



# PJM10H15NSQ

## N-Channel Enhancement Mode Power MOSFET

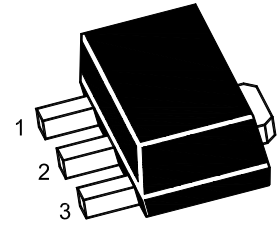
### Features

- Excellent  $R_{DS(on)}$  and Low Gate Charge
- $V_{DS} = 100V, I_D = 15A$   
 $R_{DS(on)} < 90m\Omega @ V_{GS} = 10V$

### Applications

- Power Switching Application
- Uninterruptible Power Supply

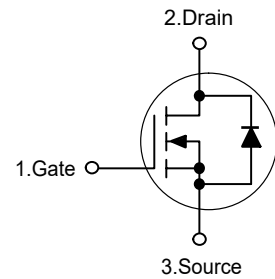
### SOT-89



1. Gate 2.Drain 3.Source

Marking Code: 10H15

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	15	A
Drain Current-Pulsed <sup>Note1</sup>	$I_{DM}$	60	A
Maximum Power Dissipation	$P_D$	1.5	W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

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

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
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	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage <sup>Note3</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.7	2.5	V
Drain-Source On-Resistance <sup>Note3</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	--	78	90	m $\Omega$
		$V_{GS}=4.5V, I_D=6A$	--	82	110	m $\Omega$
Forward Transconductance <sup>Note3</sup>	$g_{FS}$	$V_{DS}=5V, I_D=8A$	--	13	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$	--	830	--	pF
Output Capacitance	$C_{oss}$		--	44.2	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	30.1	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=50V, I_D=10A$ $V_{GS}=10V, R_G=3\Omega$	--	18	--	nS
Turn-on Rise Time	$t_r$		--	6.5	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	35	--	nS
Turn-off Fall Time	$t_f$		--	7	--	nS
Total Gate Charge	$Q_g$	$V_{DS}=50V, I_D=10A, V_{GS}=10V$	--	50	--	nC
Gate-Source Charge	$Q_{gs}$		--	8	--	nC
Gate-Drain Charge	$Q_{gd}$		--	16	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>Note3</sup>	$V_{SD}$	$V_{GS}=0V, I_S=15A$	--	--	1.5	V
Diode Forward Current <sup>Note2</sup>	$I_S$		--	--	15	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

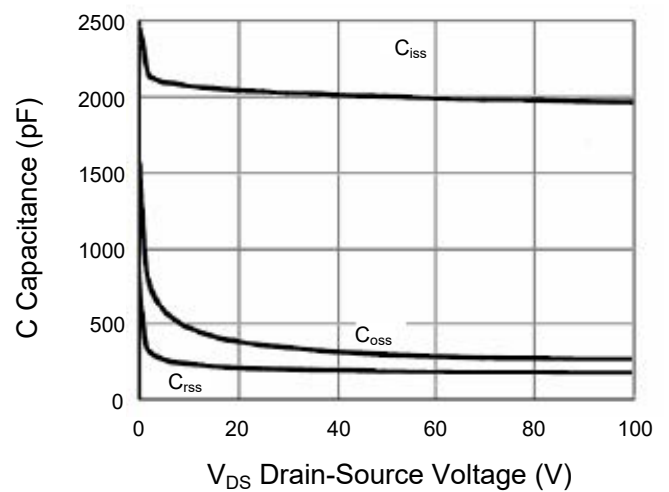
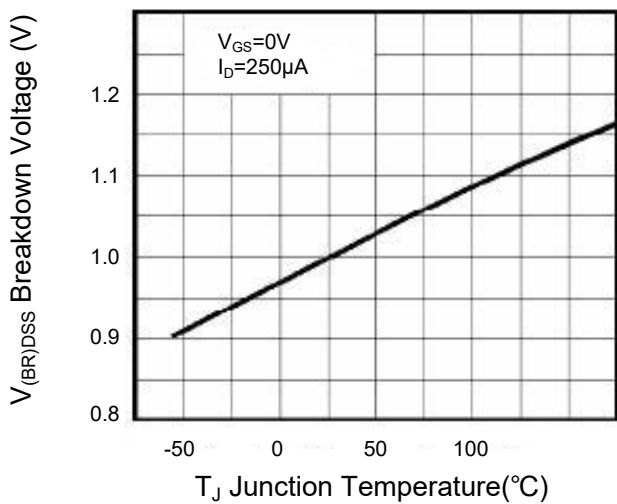
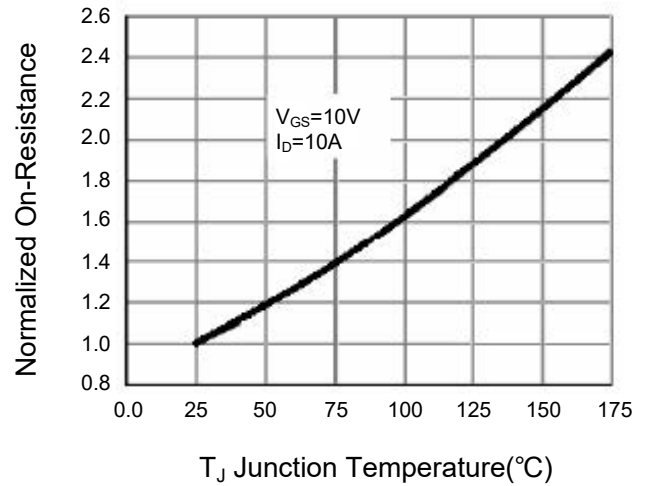
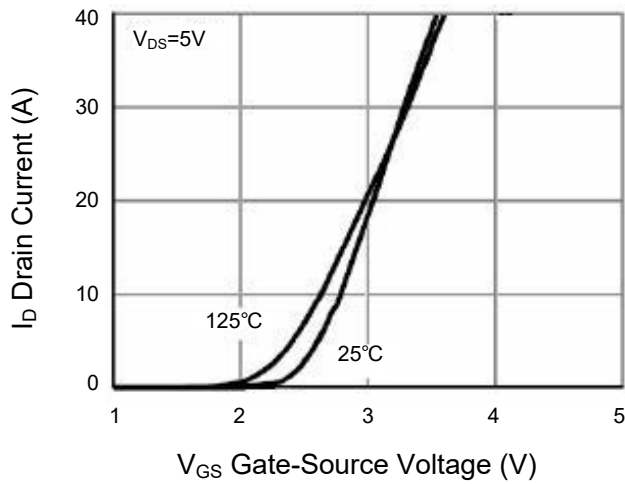
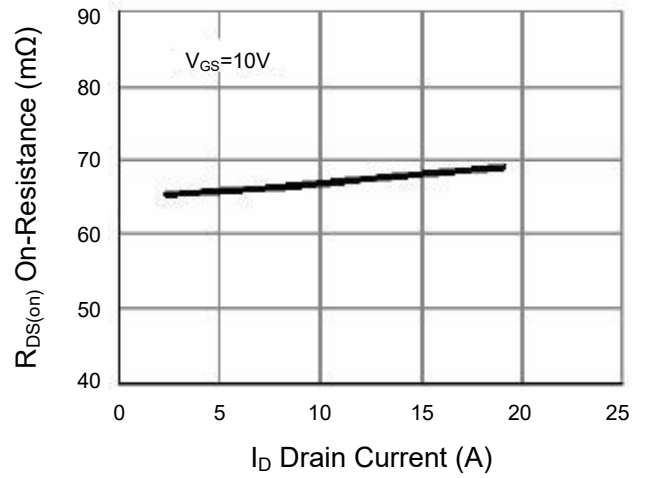
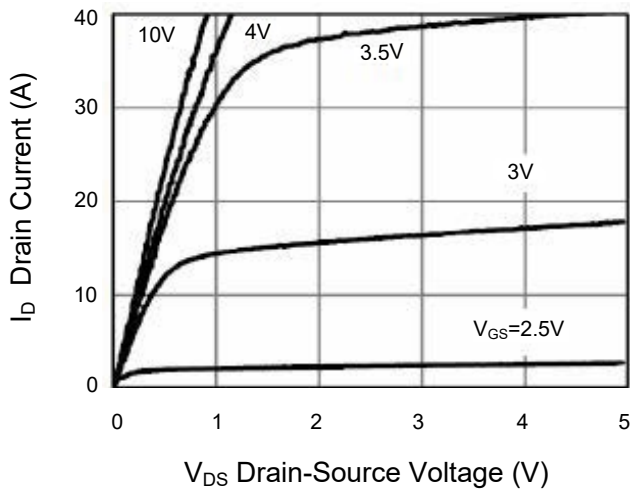
3. Pulse Test: Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .



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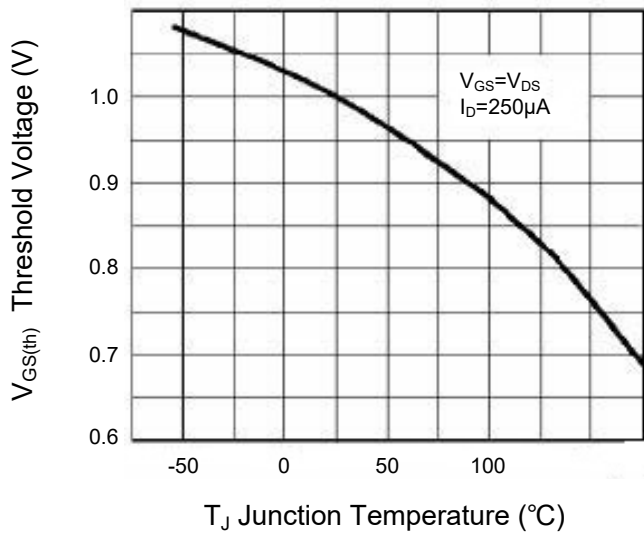
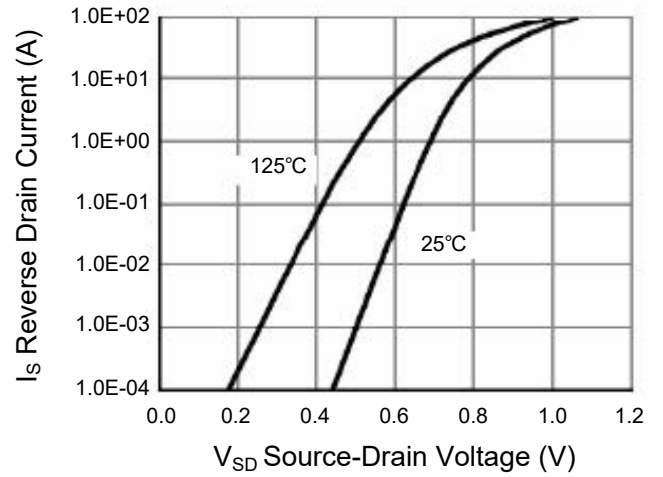
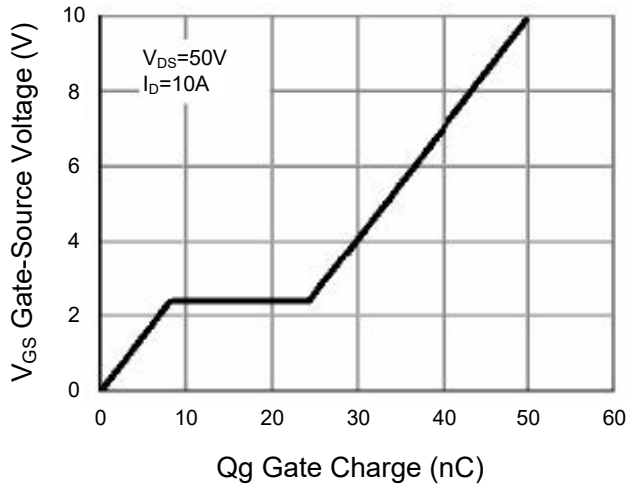
### Typical Characteristic Curves





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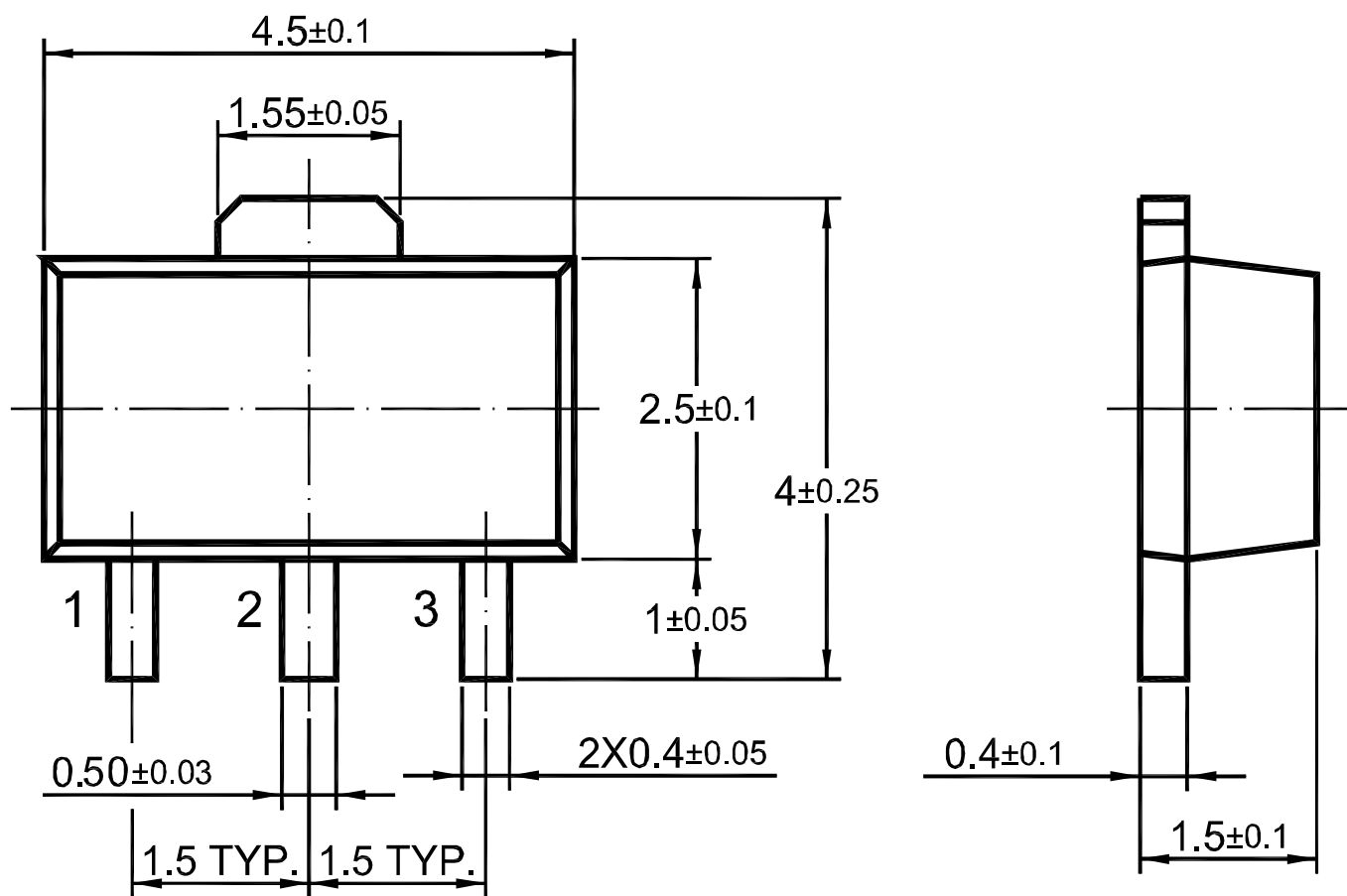
# PJM10H15NSQ

## N-Channel Enhancement Mode Power MOSFET

### Package Outline

SOT-89

Dimensions in mm



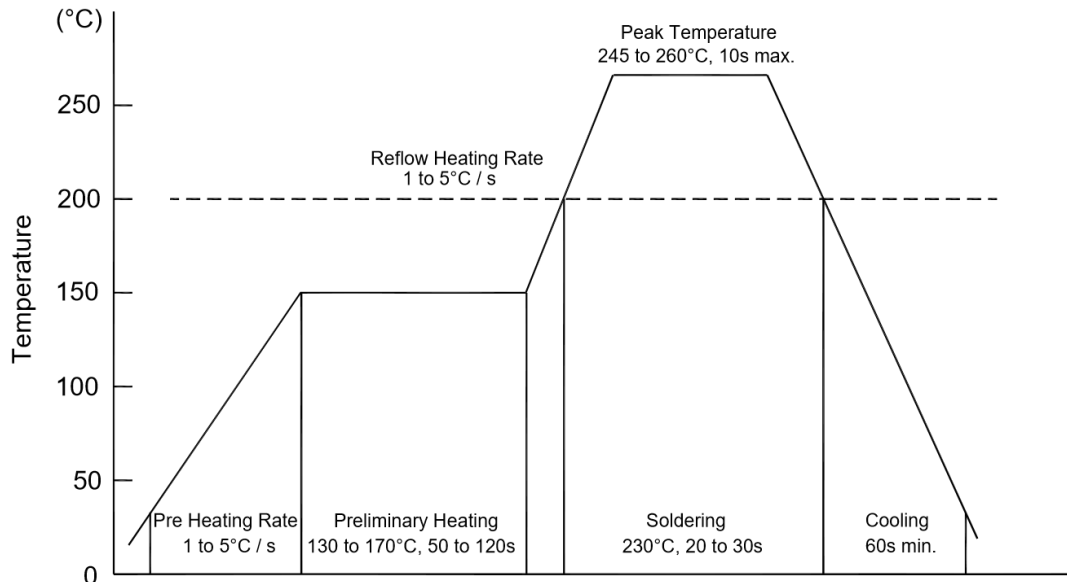
### Ordering Information

Device	Package	Shipping
PJM10H15NSQ	SOT-89	1,000PCS/Reel&7inches
		3,000PCS/Reel&13inches



### 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

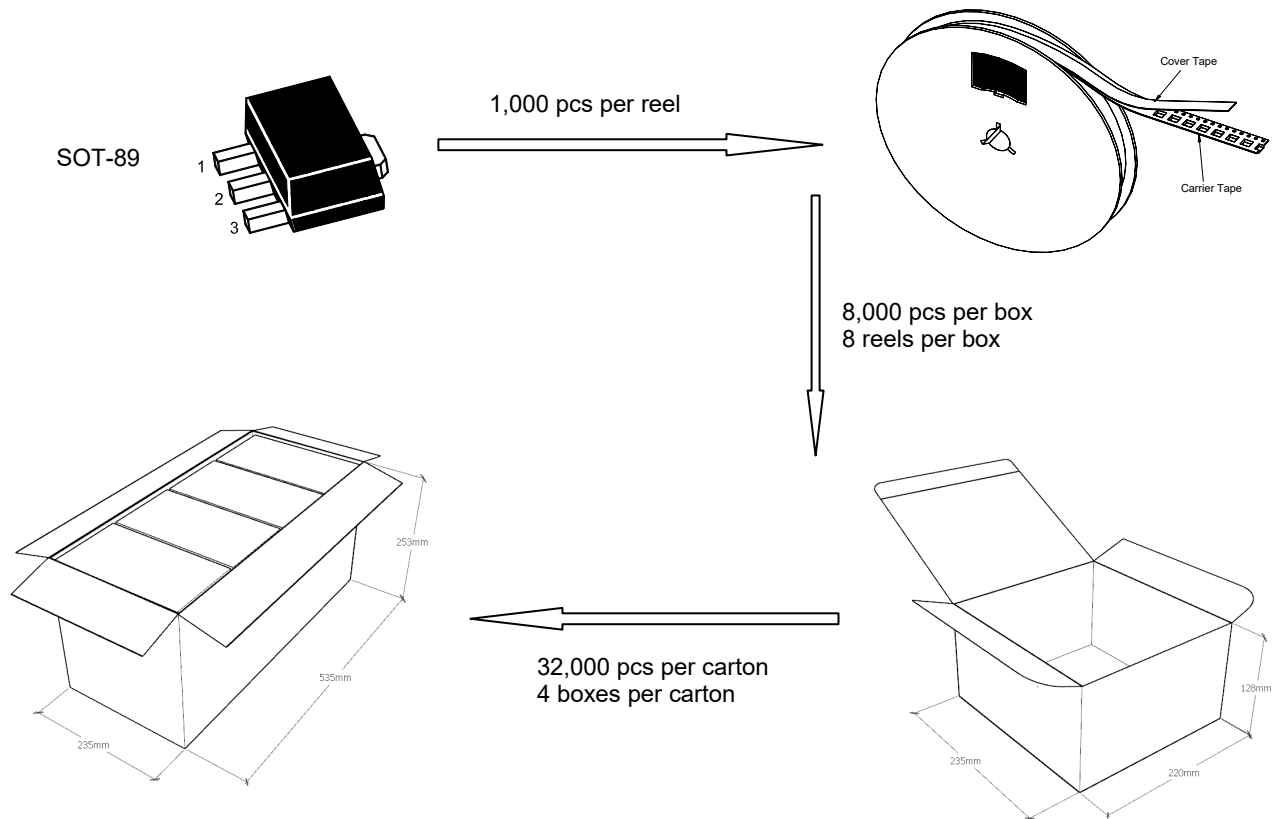


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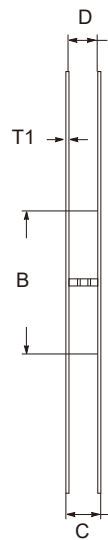
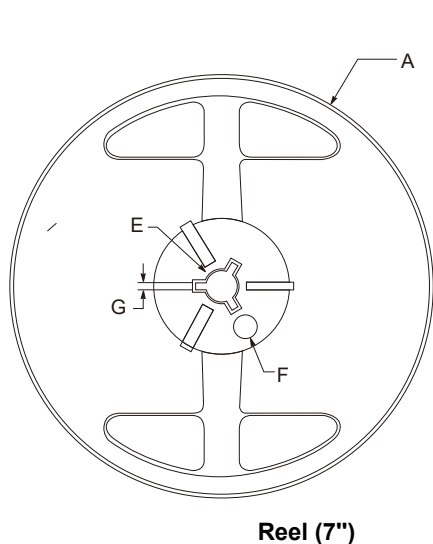
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### Package Specifications

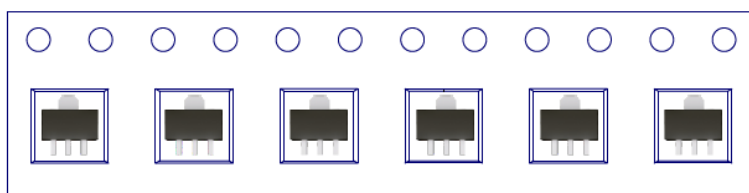
- The method of packaging (1,000PCS/Reel&7inches)



### ◆ Embossed tape and reel data



symbol	Value(unit:mm)
A	$\Phi 179 \pm 1$
B	$60.5 \pm 0.2$
C	$15.3 \pm 0.3$
D	12.5~13.7
E	$\Phi 13.5 \pm 0.2$
F	$\Phi 10.0 \pm 0.2$
G	$2.7 \pm 0.2$
T1	$1.0 \pm 0.2$



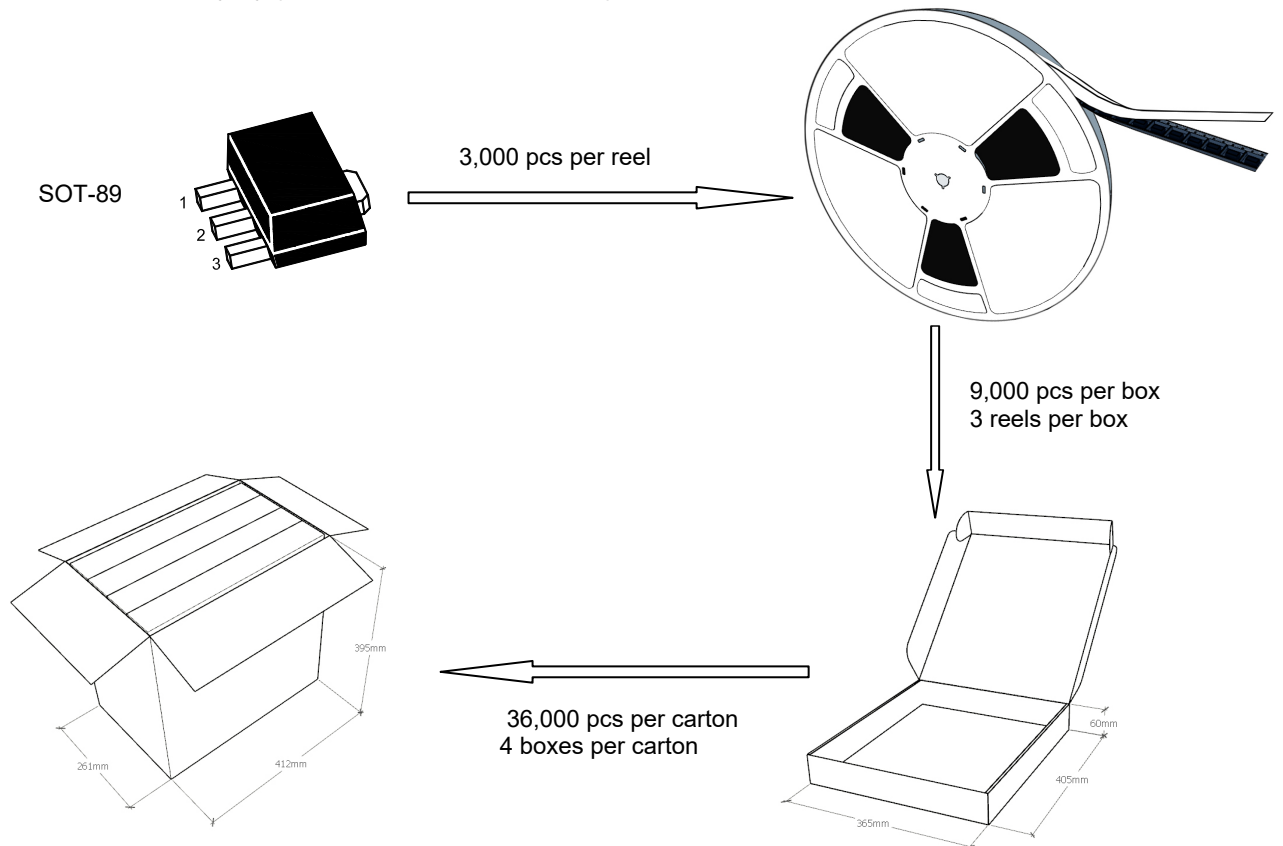


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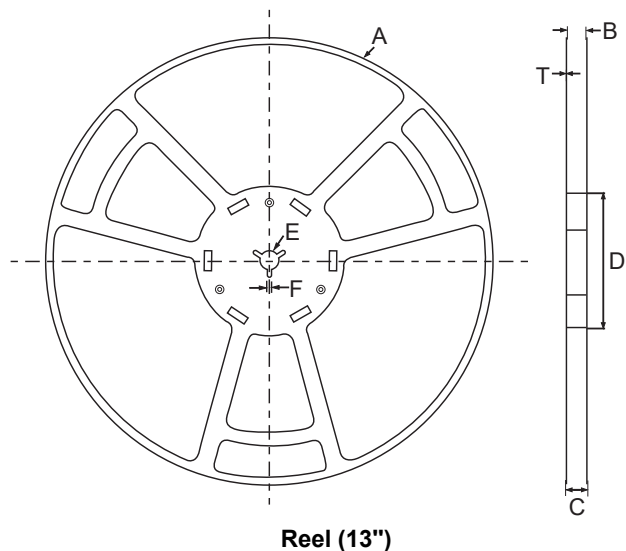
## N-Channel Enhancement Mode Power MOSFET

### Package Specifications

- The method of packaging (3,000PCS/Reel&13inches)



### ◆ Embossed tape and reel data



symbol	Value(unit:mm)
A	$\Phi 330 \pm 1$
B	$12.7 \pm 0.5$
C	$16.5 \pm 0.3$
D	$\Phi 99.5 \pm 0.5$
E	$\Phi 13.6 \pm 0.3$
F	$2.8 \pm 0.3$
T1	$1.9 \pm 0.2$

