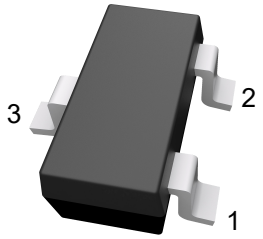
PJM3401PSC
P-Channel Power MOSFET

Features

- V_{DS}= -30V I_D= -4.5A
- $R_{DS(ON)}$= 60mΩ(max) @-10V
- Halogen and Antimony Free

SOT-23-3



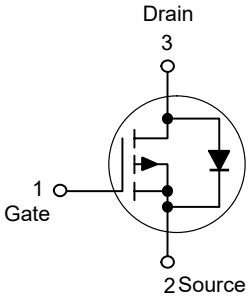
1. Gate 2.Source 3.Drain

Marking: P1

Applications

- Load Switch and in PWM Applications

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	$-I_D$	4.5	A
Power Dissipation	P_D	1.4	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	$R_{\theta JA}$	89	°C/W

Electrical Characteristics (T_C=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} =-30V,V_{GS} = 0V	--	--	1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V	--	--	±100	nA
Gate threshold voltage Note2	$-V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	0.7	1	1.3	V
Drain-source on-resistance Note2	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.1A	--	--	60	mΩ
		V_{GS} =-4.5V, I_D =-4A	--	--	70	mΩ
		V_{GS} =-2.5V, I_D =-1A	--	--	90	mΩ
Forward transconductance Note2	g_{FS}	V_{DS} =-5V, I_D =-5A	7	--	--	S
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} = -15V,V_{GS} = 0V,f=1MHz	--	880	--	pF
Output Capacitance	C_{oss}		--	105	--	
Reverse Transfer Capacitance	C_{rss}		--	65	--	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DS}=-15V, V_{GS}=-10V，R_{GEN} =6Ω, I_D=-4.2A	--	7	--	ns
Turn-on rise time	t_r		--	3	--	
Turn-off delay time	$t_{d(off)}$		--	30	--	
Turn-off fall time	t_f		--	12	--	
Total gate charge	Q_g	V_{DD} =-15V,V_{GS} =-4.5V,I_D =-4.2A	--	8.5	--	nC
Gate-source charge	Q_{gs}		--	1.8	--	
Gate-drain charge	Q_{gd}		--	2.7	--	
Source-Drain Diode characteristics						
Diode Forward voltage	$-V_{DS}$	V_{GS} =0V, I_S=-4.2A	--	--	1.2	V

Notes:

1. Surface mounted on FR4 board，t ≤ 10 sec.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Typical Characteristic Curves

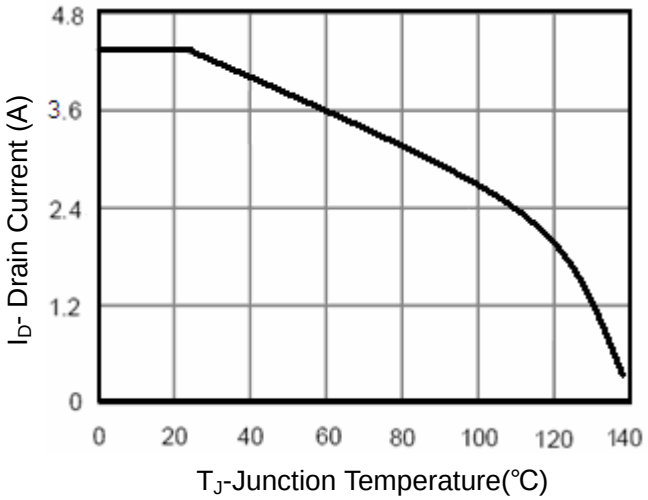


Figure 1 Drain Current

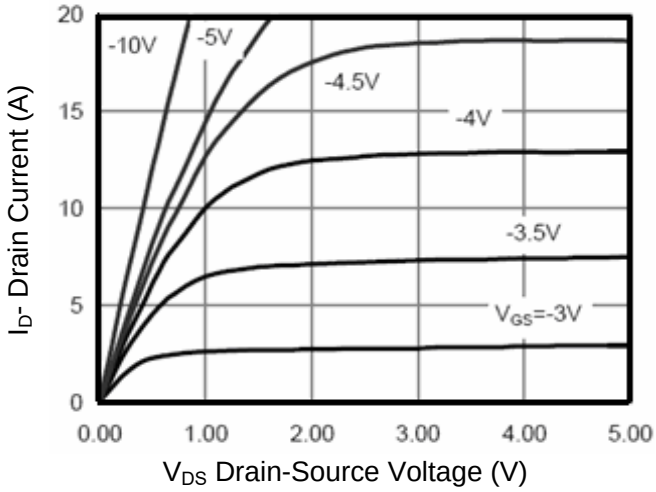


Figure 2 Output Characteristics

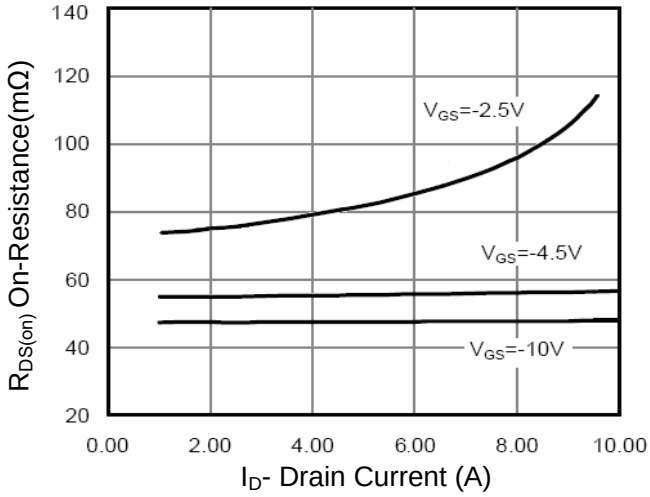


Figure 3 Drain-Source On-Resistance

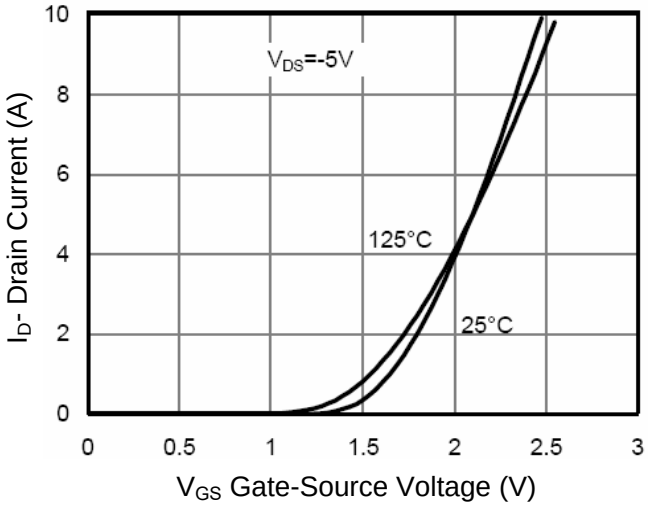


Figure 4 Transfer Characteristics

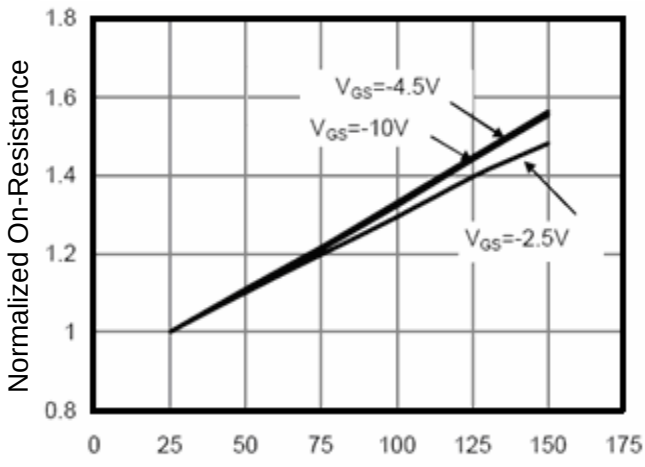


Figure 5 Drain-Source On-Resistance

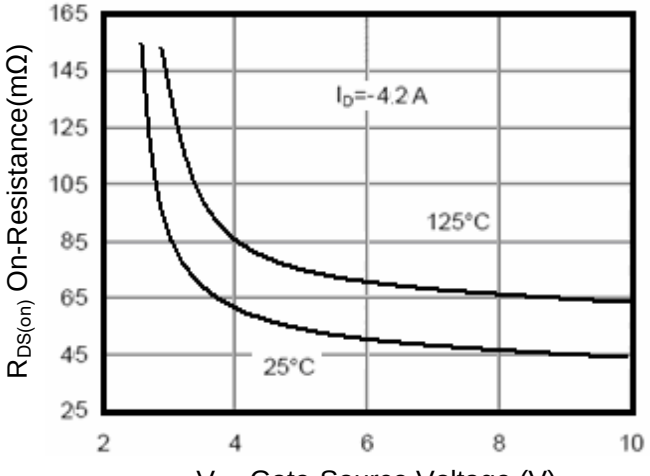


Figure 6 $R_{DS(on)}$ vs V_{GS}

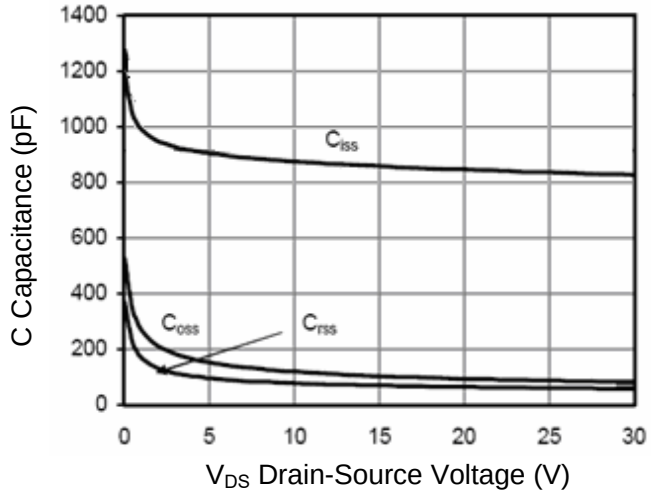


Figure 7 Capacitance vs V_{DS}

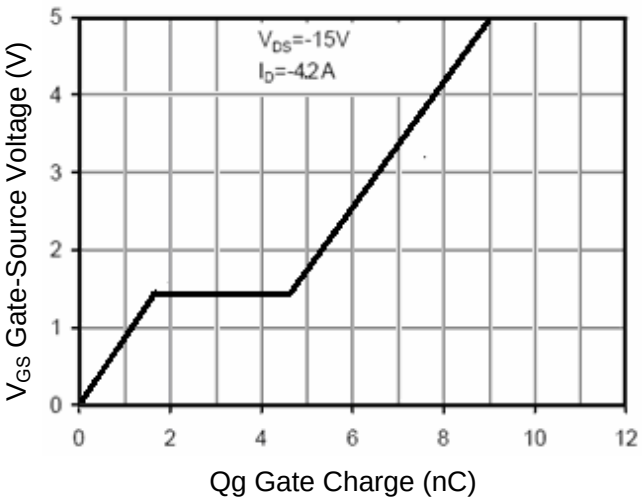


Figure 8 Gate Charge

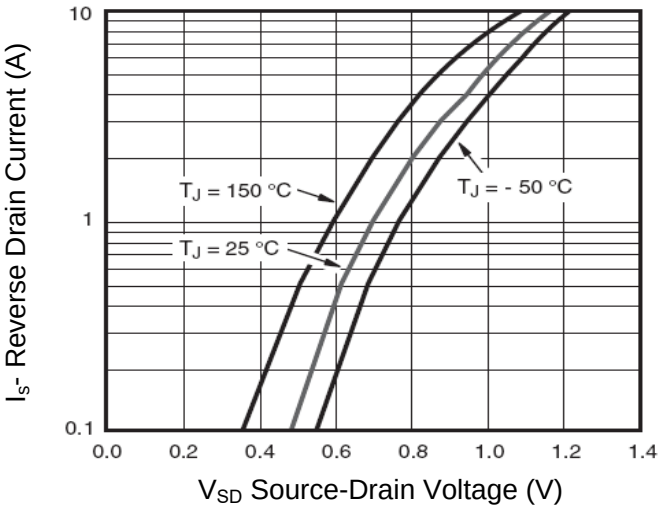


Figure 9 Source- Drain Diode Forward

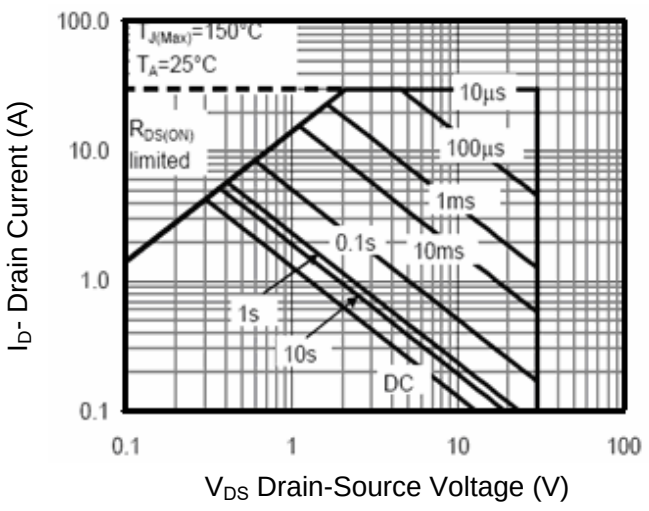
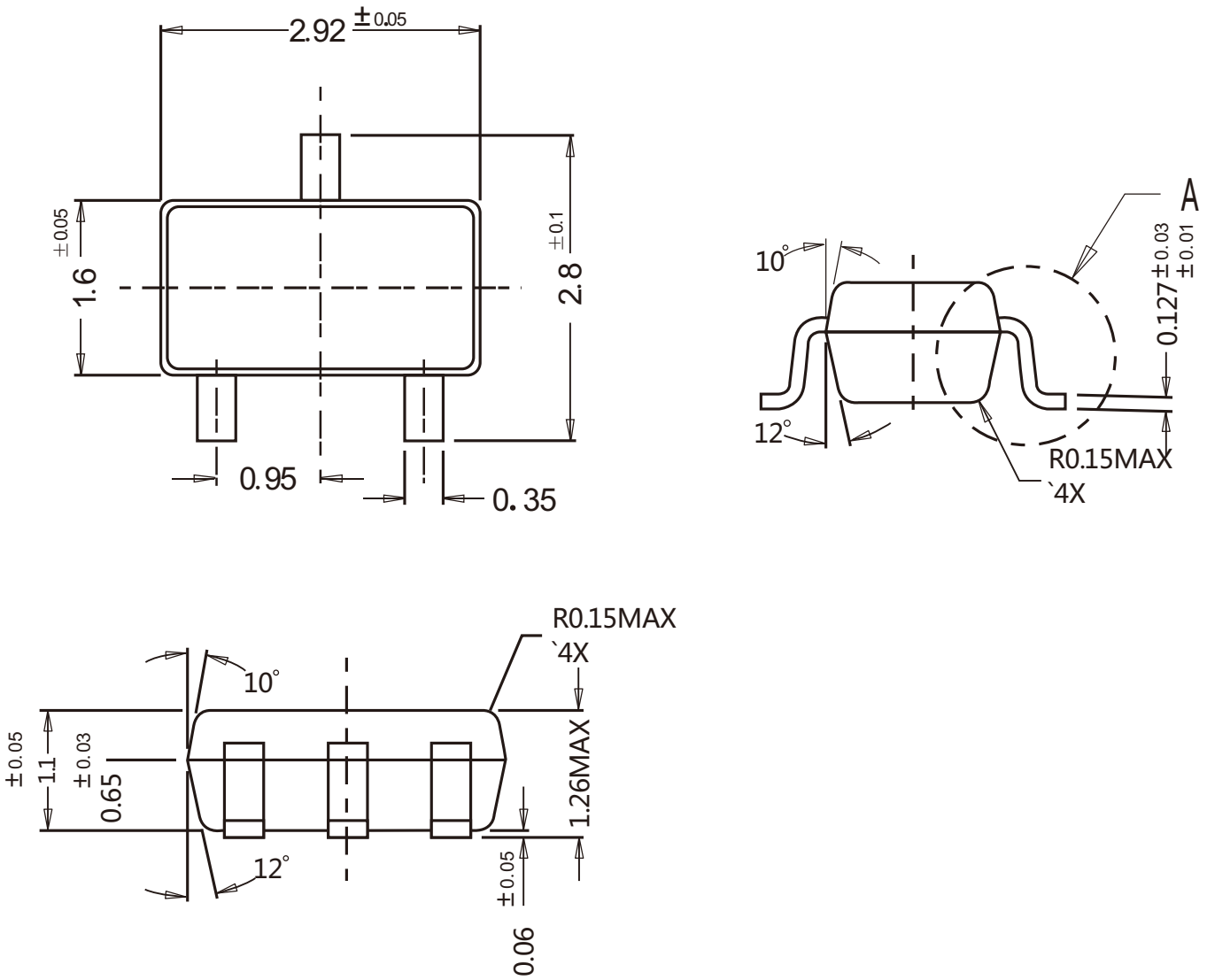


Figure 10 Safe Operation Area

Package Outline

SOT-23-3
Dimensions in mm

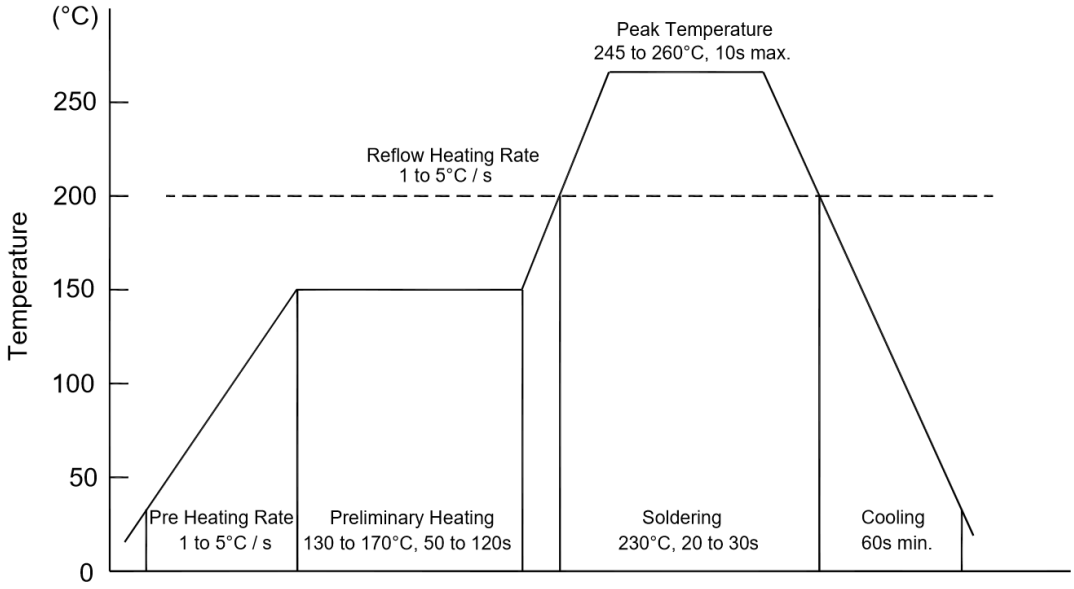


Ordering Information

Device	Package	Shipping
PJM3401PSC	SOT-23-3	3000PCS/Reel&Tape

Conditions of Soldering And Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ℃. If peak temperature is below 245 ℃, you may adjust the following parameters:

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

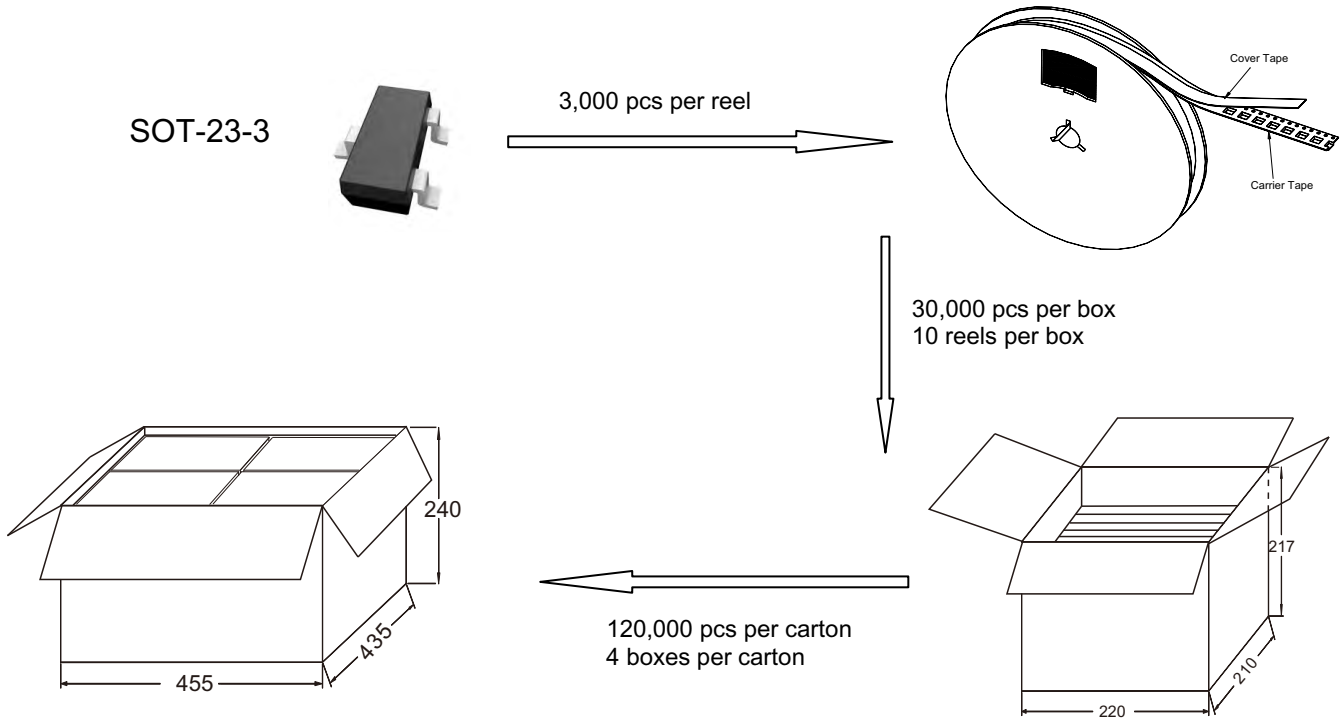
◆ Conditions of hand soldering

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

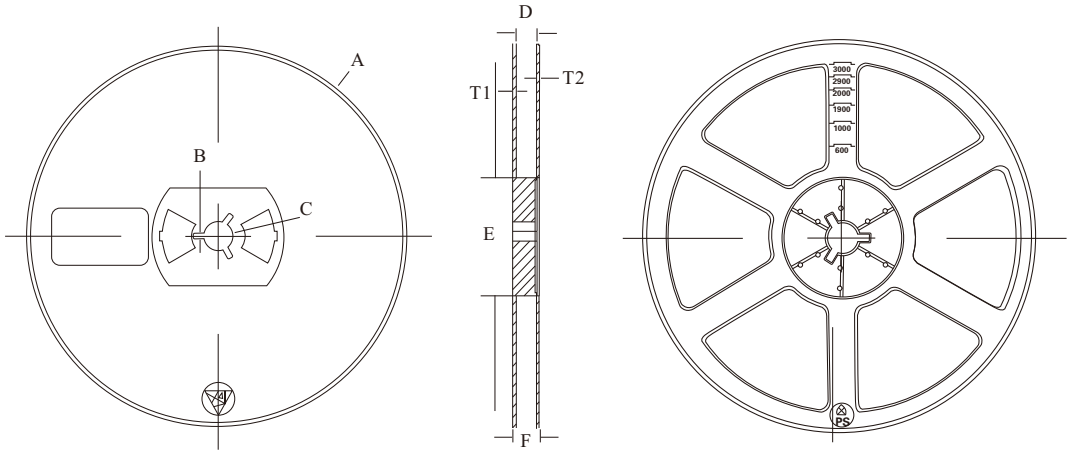
◆ Storage conditions

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

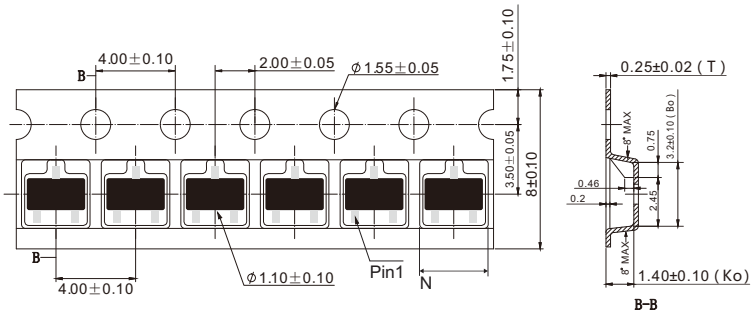
Package Specifications



2. Tape and reel data(7inch 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	1.22±0.1