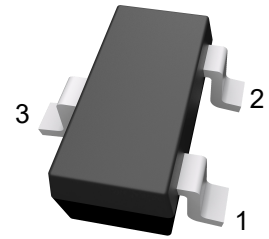




# PJM3404NSC

## N- Enhancement Mode Field Effect Transistor

SOT-23-3



1. Gate 2. Source 3. Drain  
**Marking: P4**

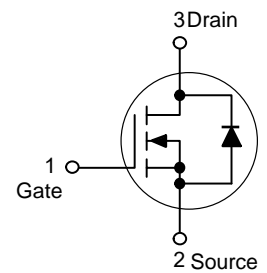
### Features

- $V_{DS} = 30V, I_D = 5.8A$   
 $R_{DS(ON)} < 28m\Omega @ V_{GS}=10V$   
 $R_{DS(ON)} < 40m\Omega @ V_{GS}=4.5V$
- Low Gate Charge and  $R_{DS(on)}$
- High power and current handling capability

### Applications

- Load switch and in PWM applications

### Schematic diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	5.8	A
Drain Current-Pulsed <sup>Note1</sup>	$I_{DM}$	20	A
Maximum Power Dissipation	$P_D$	1.4	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	150, -55 To 150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <sup>Note2</sup>	$R_{\theta JA}$	89	°C/W
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**Electrical Characteristics**

(T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	30	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V	-	-	1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Gate Threshold Voltage <sup>Note3</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1	-	2.4	V
Drain-Source On-State Resistance <sup>Note3</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =5A	-	-	28	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =4A	-	-	40	mΩ
Forward Transconductance <sup>Note3</sup>	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =5A	-	15	-	S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1.0MHz	-	255	-	pF
Output Capacitance	C <sub>oss</sub>		-	45	-	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	35	-	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =15V, R <sub>L</sub> =3Ω V <sub>GS</sub> =10V, R <sub>GEN</sub> =3Ω	-	4.5	-	nS
Turn-on Rise Time	t <sub>r</sub>		-	2.5	-	nS
Turn-Off Delay Time	t <sub>d(off)</sub>		-	14.5	-	nS
Turn-Off Fall Time	t <sub>f</sub>		-	3.5	-	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =5A, V <sub>GS</sub> =10V	-	5.2	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	0.85	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	1.3	-	nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage <sup>Note 3</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =5A	-	-	1.2	V
Diode Forward Current <sup>Note 2</sup>	I <sub>S</sub>		-	-	5.8	A

**Notes:**

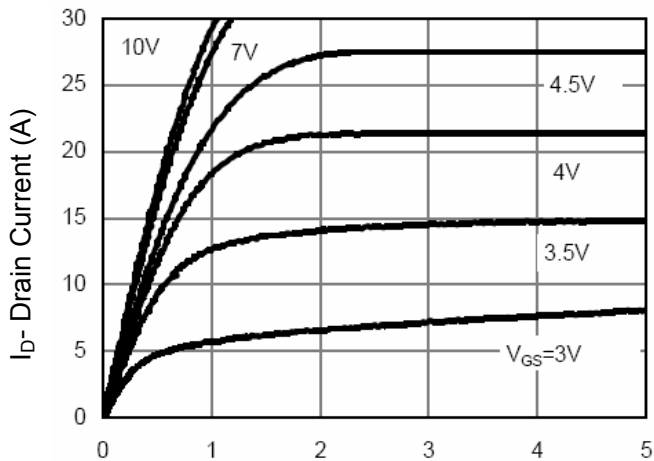
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.



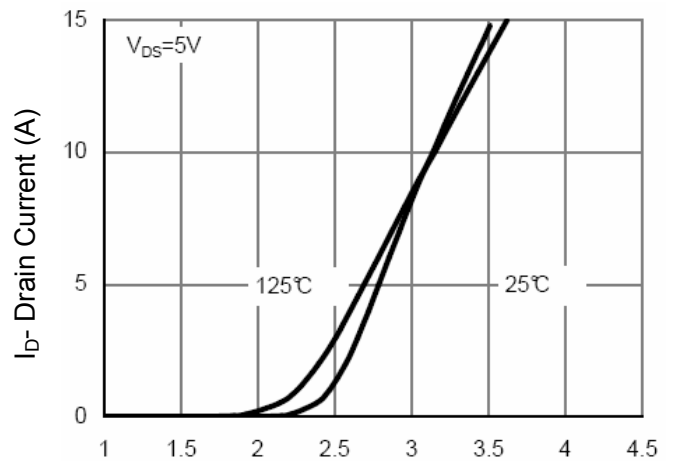
# PJM3404NSC

## N- Enhancement Mode Field Effect Transistor

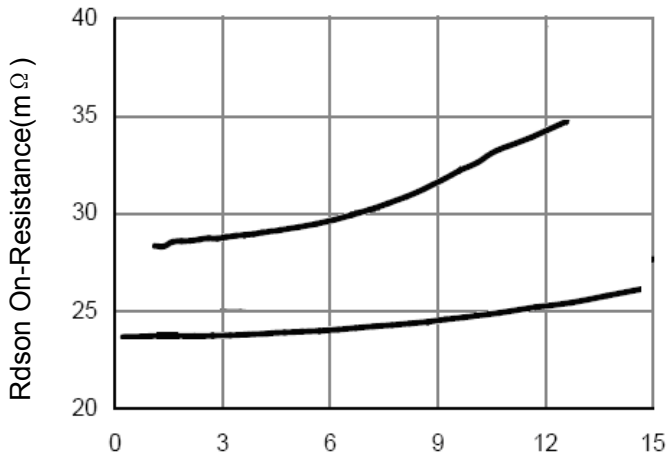
### Typical Characteristics Curves



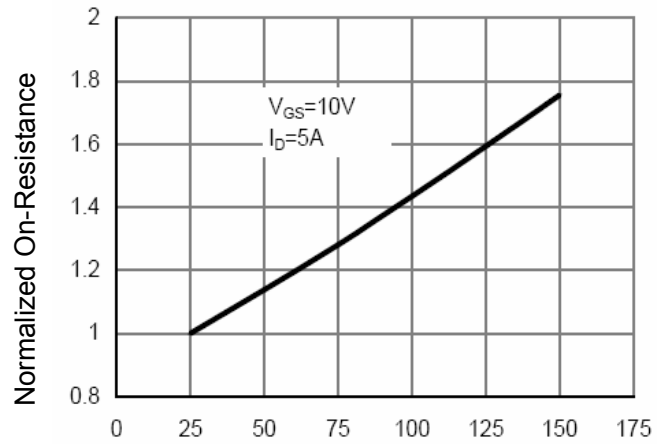
$V_{DS}$  Drain-Source Voltage (V)  
**Output Characteristics**



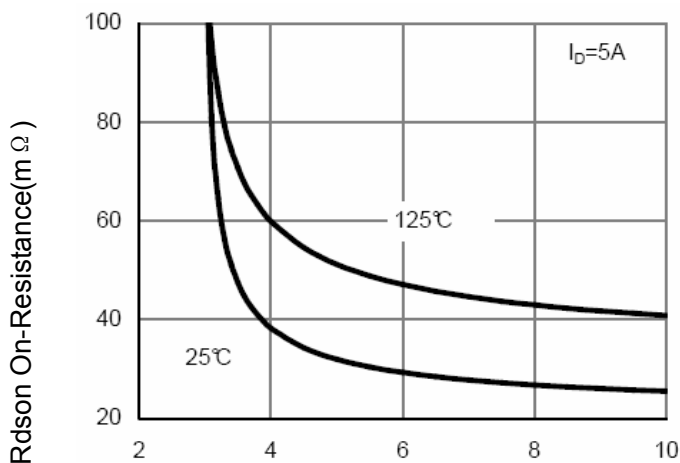
$V_{GS}$  Gate-Source Voltage (V)  
**Transfer Characteristics**



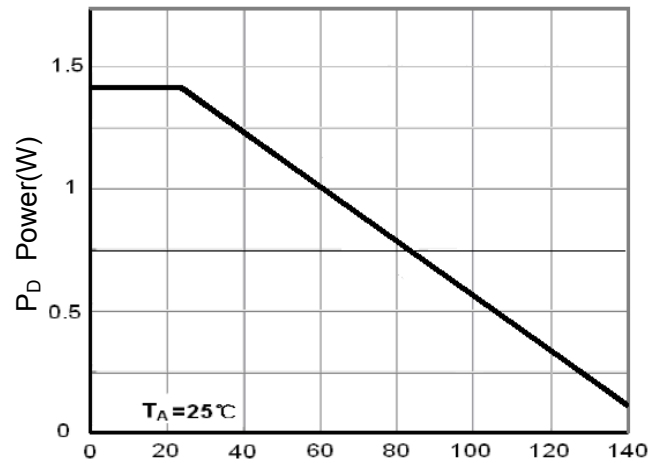
$I_D$  Drain Current (A)  
**Drain-Source On-Resistance**



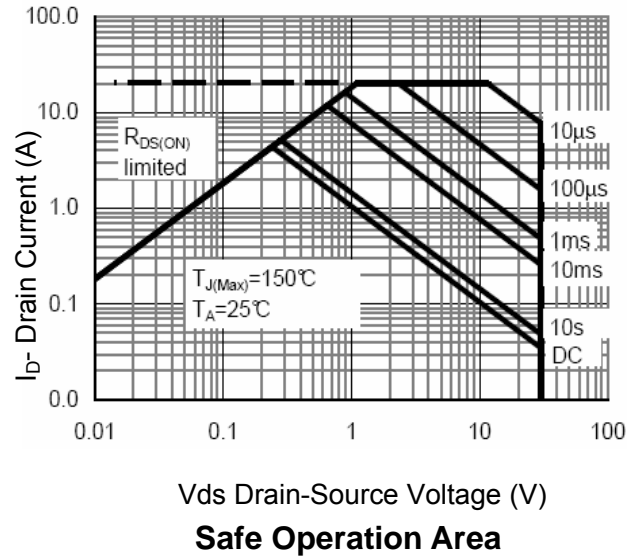
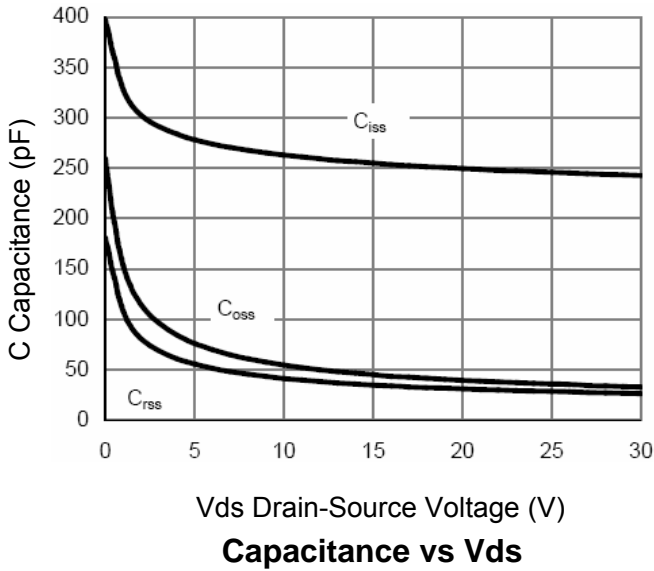
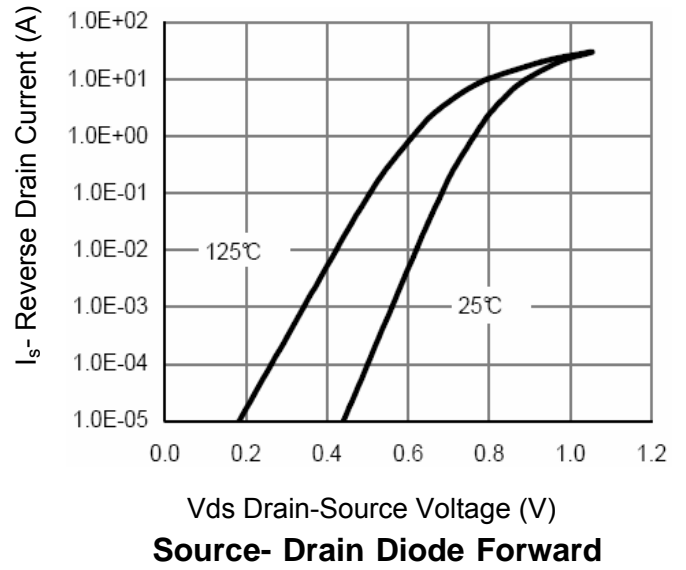
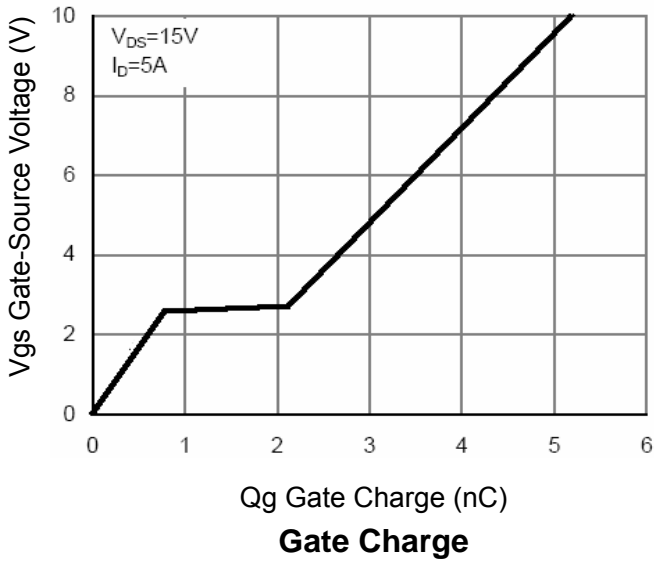
$T_J$ -Junction Temperature(°C)  
**Drain-Source On-Resistance**



$V_{GS}$  Gate-Source Voltage (V)  
**Rdson vs Vgs**



$T_J$ -Junction Temperature(°C)  
**Power Dissipation**





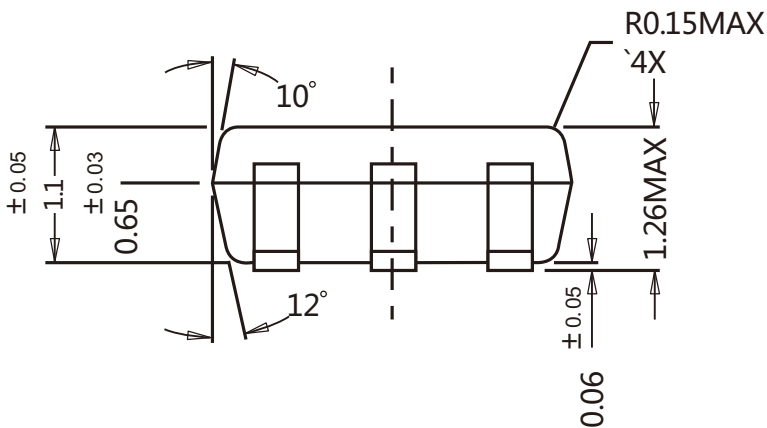
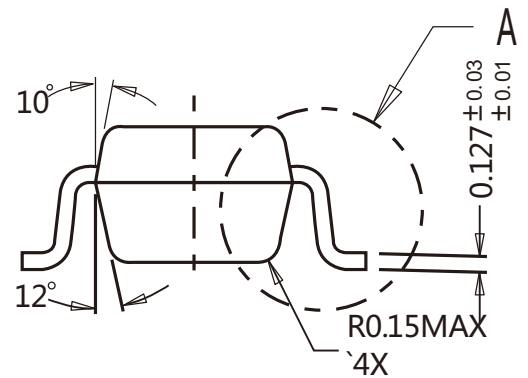
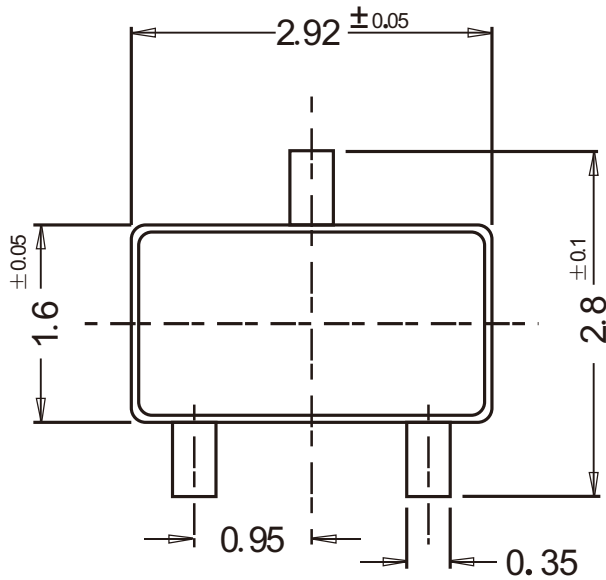
# PJM3404NSC

## N- Enhancement Mode Field Effect Transistor

### Package Outline

SOT-23-3

Dimensions in mm



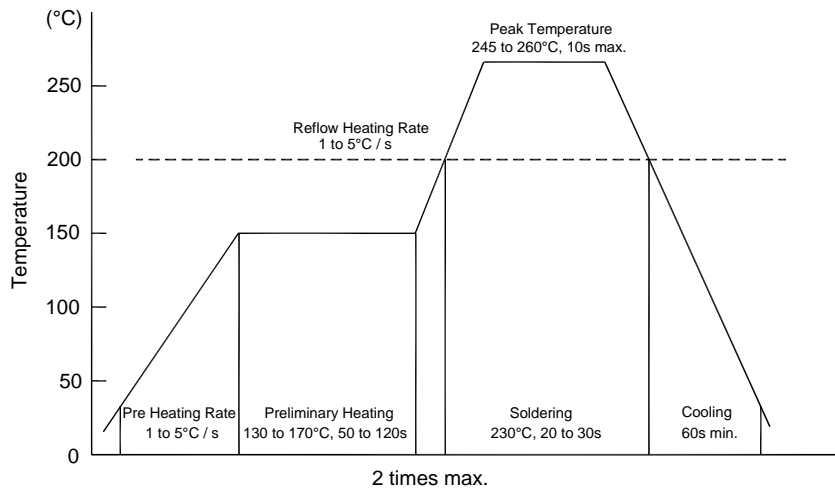
### Ordering Information

Device	Package	Shipping
PJM3404NSC	SOT-23-3	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:

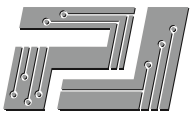
- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

#### ◆ Conditions of hand soldering

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

#### ◆ Storage conditions

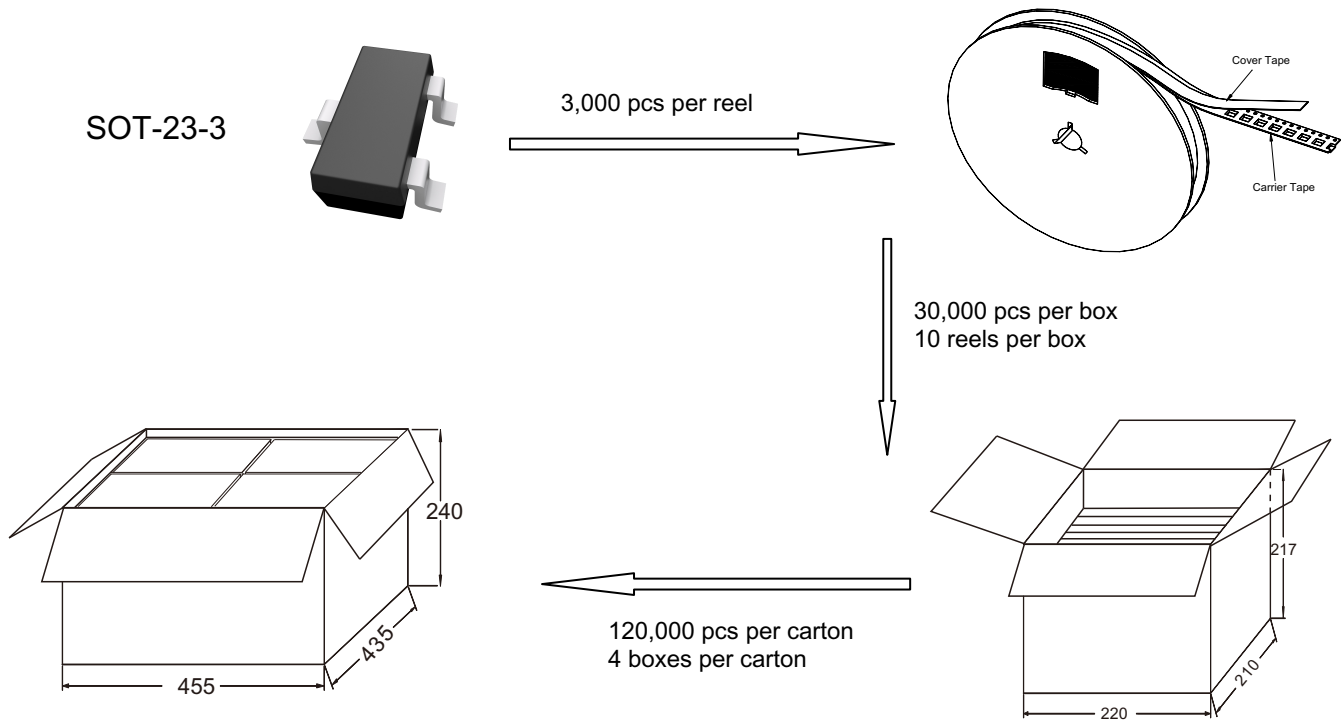
- **Temperature**  
5 to 40 °C
- **Humidity**  
30 to 80% RH
- **Recommended period**  
One year after manufacturing



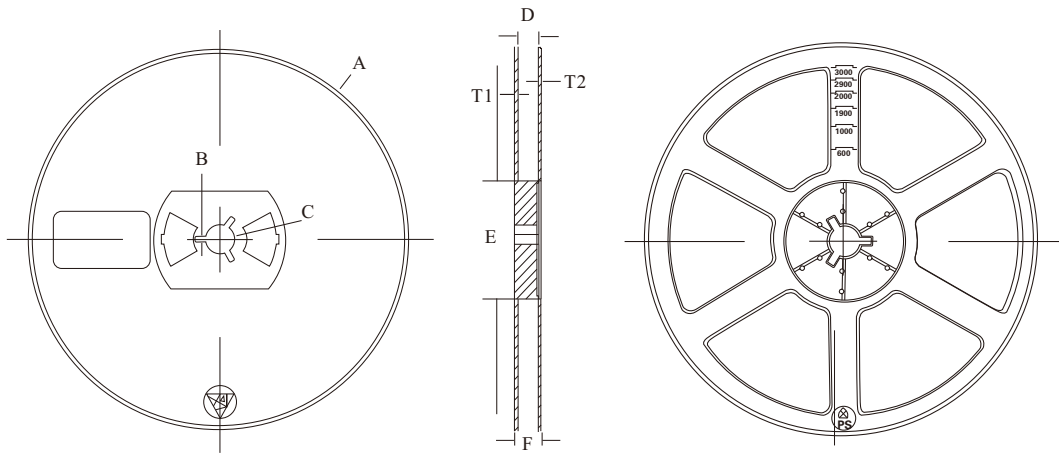
# PJM3404NSC

## N- Enhancement Mode Field Effect Transistor

### 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