



# PJM60H12MNSA

## N- Channel Depletion Mode MOSFETS

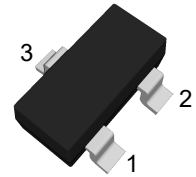
### Product Summary

- $V_{DS}= 600V, I_D= 0.03A$
- $R_{DS(on)} < 700\Omega @ V_{GS}= 0V$
- $R_{DS(on)} < 800\Omega @ V_{GS}= 10V$

### Features

- Depletion Mode
- ESD Improved Capability
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

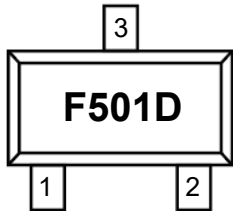
### SOT-23



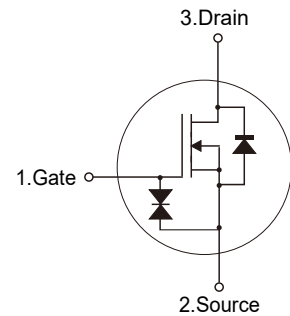
(Top View)

Pin	Description
1	Gate
2	Source
3	Drain

### Marking Code



### Schematic Diagram



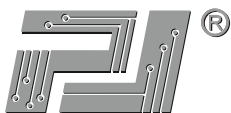
### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	600	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	0.03	A
Drain Current-Pulsed	$I_{DM}$	0.12	A
Maximum Power Dissipation	$P_D$	0.5	W
Gate Source ESD (HBM-C=100pF, R=1.5k $\Omega$ )	$V_{ESD(G-S)}$	300	V
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	250	°C/W
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### Electrical Characteristics

( $T_a=25^{\circ}\text{C}$  unless otherwise specified)

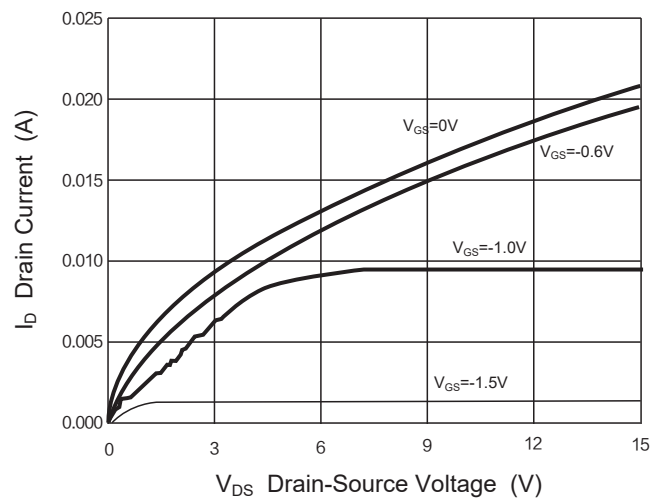
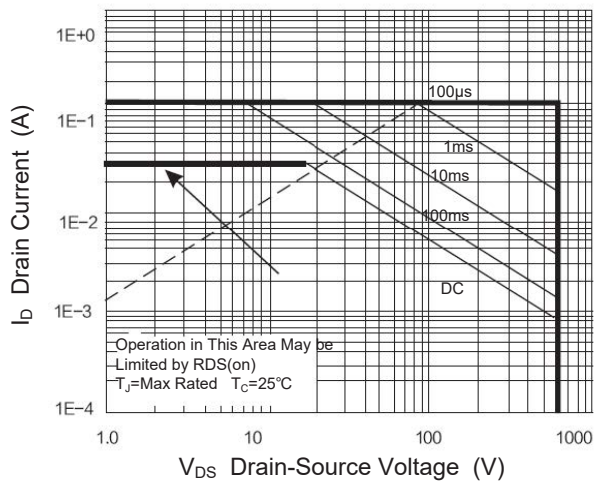
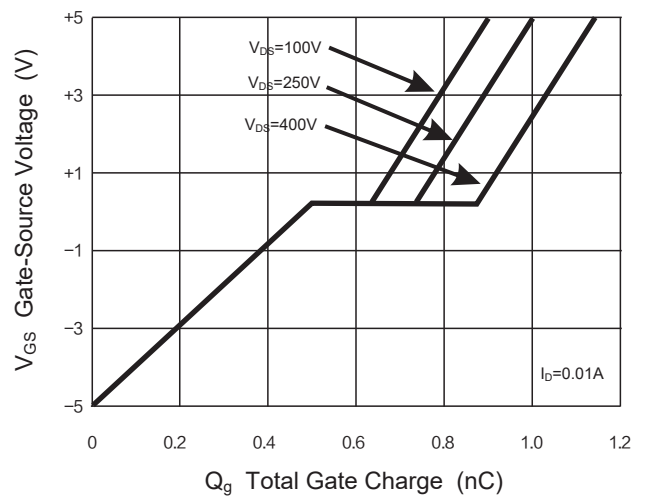
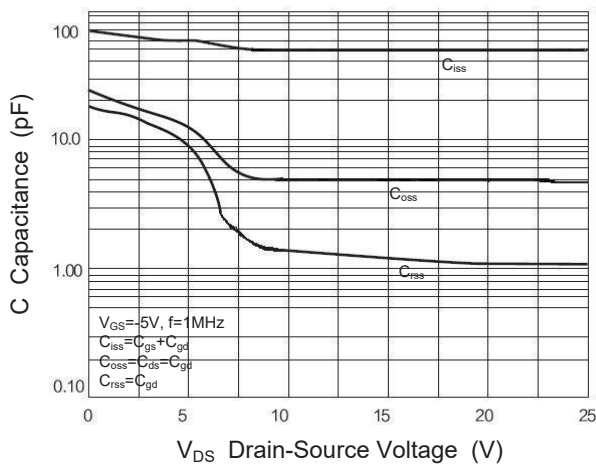
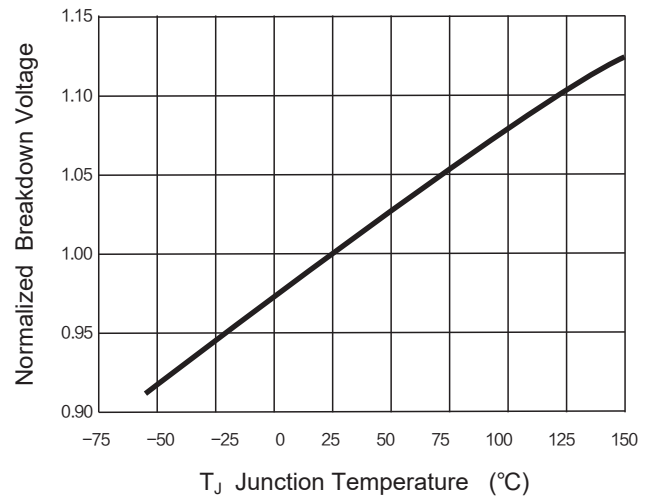
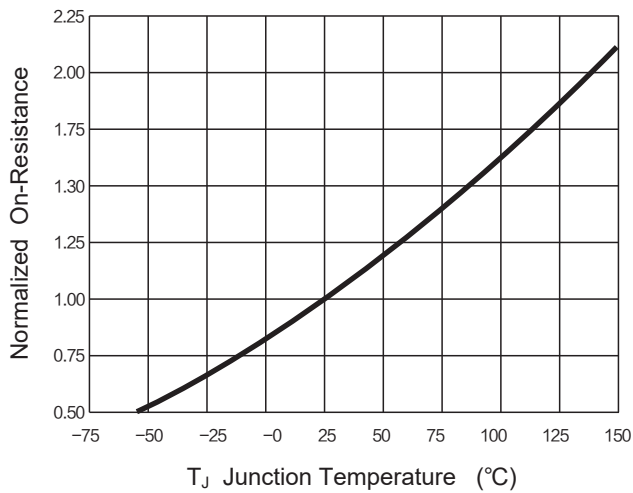
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>OFF Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=-5V, I_D=250\mu A$	600	--	--	V
Gate-Body Leakage Current	$I_{D(off)}$	$V_{DS}=600V, V_{GS}=-5V$	--	--	0.1	$\mu A$
		$V_{DS}=480V, V_{GS}=-5V,$ $T_A=125^{\circ}\text{C}$	--	--	10	$\mu A$
Gate Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V$	--	--	$\pm 200$	nA
<b>ON Characteristics</b>						
Gate-to-Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS}=3V, I_D=8\mu A$	-2.7	-1.8	-1	V
On-State Drain Current	$I_{DSS}$	$V_{GS}=0V, V_{DS}=25V$	12	--	--	mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=0V, I_D=3mA$	--	350	700	$m\Omega$
		$V_{GS}=10V, I_D=16mA$	--	400	800	$m\Omega$
<b>Dynamic Characteristics</b>						
Forward Transconductance	$g_{FS}$	$V_{DS}=50V, I_D=0.01A$	8	17	--	mS
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=-5V, f=1MHz$	--	50	--	pF
Output Capacitance	$C_{oss}$		--	4.53	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	1.08	--	pF
Total Gate Charge	$Q_g$	$V_{DD}=400V, I_D=0.01A,$ $V_{GS}=-5V\sim 5V$	--	1.14	--	nC
Gate-Source Charge	$Q_{gs}$		--	0.5	--	nC
Gate-Drain Charge	$Q_{gd}$		--	0.37	--	nC
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=300V, I_D=0.01A$ $V_{GS}=-5V\sim 7V, R_G=6\Omega$	--	9.9	--	nS
Turn-on Rise Time	$t_r$		--	55.8	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	56.4	--	nS
Turn-off Fall Time	$t_f$		--	136	--	nS
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=-5V, I_F=16mA$	--	--	1.2	V
Diode Forward Current	$I_S$		--	--	0.025	A
<b>Gate-Source Zener Diode</b>						
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=\pm 1mA$ (Open Drain)	--	0.75	1.2	V



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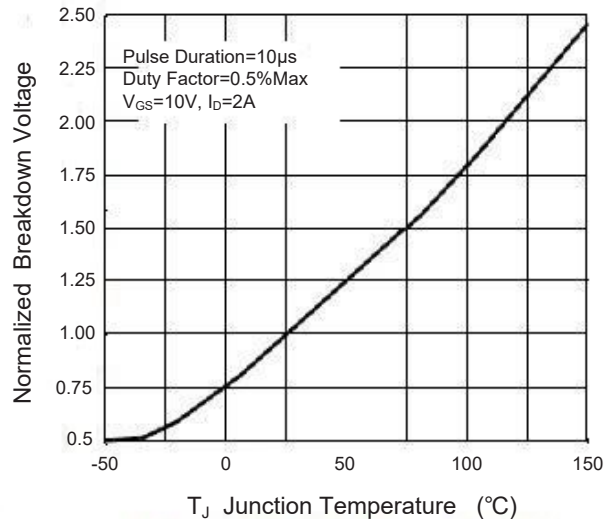
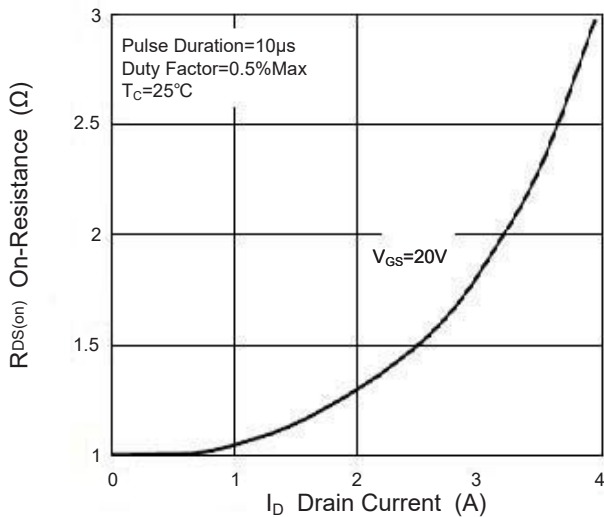
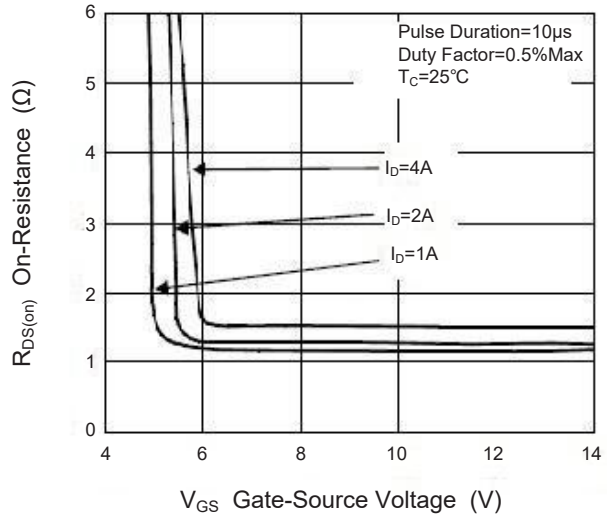
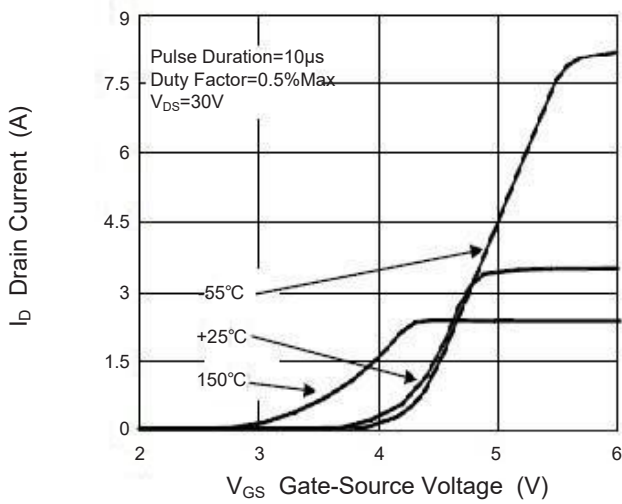
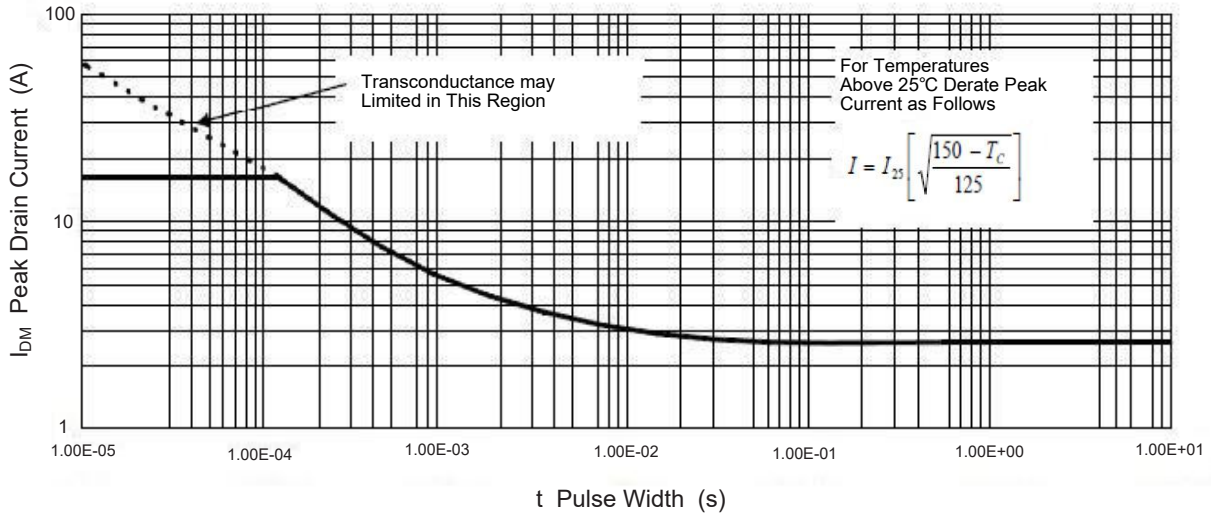
### Typical Characteristic Curves





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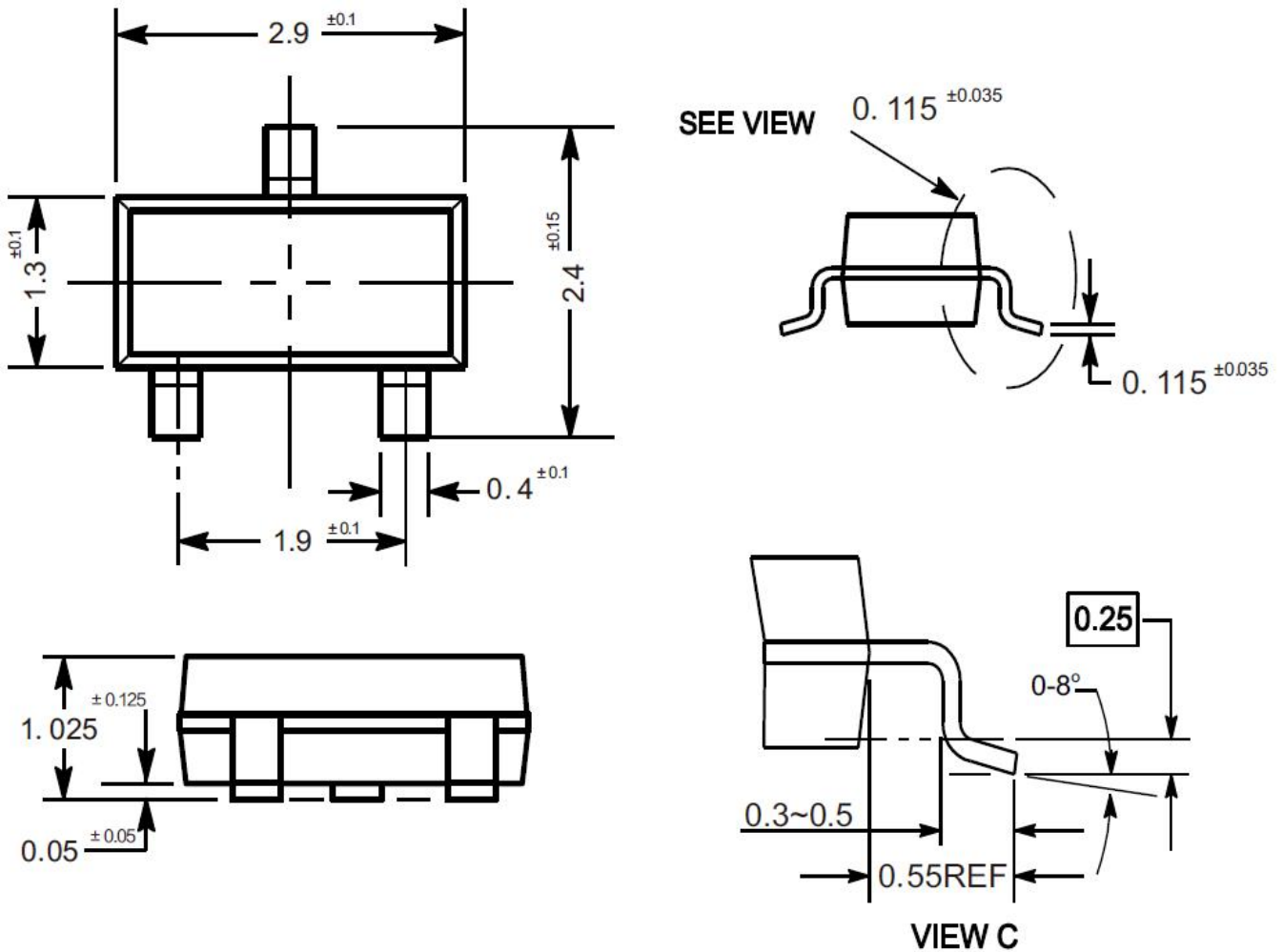
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### Package Outline

SOT-23

Dimensions in mm

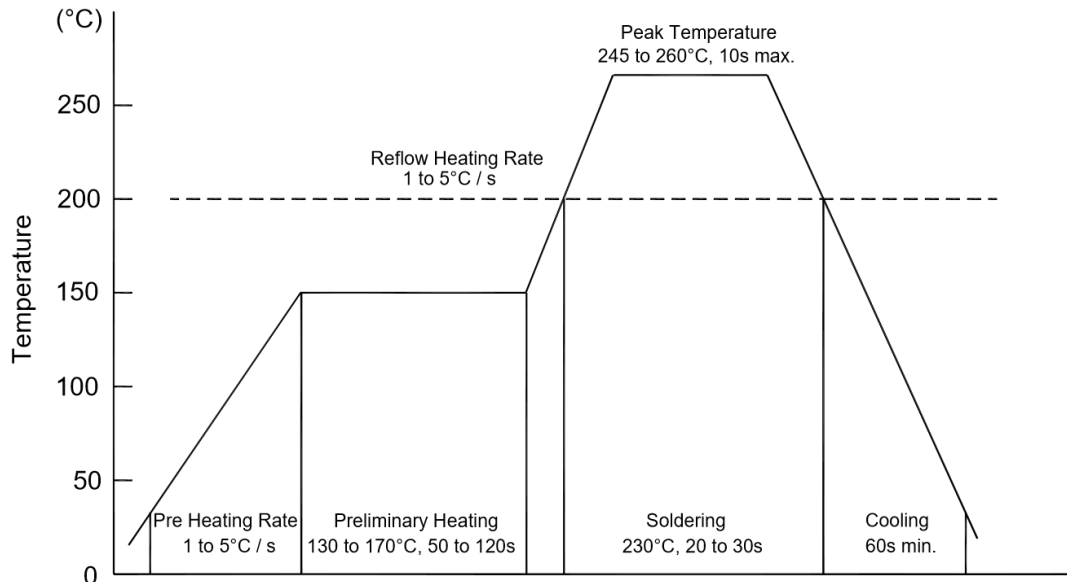


### Ordering Information

Device	Package	Shipping
PJM60H12MNSA	SOT-23	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

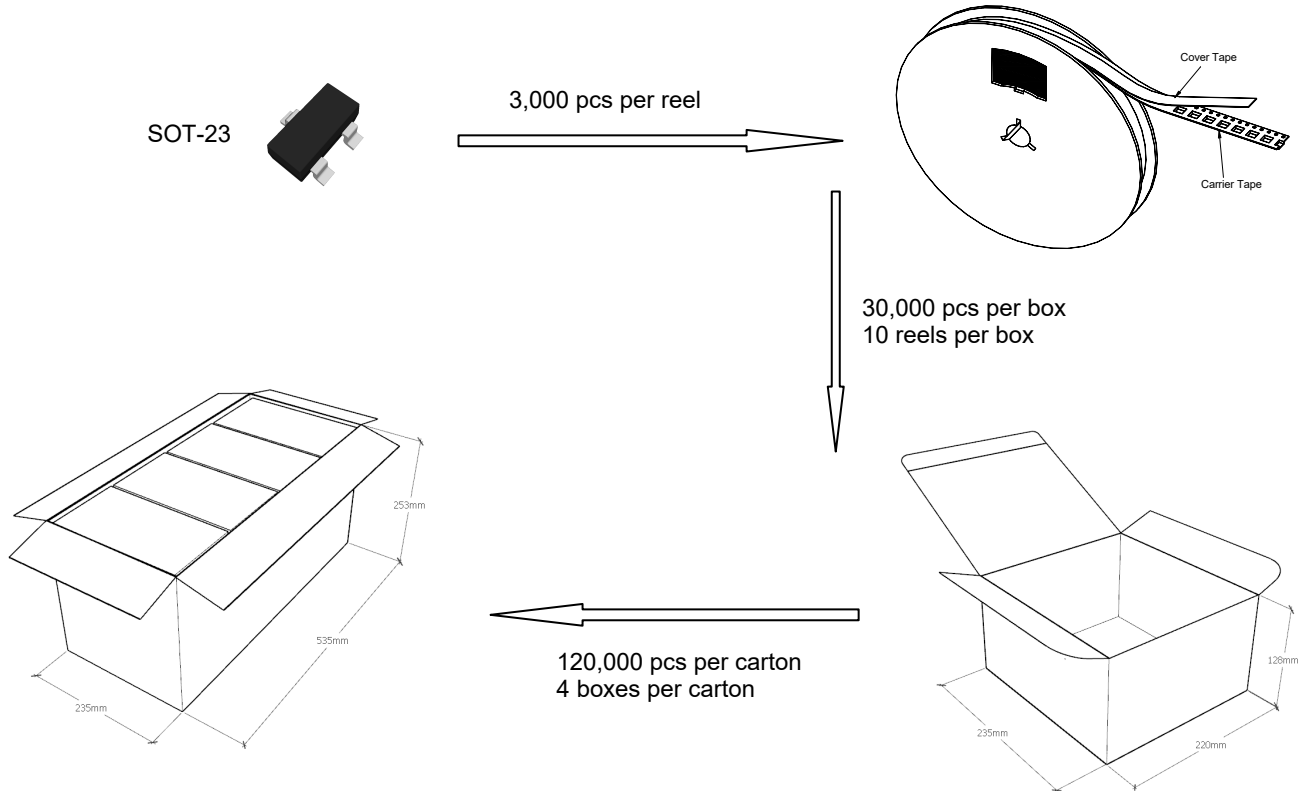
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

#### ◆ Storage conditions

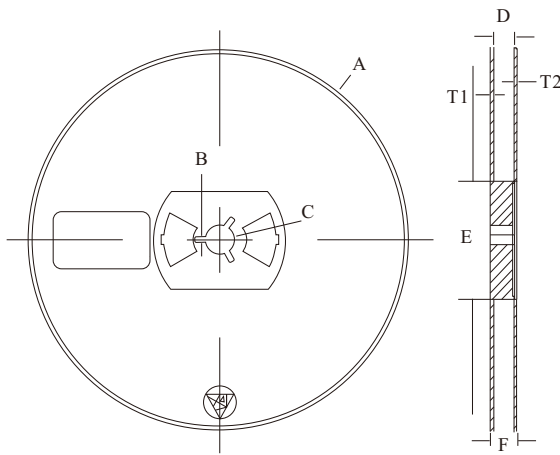
- **Temperature**  
5 to 40 °C
- **Humidity**  
30 to 80% RH
- **Recommended period**  
One year after manufacturing

### Package Specifications

- The method of packaging

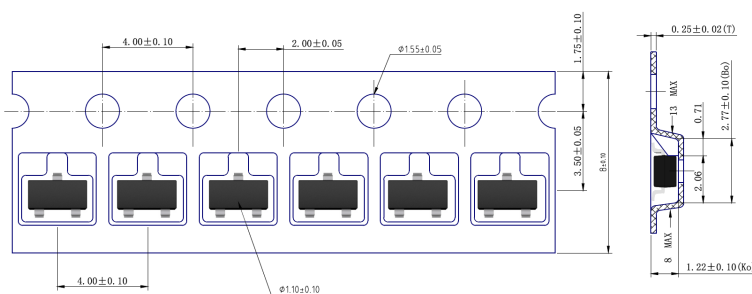


### ◆ Embossed tape and reel data



Symbol	Value (unit: mm)
A	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

Reel (7")



单击下面可查看定价，库存，交付和生命周期等信息

[>>PJSEMI\(平晶微\)](#)