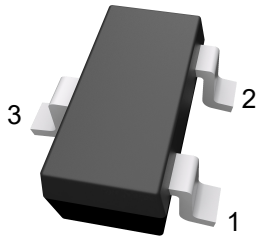
PJM3416NSC
N- Enhancement Mode Field Effect Transistor

SOT-23-3



1. Gate 2.Source 3.Drain

Marking: P16

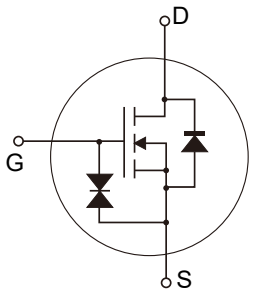
Features

- V_{DS} = 20V,I_D = 6.5A
  $R_{DS(ON)}$ < 26mΩ @ V_{GS}=2.5V
  $R_{DS(ON)}$ < 22mΩ @ V_{GS}=4.5V
- High power and current handing capability
- ESD protected(HBM) up to 2KV

Applications

- Load switch
- PWM applications

Schematic diagram



Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	V
Drain Current-Continuous	I_D	6.5	A
Drain Current-Pulsed Note1	I_{DM}	30	A
Maximum Power Dissipation	P_D	1.4	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	150,-55 To 150	℃

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	89	℃/W

Electrical Characteristics

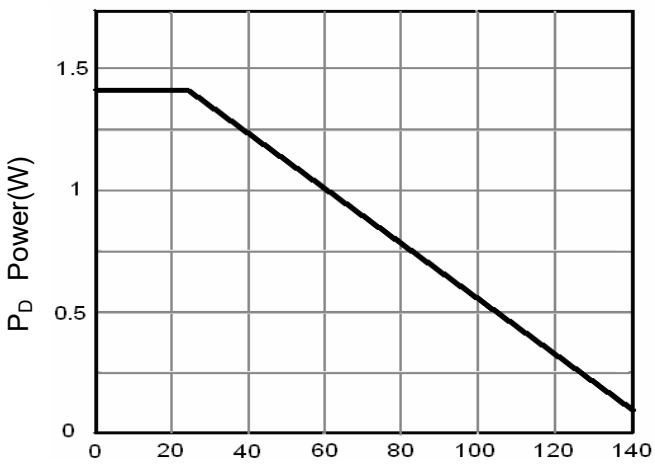
(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V I_D=250μA	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±8V,V_{DS}=0V	-	-	±10	μA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.45	0.7	1	V
Drain-Source On-State Resistance Note3	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6.5A	-	17	22	mΩ
		V_{GS}=2.5V, I_D=5.5A	-	21	26	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=5V,I_D=6.5A	8	-	-	S
Dynamic Characteristics						
Input Capacitance	C_{lss}	V_{DS}=10V,V_{GS}=0V, f=1.0MHz	-	1295	-	pF
Output Capacitance	C_{oss}		-	160	-	pF
Reverse Transfer Capacitance	C_{rss}		-	87	-	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V, R_L=1.5Ω V_{GS}=4.5V,R_{GEN}=3Ω	-	280	-	nS
Turn-on Rise Time	t_r		-	328	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	3.76	-	nS
Turn-Off Fall Time	t_f		-	2.24	-	nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=6.5A, V_{GS}=4.5V	-	10	-	nC
Gate-Source Charge	Q_{gs}		-	4.2	-	nC
Gate-Drain Charge	Q_{gd}		-	2.6	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=6.5A	-	-	1.2	V
Diode Forward Current Note2	I_S		-	-	6.5	A

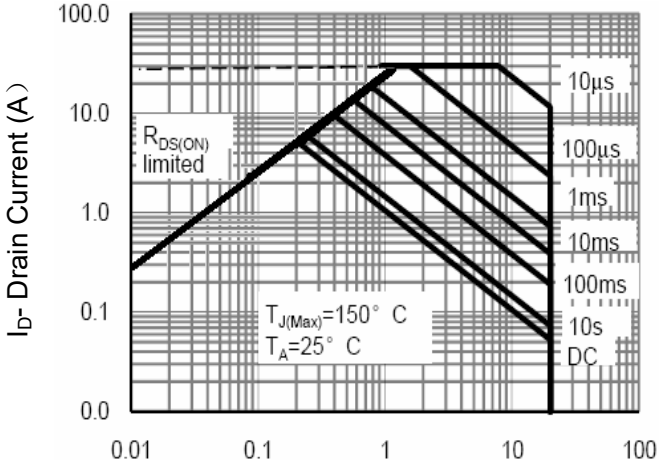
Notes:

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%.

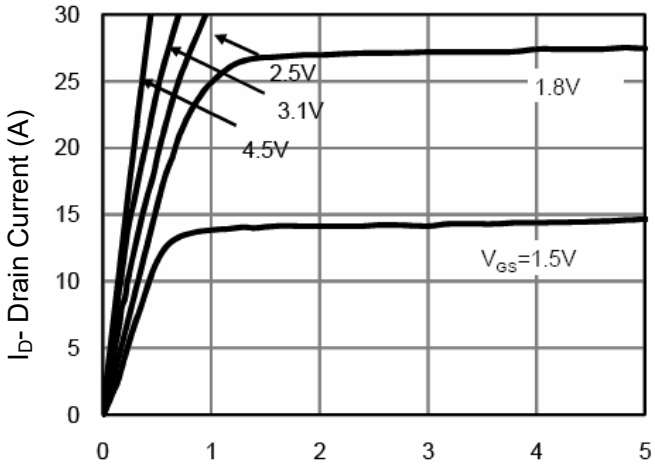
Typical Characteristics Curves



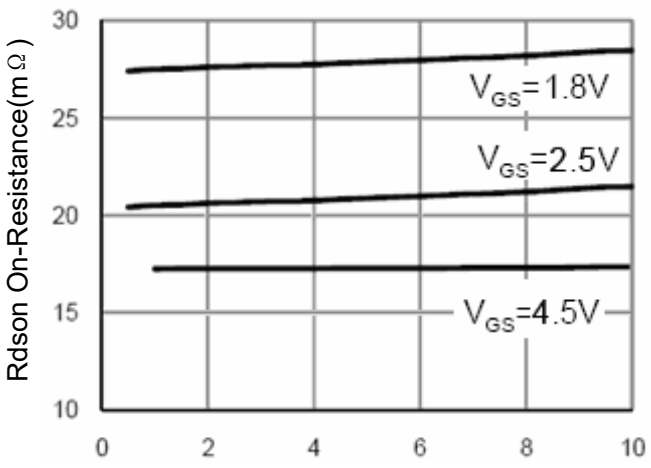
Power Dissipation



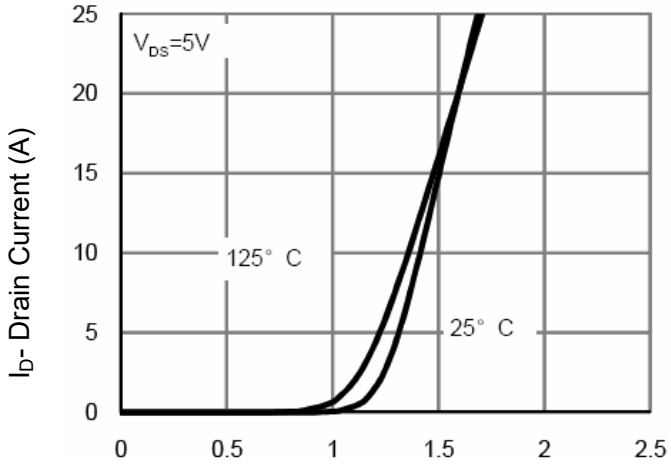
Safe Operation Area



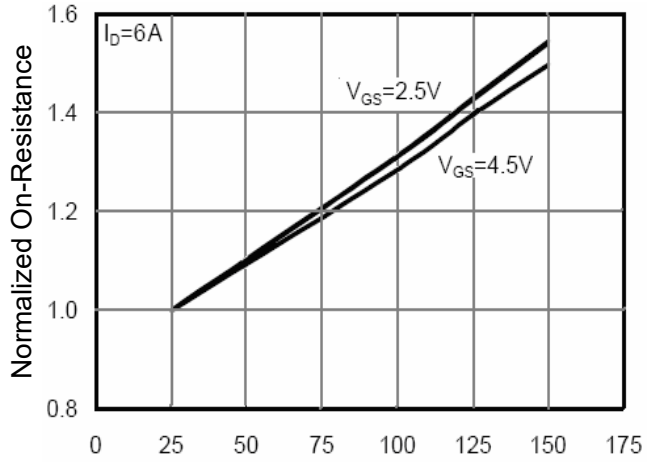
Output Characteristics



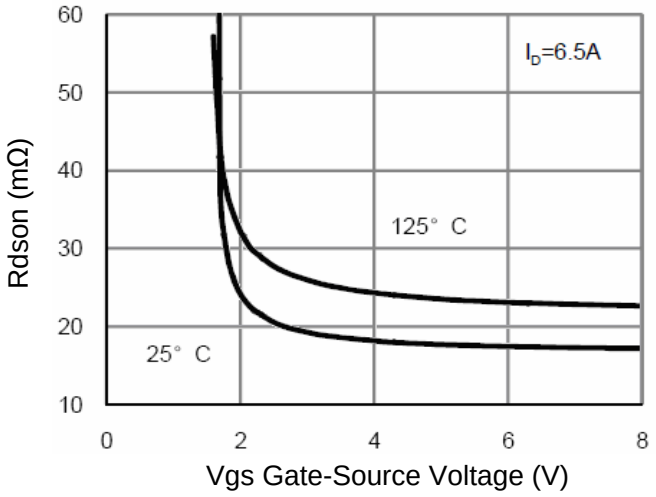
Drain-Source On-Resistance



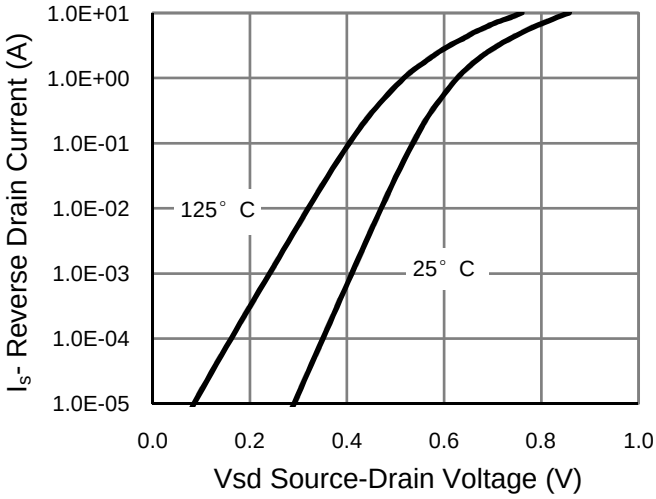
Transfer Characteristics



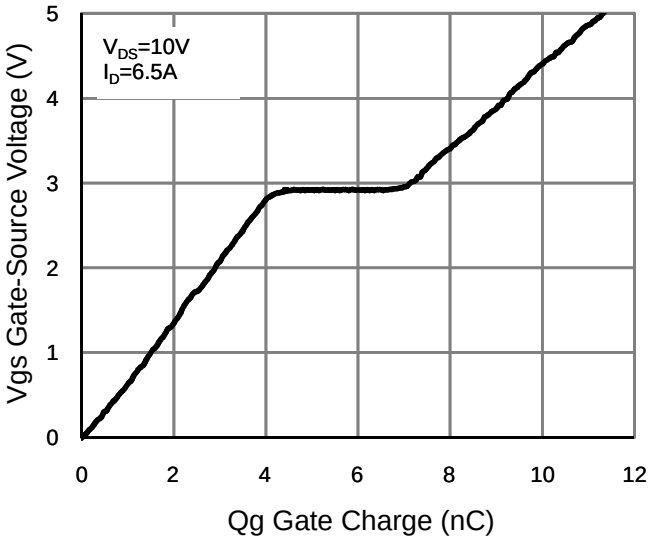
Drain-Source On-Resistance



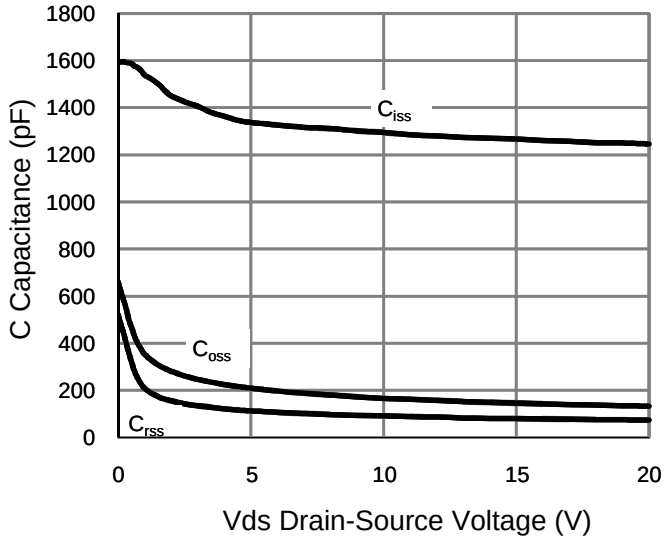
Rdson vs Vgs



Source- Drain Diode Forward



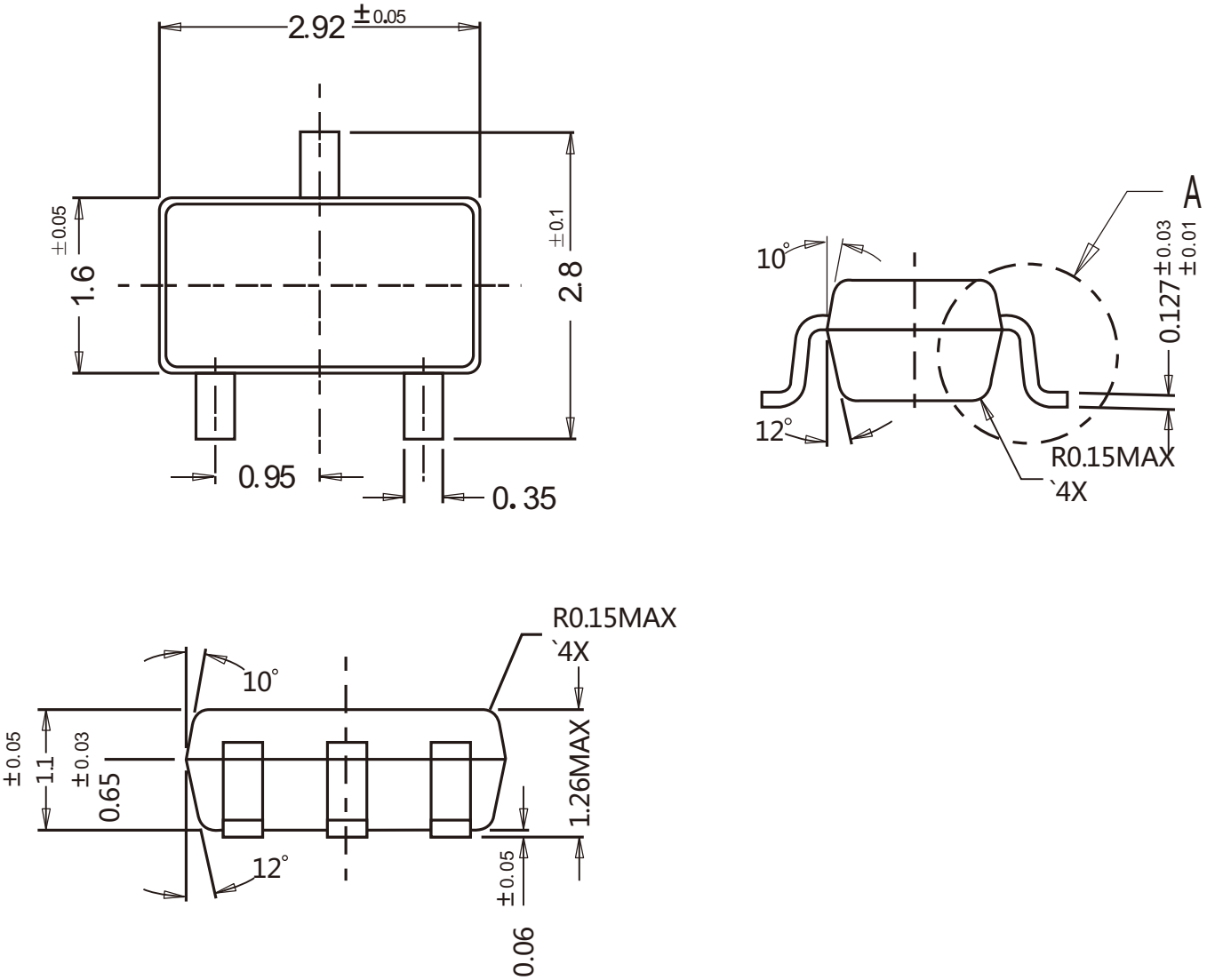
Gate Charge



Capacitance vs Vds

Package Outline

SOT-23-3
Dimensions in mm

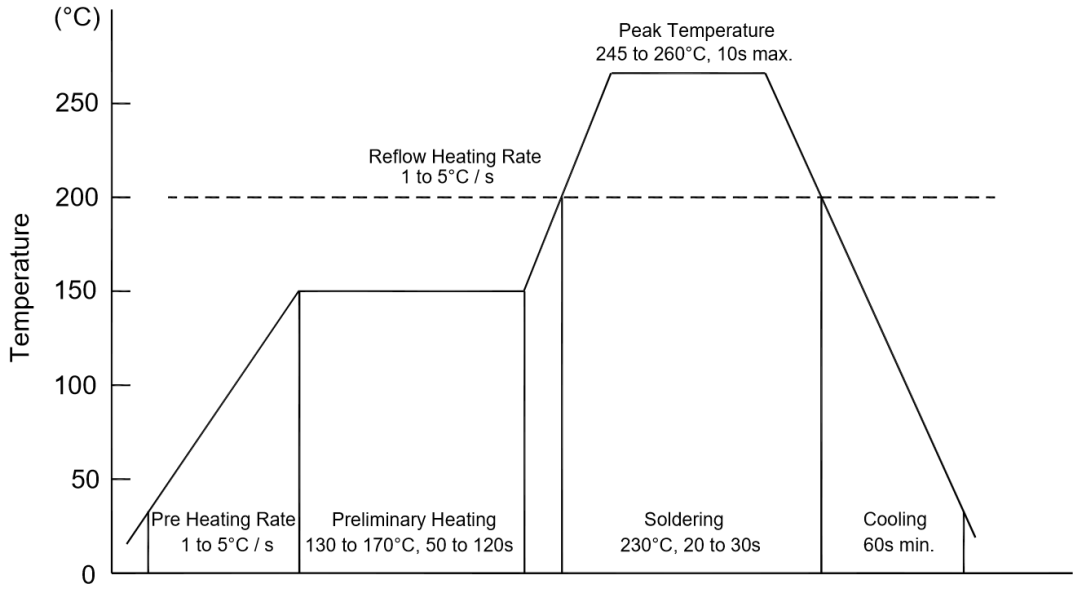


Ordering Information

Device	Package	Shipping
PJM3416NSC	SOT-23-3	3000/Reel&Tape(7inch)

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ^{O}C. If peak temperature is below 245 ^{O}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 ^{O}C
- Time: 3s max.
- Times: one time

◆ Storage conditions

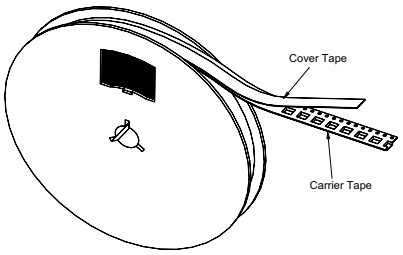
- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

Package Specifications

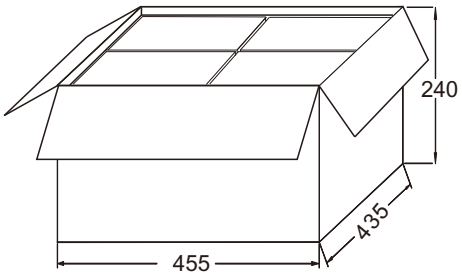
SOT-23-3



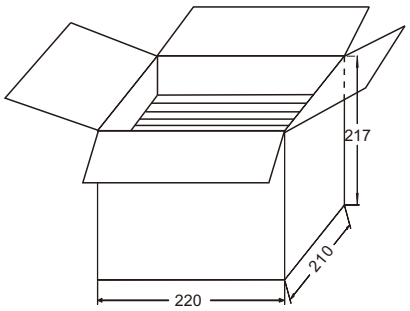
3,000 pcs per reel



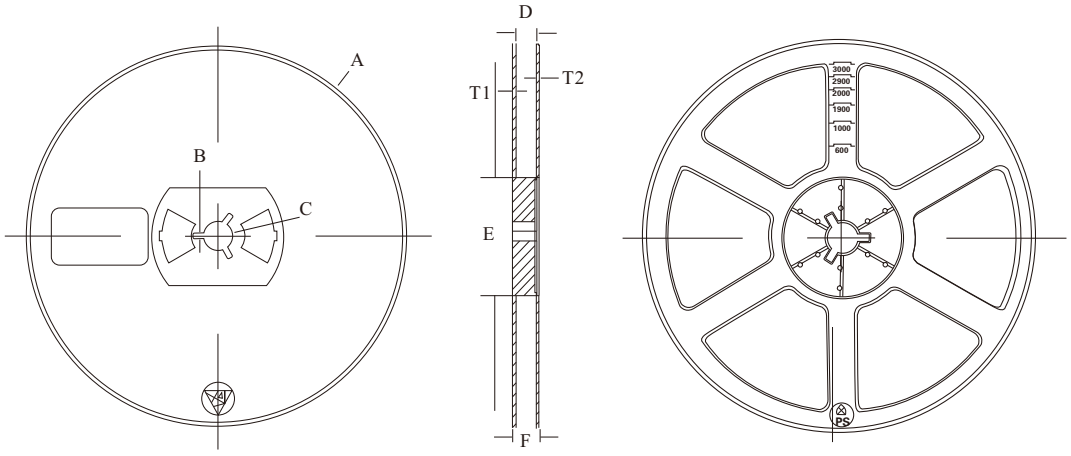
30,000 pcs per box
10 reels per box



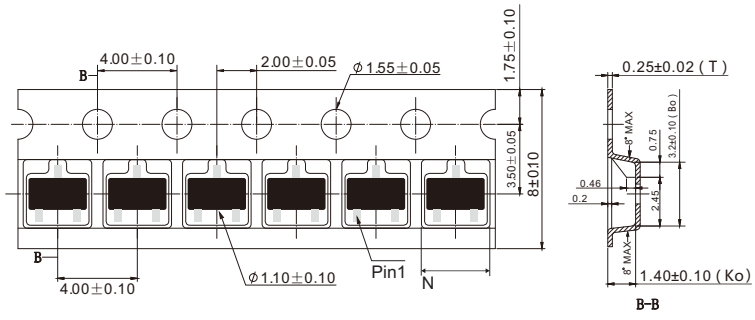
120,000 pcs per carton
4 boxes per carton



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