2A
  $R_{DS(on)}$=75mΩ (Typ.)@V_{GS}=-10V
- Excellent $R_{DS(ON)}$

Applications

- Load Switch
- PWM applications

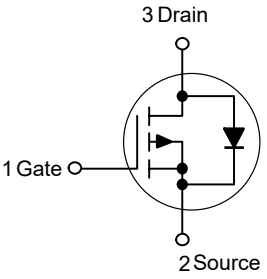
SOT-23



1. Gate 2.Source 3.Drain

Marking: S03

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}	±20	V
Continuous Drain Current	$-I_D$	2	A
Power Dissipation	P_D	0.9	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 Note1	$R_{\theta JA}$	139	°C/W

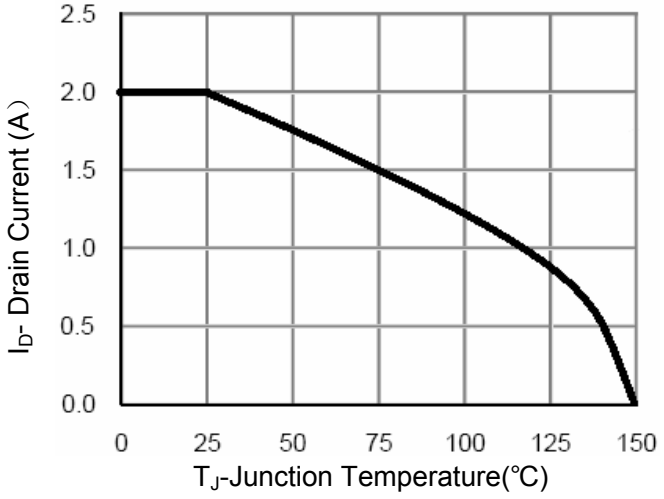
Electrical Characteristics (T_A=25°C unless otherwise specified)

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
Zero gate voltage drain current	$-I_{DSS}$	V_{DS} =-30V,V_{GS} = 0V			1	μA
Gate-source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Drain-source on-resistance Note2	$R_{DS(on)}$	V_{GS} =-10V, I_D =-2A		75	130	mΩ
		V_{GS} =-4.5V, I_D =-1.5A		115	180	mΩ
Gate threshold voltage Note2	$-V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	1	1.6	2.5	V
Forward tranconductance Note2	g_{FS}	V_{DS} =-10V, I_D =-2A		2		S
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		226		pF
Output capacitance	C_{oss}			47		pF
Reverse transfer capacitance	C_{rss}			28		pF
Switching Characteristics						
Total Gate Charge	Q_g	V_{GS}=-10V,V_{DS}=-15V, I_D=-2A		8.5		nC
Gate Source Charge	Q_{gs}			2.3		nC
Gate Drain Charge	Q_{gd}			1.5		nC
Turn-on delay time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=15Ω,R_{GEN}=6Ω		9		nS
Turn-on rise time	t_r			9		nS
Turn-off delay time	$t_{d(off)}$			18		nS
Turn-off fall time	t_f			6		nS
Source-Drain Diode Characteristics						
Diode forward voltage	V_{SD}	I_S=-2A,V_{GS}=0V			-1.2	V

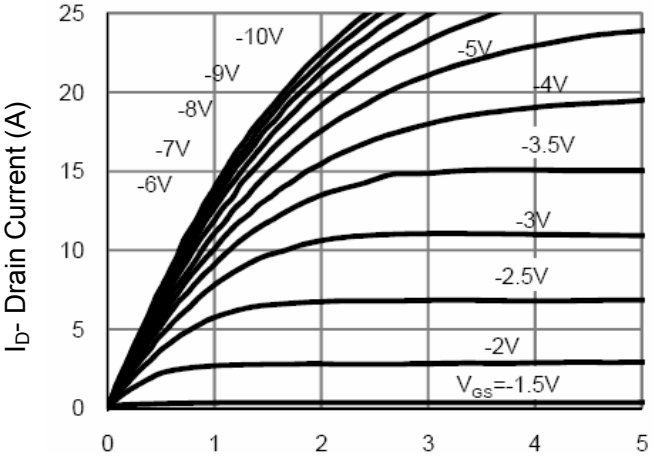
Notes:

1. Surface mounted on FR4 board，t ≤ 10 sec.
2. Pulse test: Pulse width ≤300μs, duty cycle ≤2%.

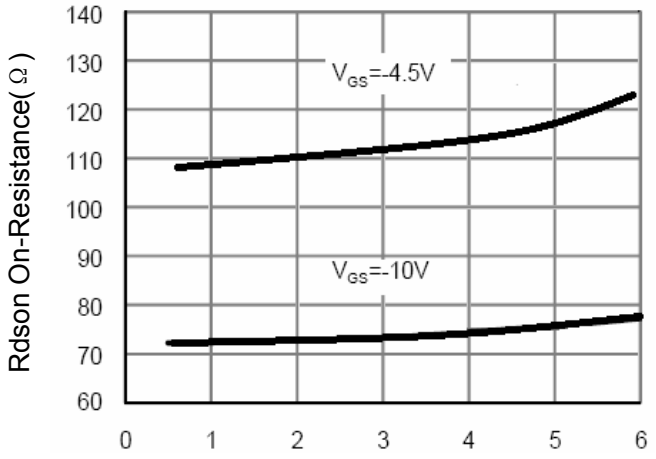
Typical Curves



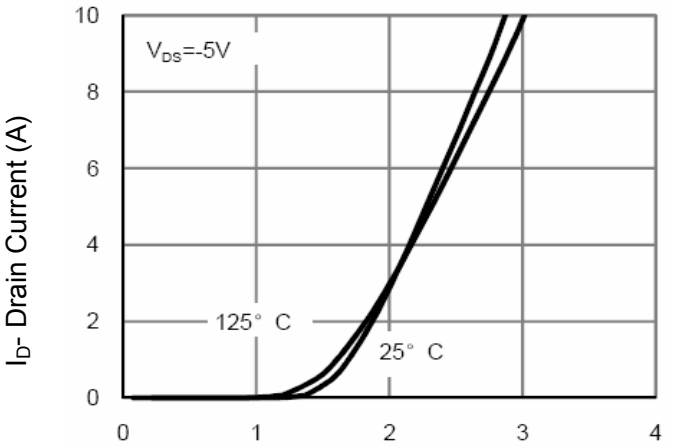
Drain Current



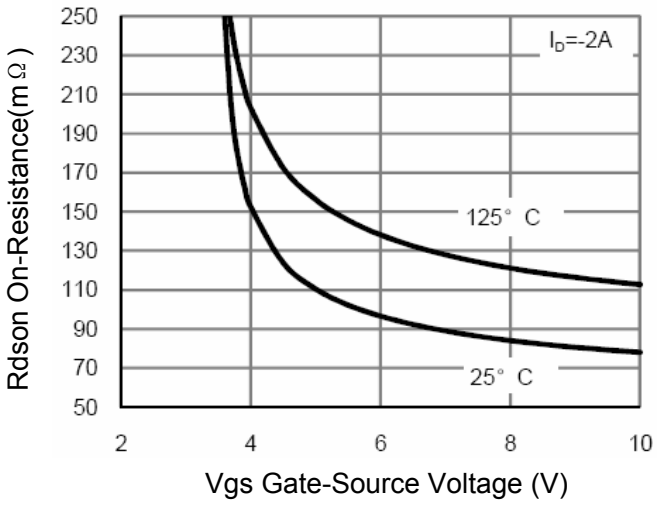
Output Characteristics



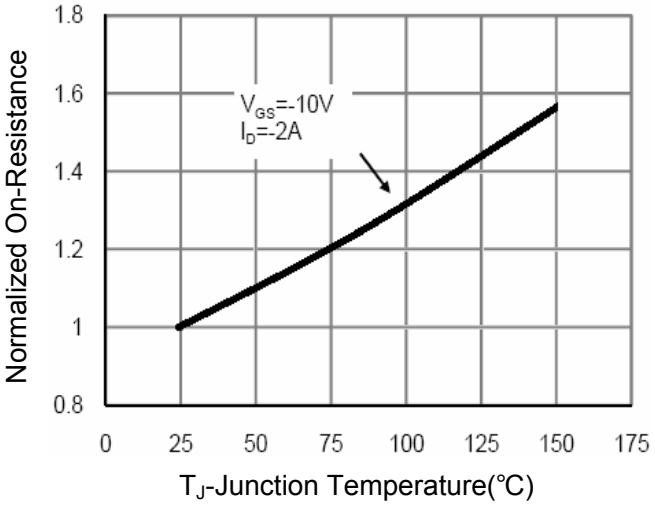
Drain-Source On-Resistance



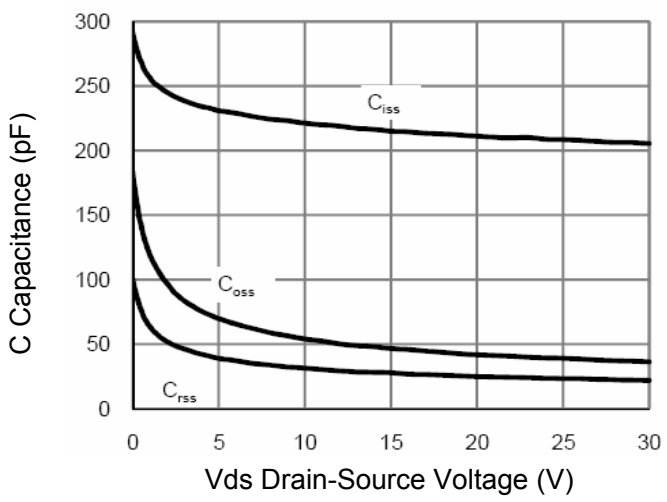
Transfer Characteristics



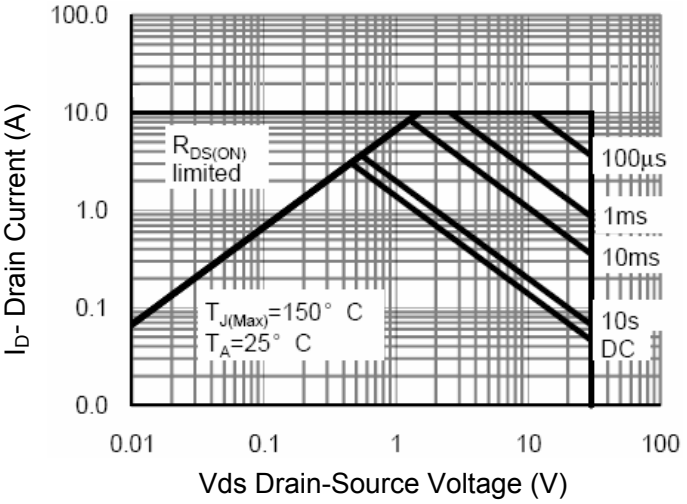
Rdson vs Vgs



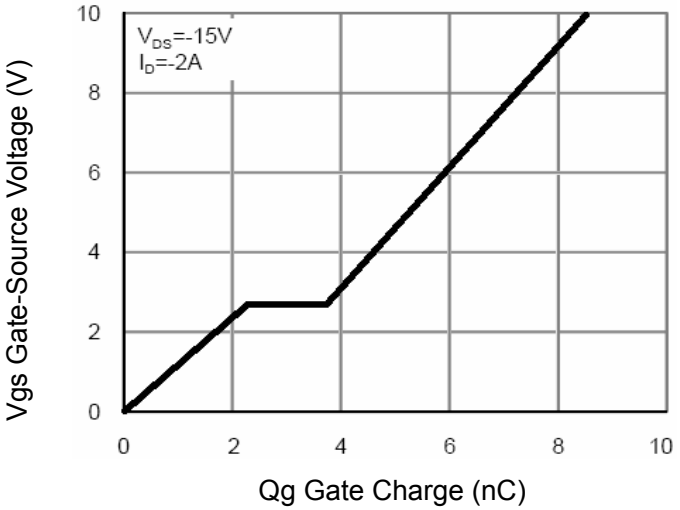
Drain-Source On-Resistance



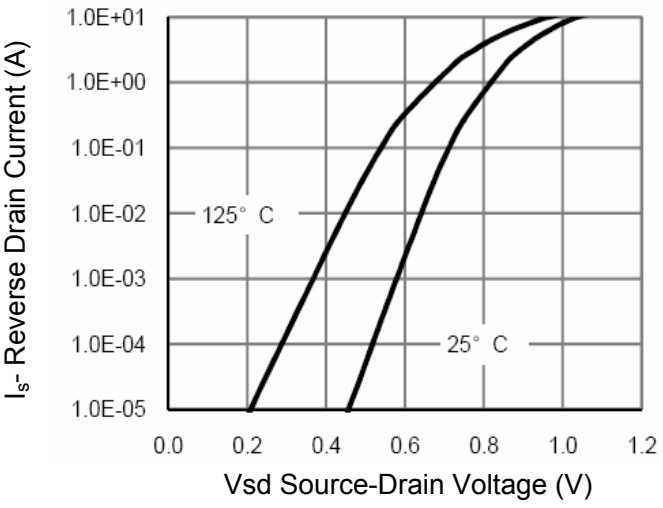
Capacitance vs Vds



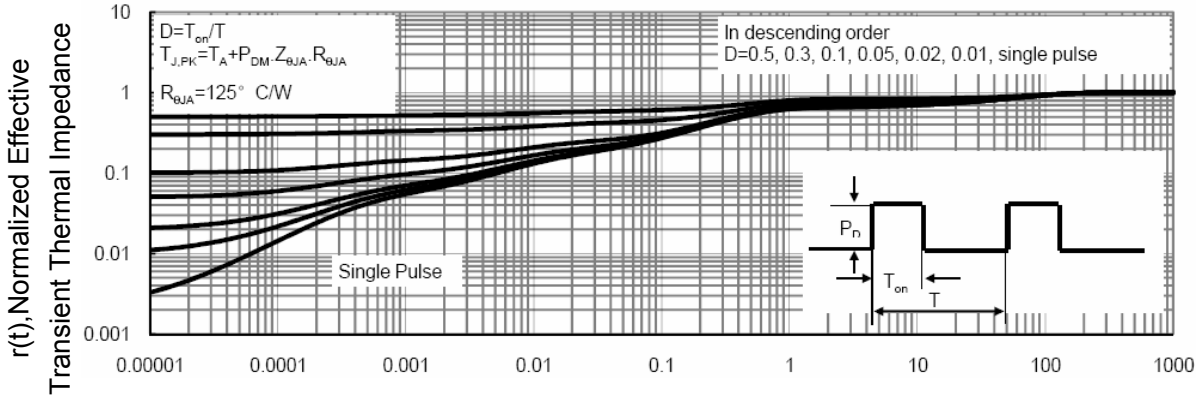
Safe Operation Area



Gate Charge



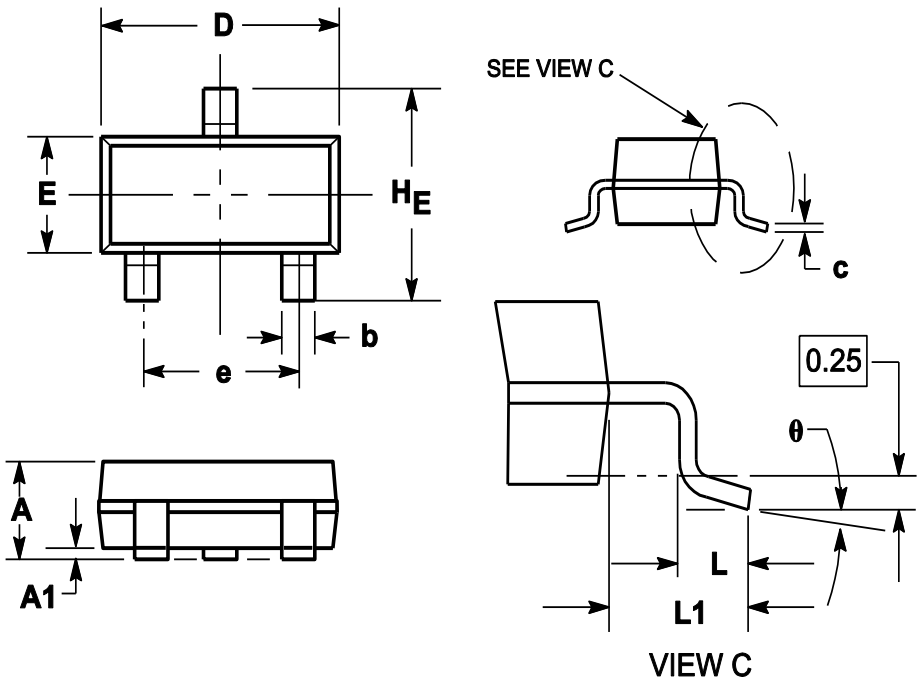
Source- Drain Diode Forward



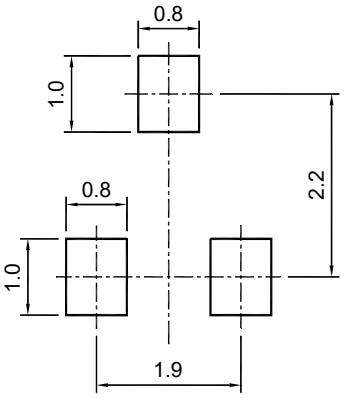
Normalized Maximum Transient Thermal Impedance

Package Outline

SOT-23



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°		8°



SOT-23

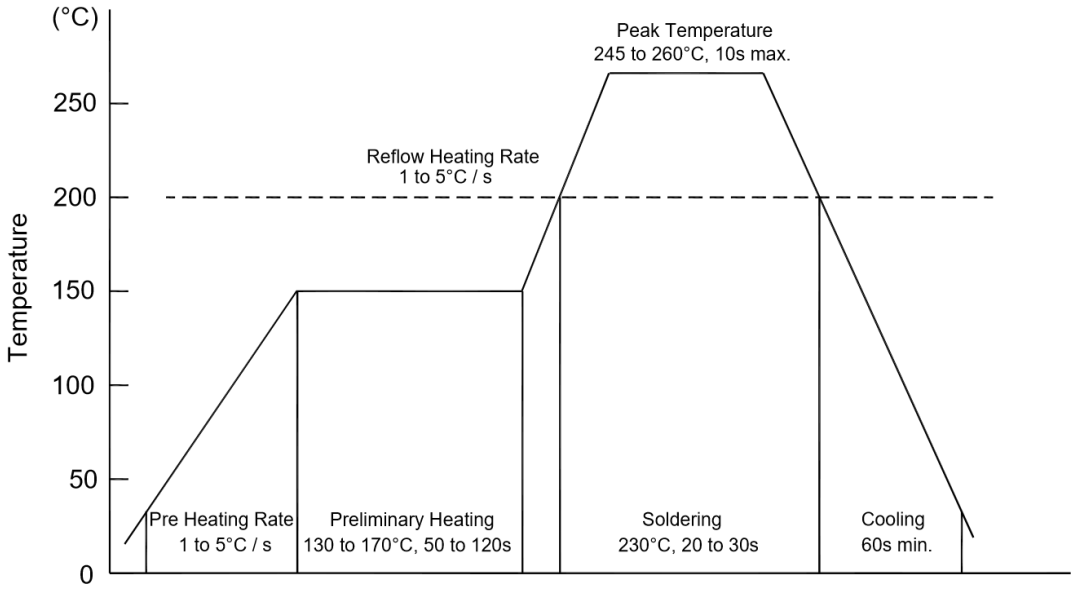
Recommended soldering pad

Ordering Information

Device	Package	Shipping
PJM2303PSA	SOT-23	3000/Reel&Tape(7inch)

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

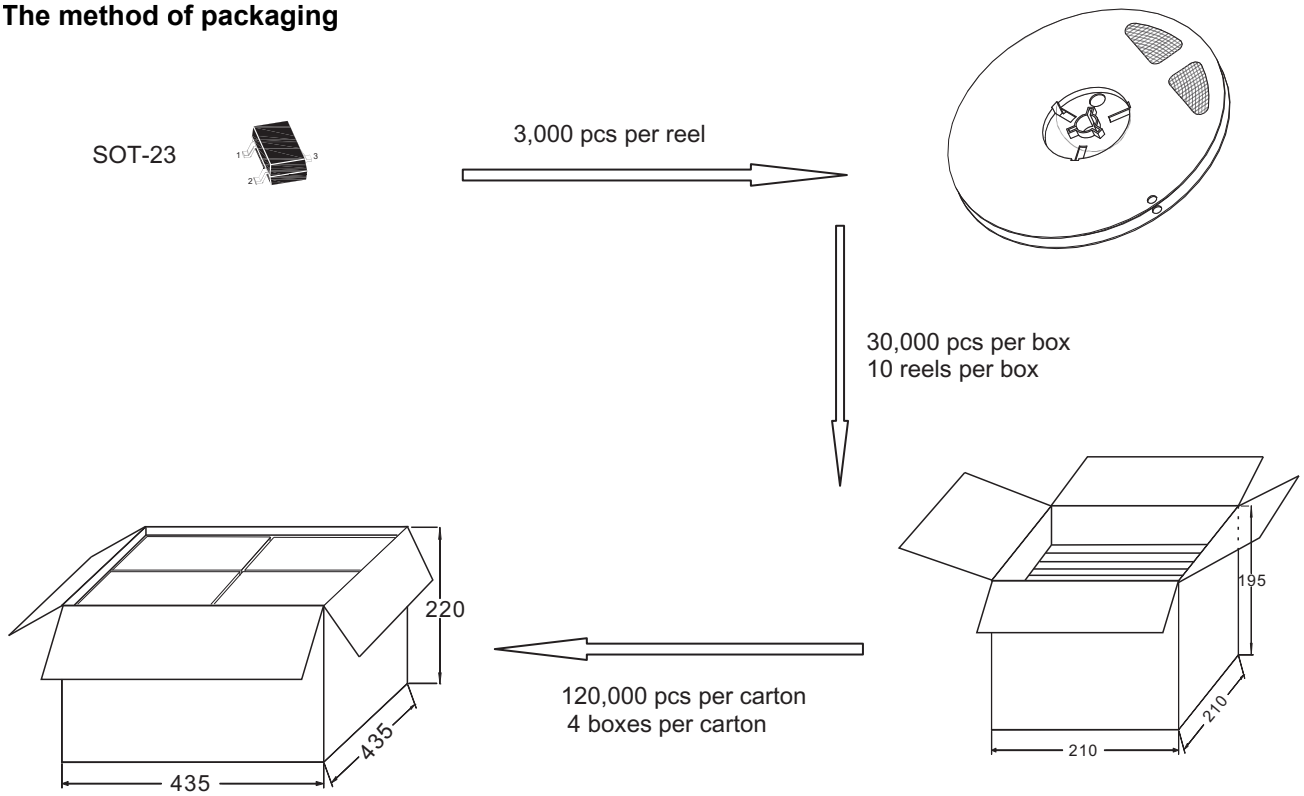
- Temperature: 370 ˚C
- Time: 3s max.
- Times: one time

◆ Storage conditions

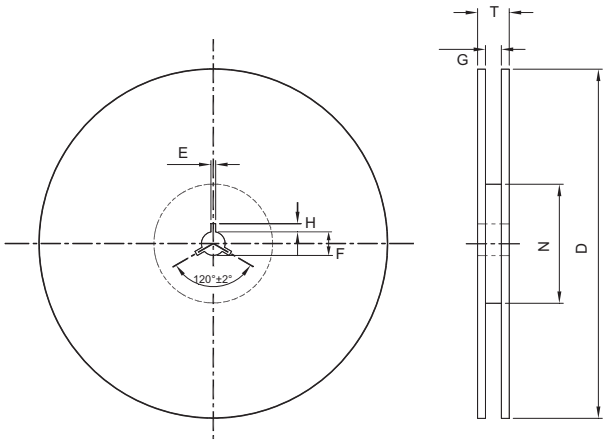
- **Temperature**
  5 to 40 ˚C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

Package Specifications

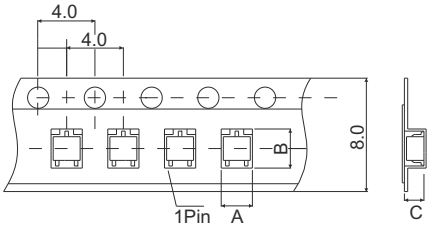
◆ **The method of packaging**



◆ Embossed tape and reel data



Reel (7")



Tape (8mm)

Symbol	Value (unit: mm)
A	3.15 ± 0.1
B	2.7 ± 0.1
C	1.25 ± 0.1
E	2 ± 0.5
F	13 ± 0.5
D	178 ± 2.0
G	8.4 ± 1.5
H	4 ± 0.5
N	60
T	< 14.9