



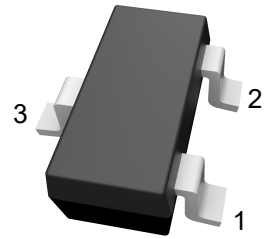
PJM10H03NSC

N-Channel Enhancement Mode Power MOSFET

Features

- $V_{DS} = 100V, I_D = 3A$
 $R_{DS(ON)} < 160m\Omega(Typ.) @ V_{GS} = 10V$
 $R_{DS(ON)} < 170m\Omega(Typ.) @ V_{GS} = 4.5V$
- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation

SOT-23-3



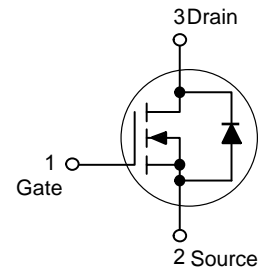
1. Gate 2.Source 3.Drain

Marking: 0103C

Applications

- Power switching application
- Uninterruptible power supply

Schematic diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	3	A
Drain Current-Pulsed ^{Note1}	I_{DM}	30	A
Maximum Power Dissipation	P_D	1.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	°C

Thermal Characteristics

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

($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.0	V
Drain-Source On-State Resistance ^{Note3}	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$	-	136	160	m Ω
		$V_{GS}=4.5V, I_D=3A$	-	140	170	
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=3A$	-	5	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	650	-	pF
Output Capacitance	C_{oss}		-	24	-	pF
Reverse Transfer Capacitance	C_{rss}		-	20	-	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=50V, R_L=19\Omega,$ $V_{GS}=10V, R_G=3\Omega$	-	6	-	nS
Turn-on Rise Time	t_r		-	4	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	20	-	nS
Turn-Off Fall Time	t_f		-	4	-	nS
Total Gate Charge	Q_g	$V_{DS}=50V, I_D=3A,$ $V_{GS}=10V$	-	20	-	nC
Gate-Source Charge	Q_{gs}		-	2.1	-	nC
Gate-Drain Charge	Q_{gd}		-	3.3	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=3A$	-	-	1.2	V
Diode Forward Current ^{Note2}	I_S		-	-	3	A

Notes:

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 Cycle $\leq 2\%$.



Typical Characteristics Curves

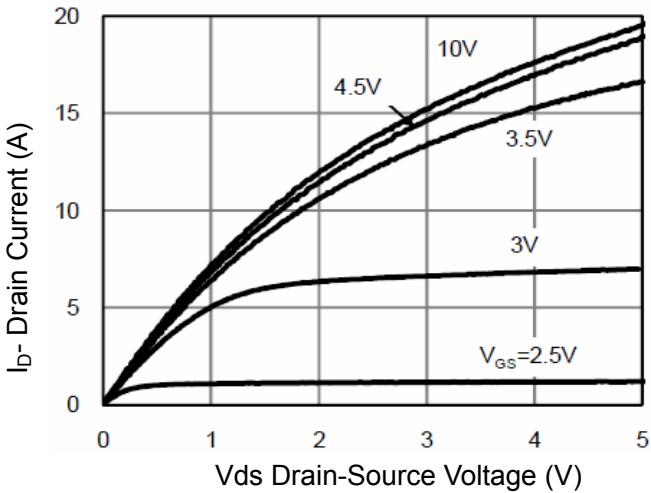


Figure 1 Output Characteristics

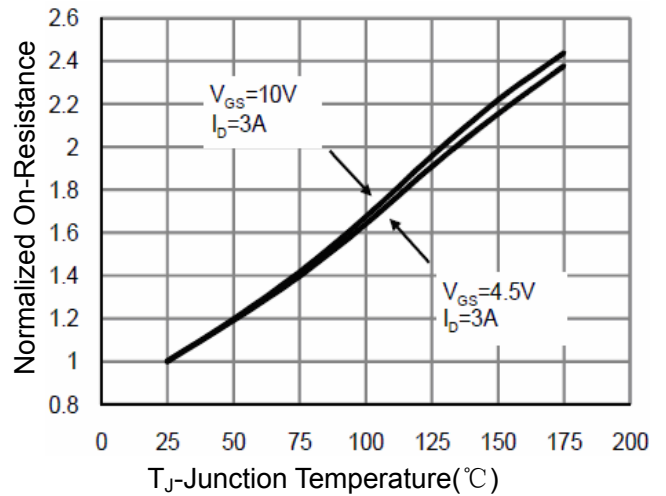


Figure 4 Rdson-Junction Temperature

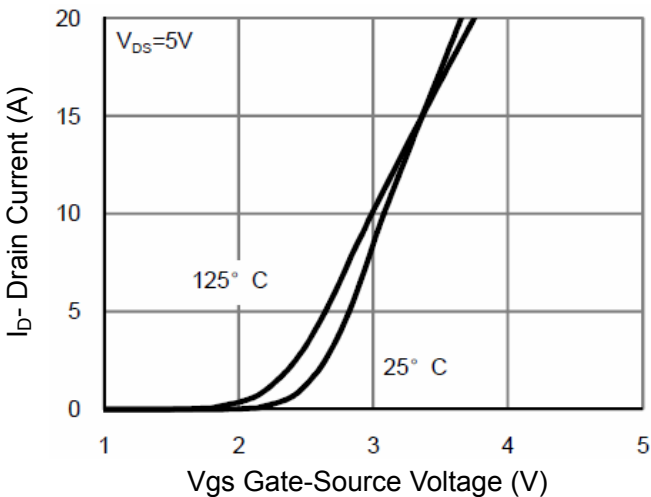


Figure 2 Transfer Characteristics

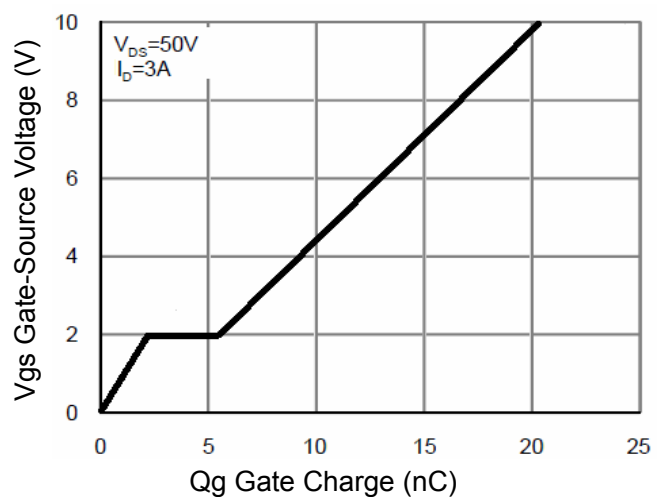


Figure 5 Gate Charge

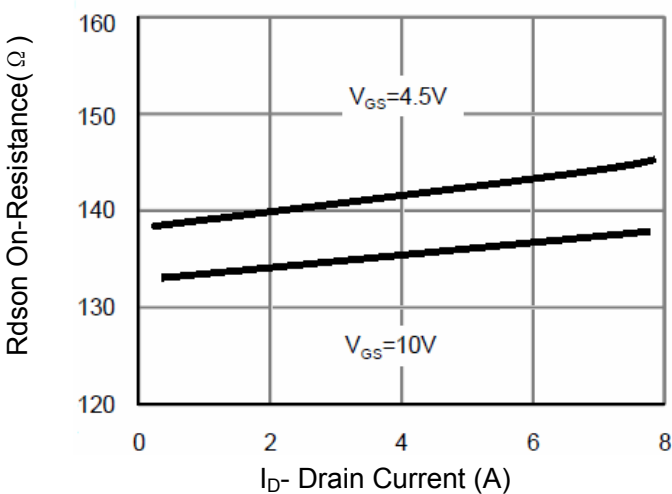


Figure 3 Rdson- Drain Current

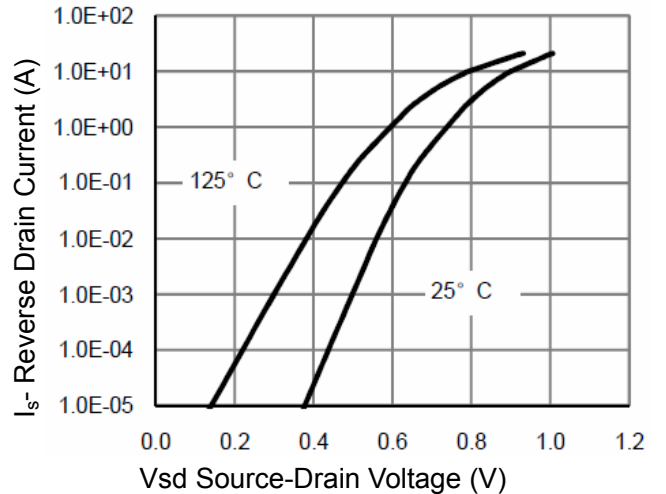


Figure 6 Source- Drain Diode Forward



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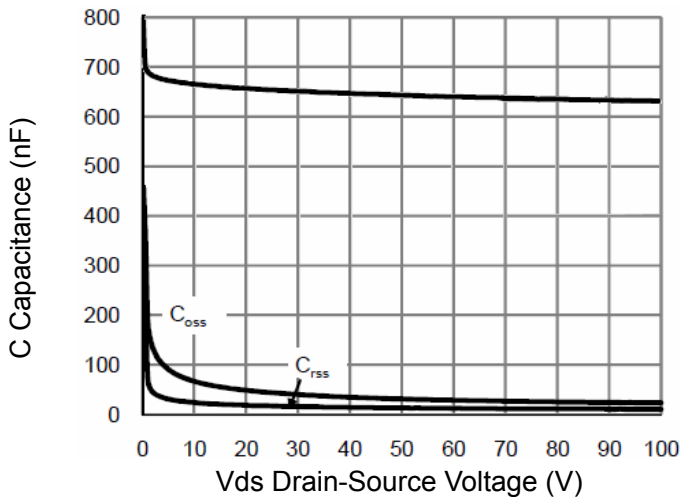


Figure 7 Capacitance vs Vds

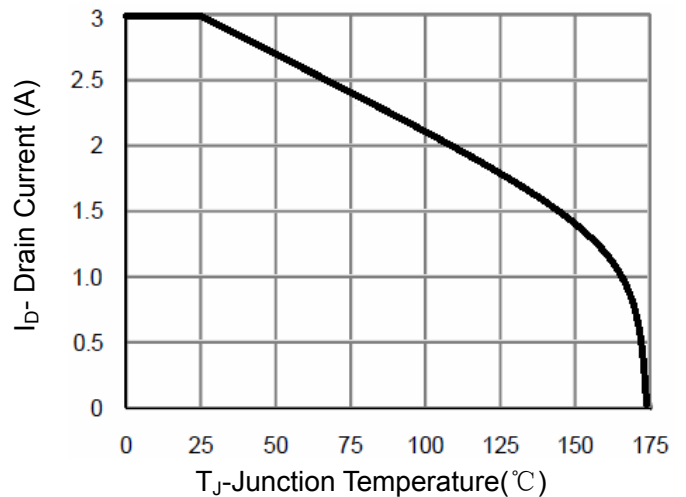


Figure 9 BV_{DSS} vs Junction Temperature

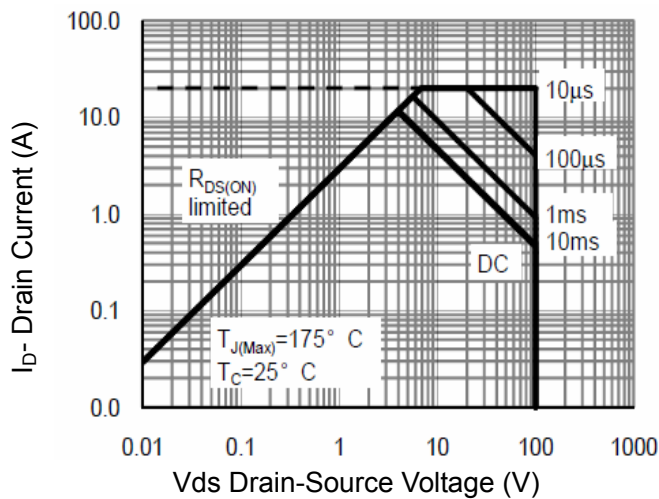


Figure 8 Safe Operation Area

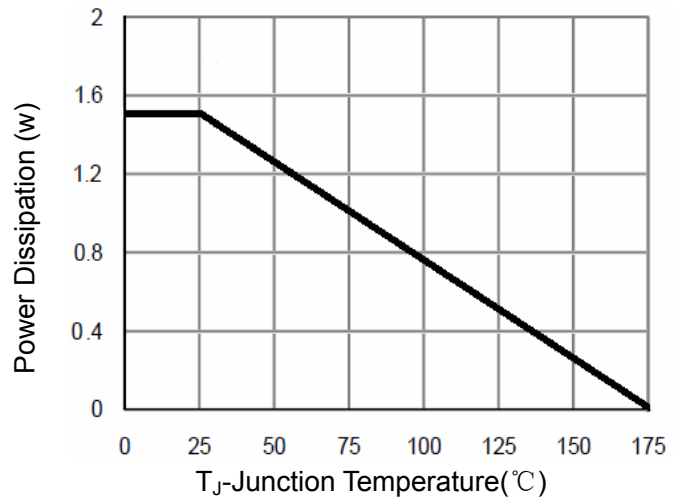


Figure 10 Power De-rating

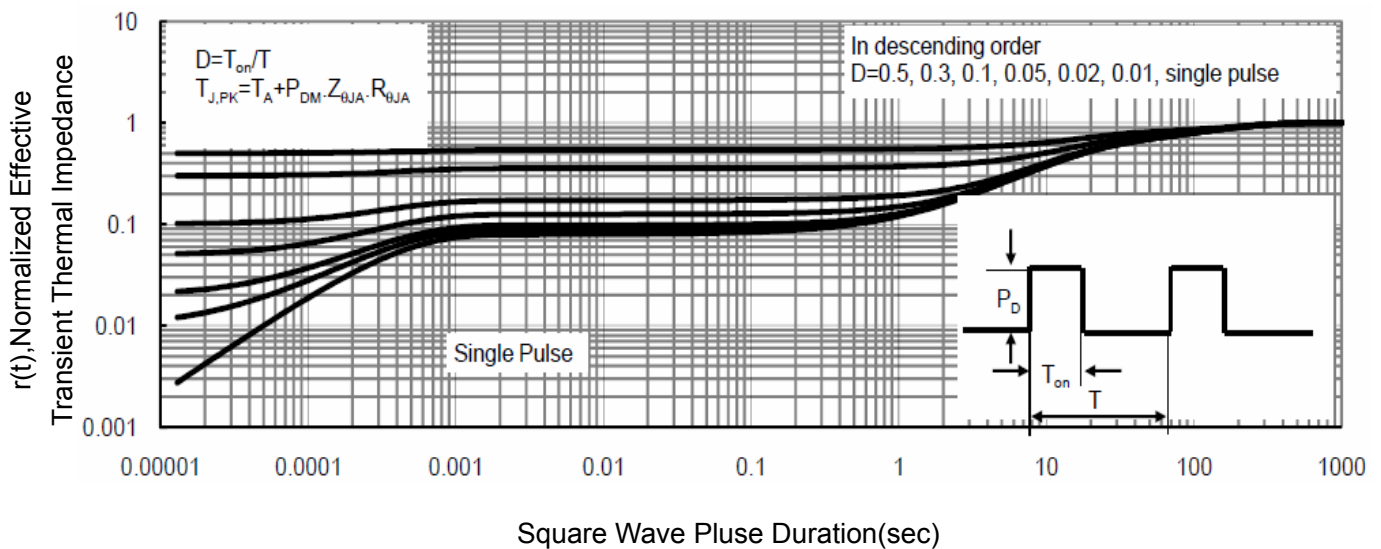


Figure 11 Normalized Maximum Transient Thermal Impedance



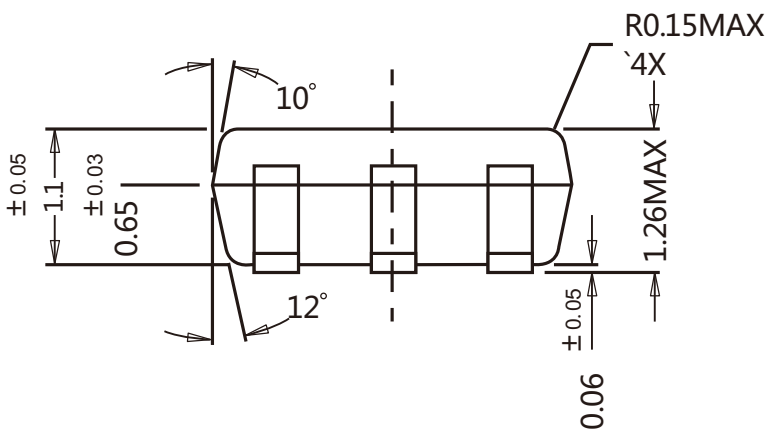
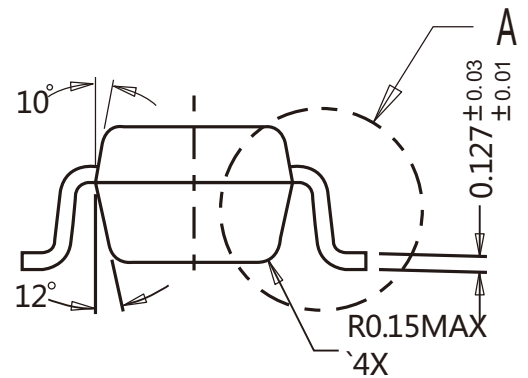
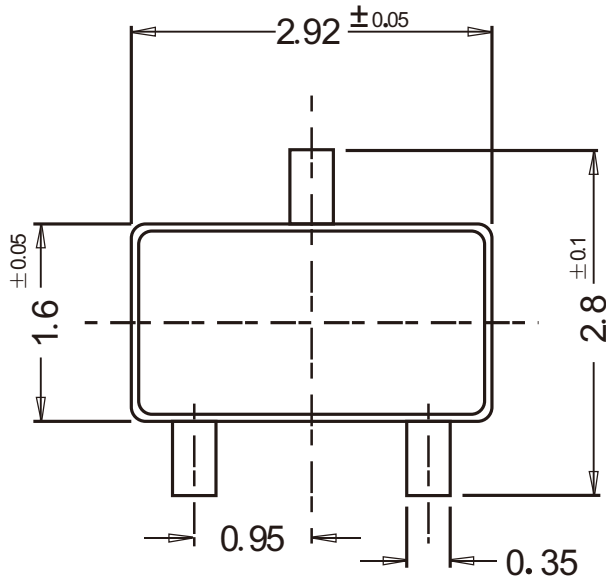
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Package Outline

SOT-23-3

Dimensions in mm



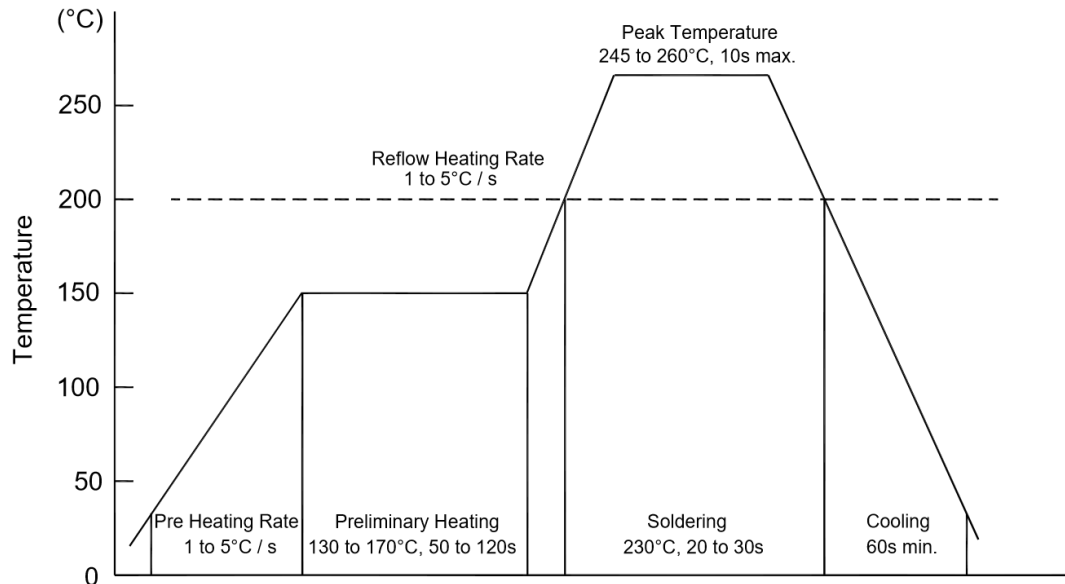
Ordering Information

Device	Package	Shipping
PJM10H03NSC	SOT-23-3	3000PCS/Reel&Tape



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

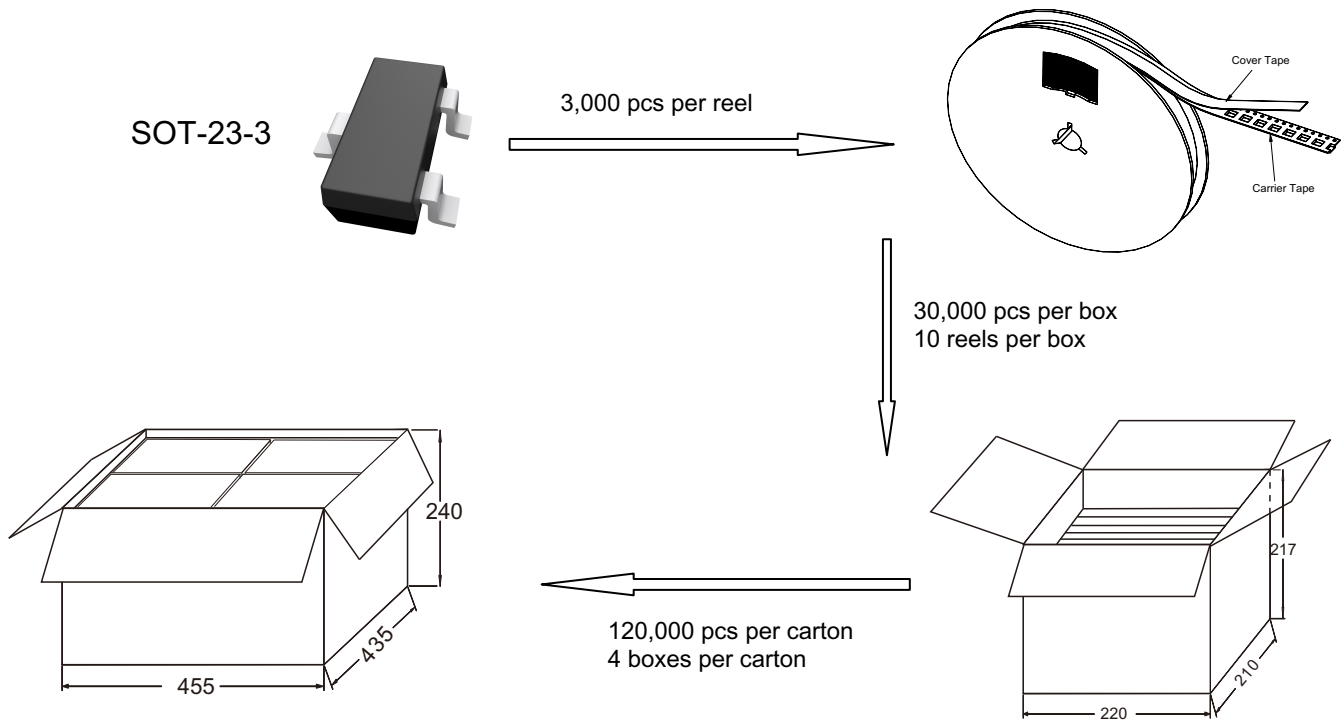
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing



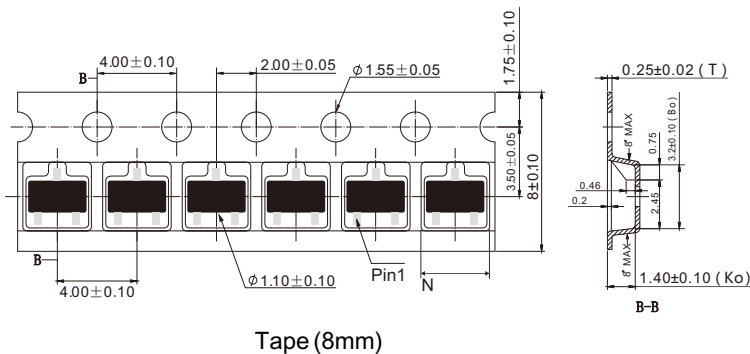
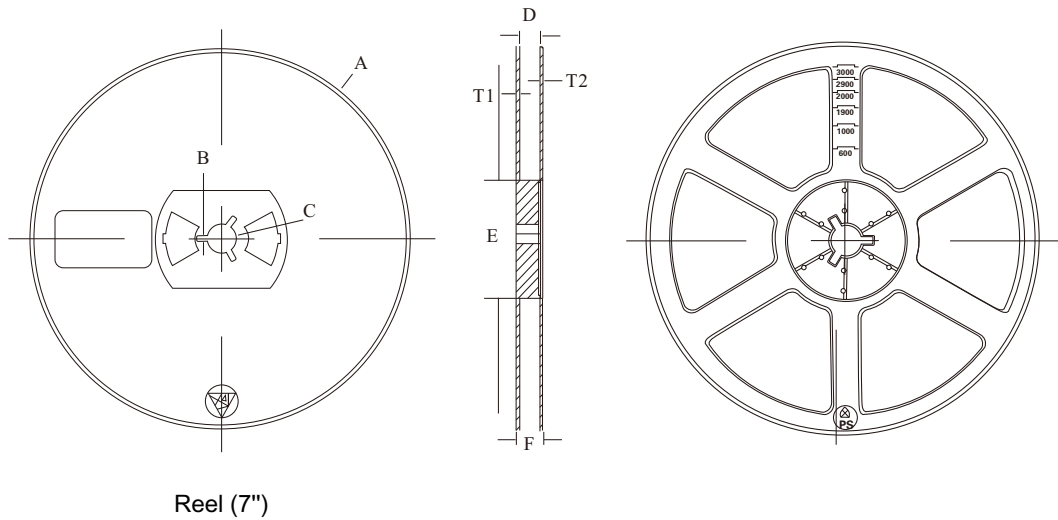
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Package Specifications



2. Tape and reel data(7inch Units:mm)



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

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