



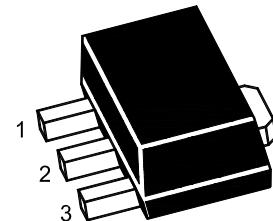
# PJM04P30SQ

## P-Channel Enhancement Mode Power MOSFET

### Features

- High density cell design for ultra low  $R_{DS(on)}$
- Excellent package for good heat dissipation
- $V_{DS} = -30V, I_D = -4.1A$
- $R_{DS(on)} < 65m\Omega @ V_{GS} = -10V$

SOT-89



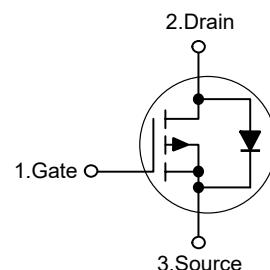
1. Gate 2. Drain 3. Source

**Marking Code: 04P30**

### Applications

- Power Switching Application

**Schematic Diagram**



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous	$-I_D$	4.1	A
Drain Current-Pulsed <sup>Note1</sup>	$-I_{DM}$	20	A
Maximum Power Dissipation	$P_D$	1.3	W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

Maximum Junction-to-Case <sup>Note2</sup>	$R_{eJC}$	96	°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 <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> =±12V, 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	0.7	0.9	1.3	V
Drain-Source On-Resistance <sup>Note3</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.1A	--	48	65	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A	--	56	85	mΩ
Forward Transconductance <sup>Note3</sup>	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-4.1A	--	10	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz	--	880	--	pF
Output Capacitance	C <sub>oss</sub>		--	105	--	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		--	65	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, I <sub>D</sub> =-4.1A, V <sub>GS</sub> =-10V, R <sub>G</sub> =6Ω	--	7	--	nS
Turn-on Rise Time	t <sub>r</sub>		--	3	--	nS
Turn-off Delay Time	t <sub>d(off)</sub>		--	30	--	nS
Turn-off Fall Time	t <sub>f</sub>		--	12	--	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> = -4.1A, V <sub>GS</sub> =-4.5V	--	8.5	--	nC
Gate-Source Charge	Q <sub>gs</sub>		--	1.8	--	nC
Gate-Drain Charge	Q <sub>gd</sub>		--	2.7	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>Note3</sup>	-V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-4.1A	--	--	1.2	V
Diode Forward Current <sup>Note2</sup>	-I <sub>S</sub>		--	--	4.1	A

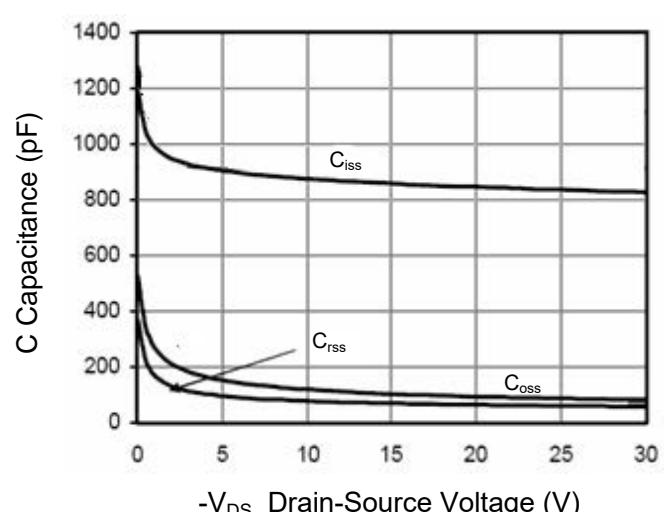
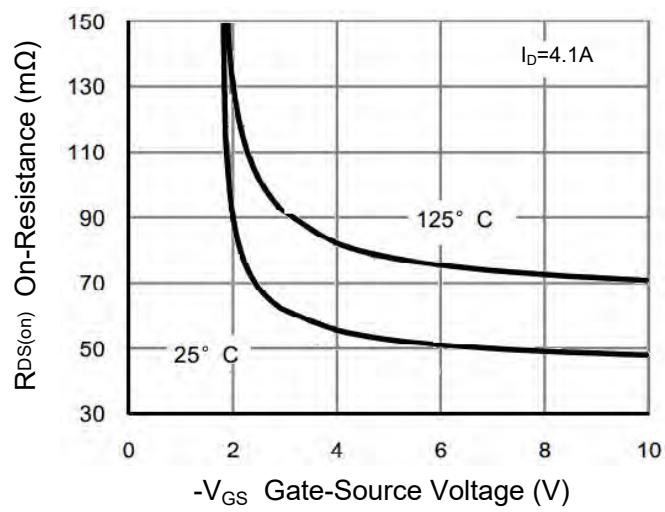
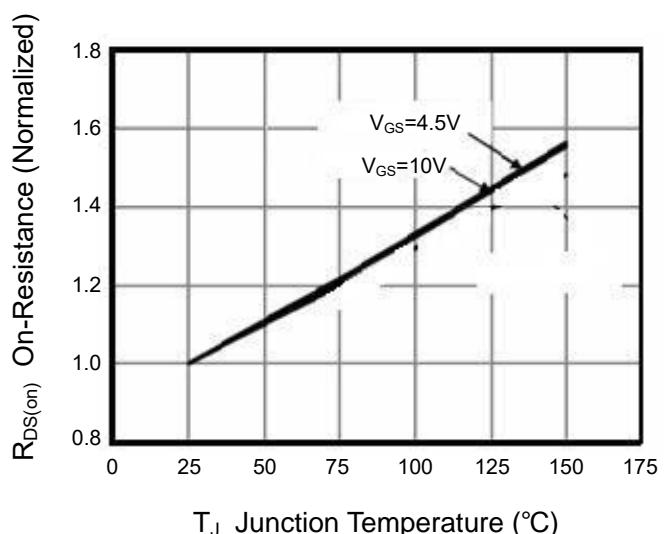
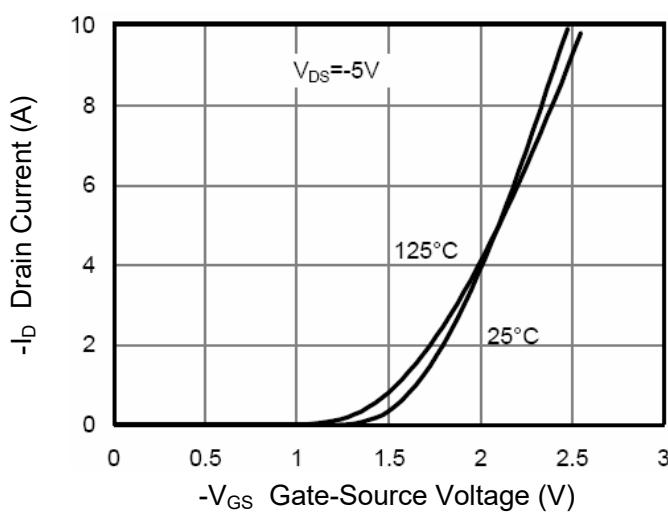
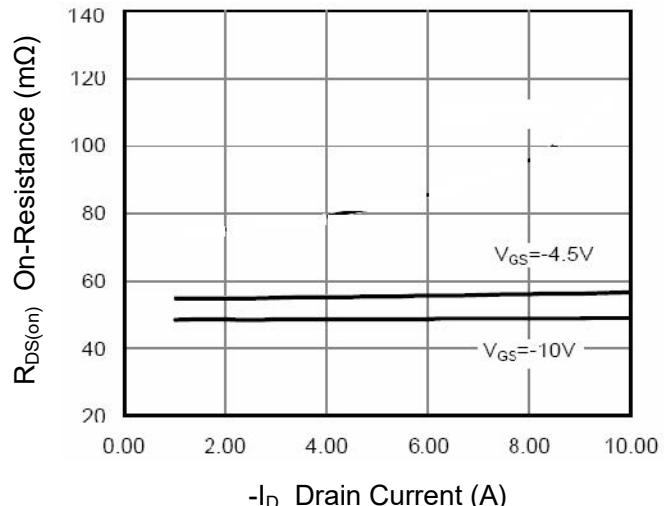
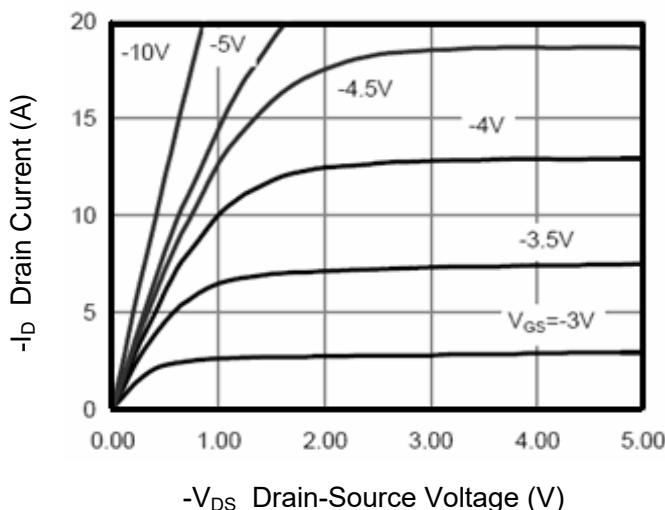
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

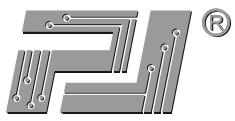
2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.



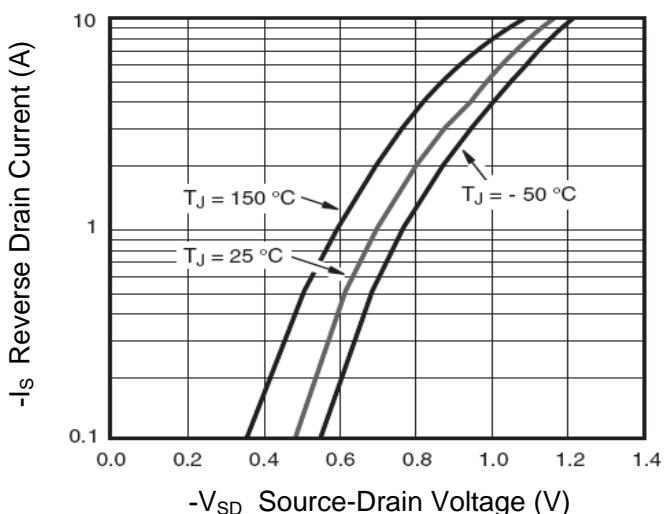
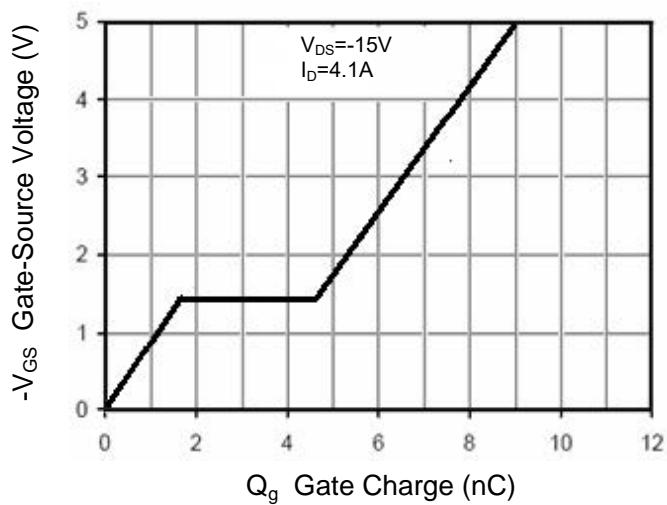
### Typical Characteristic Curves





# PJM04P30SQ

## P-Channel Enhancement Mode Power MOSFET

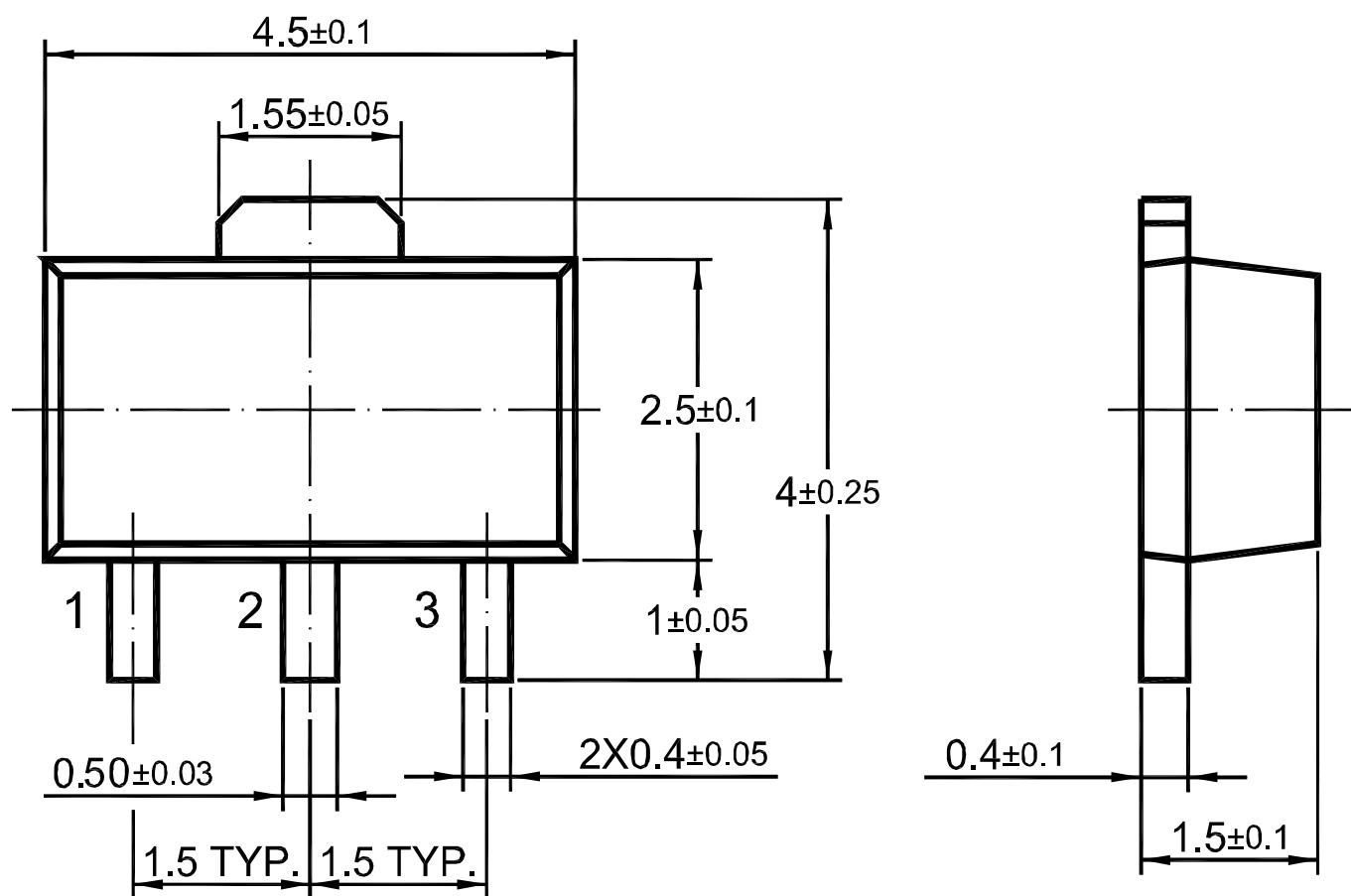




### Package Outline

SOT-89

Dimensions in mm



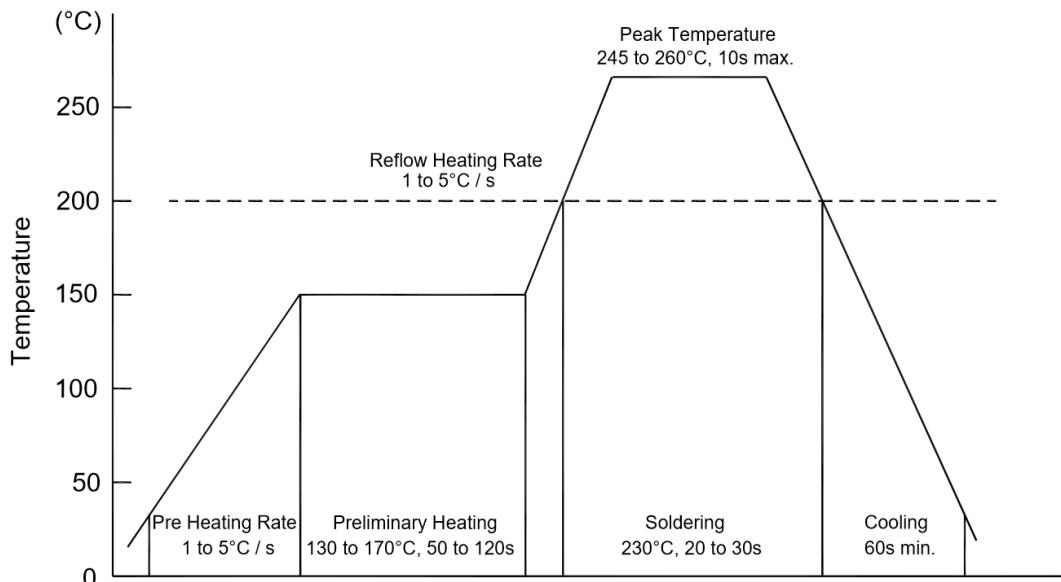
### Ordering Information

Device	Package	Shipping
PJM04P30SQ	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

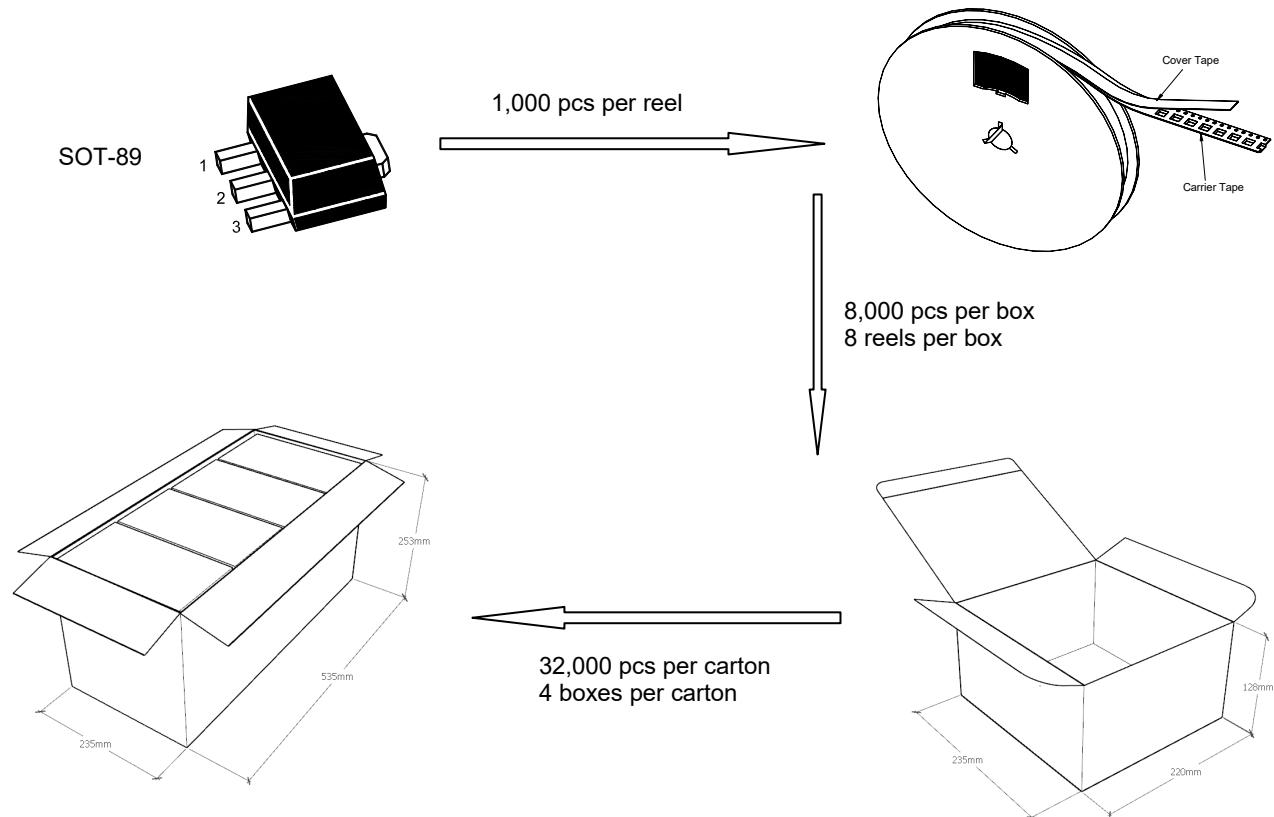
### ◆ Storage conditions

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

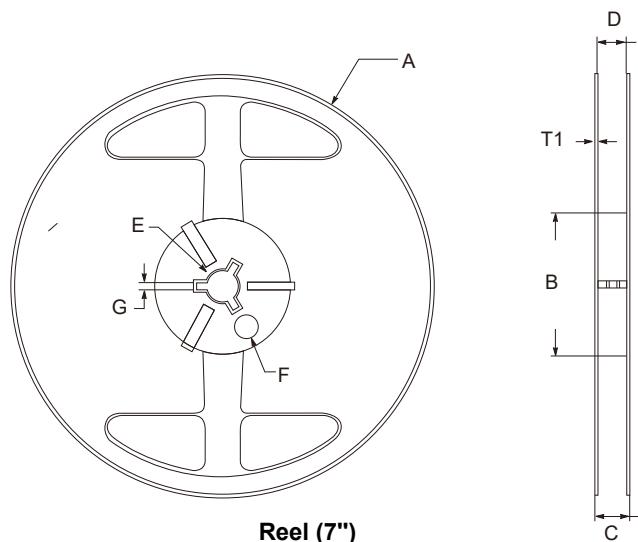


## Package Specifications

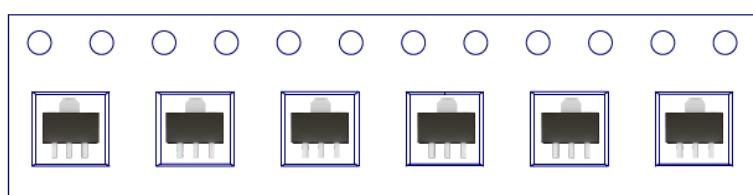
- The method of packaging (1,000PCS/Reel&7inches)

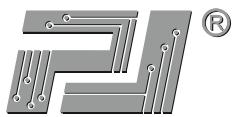


### ◆ Embossed tape and reel data



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 $\pm 0.2$



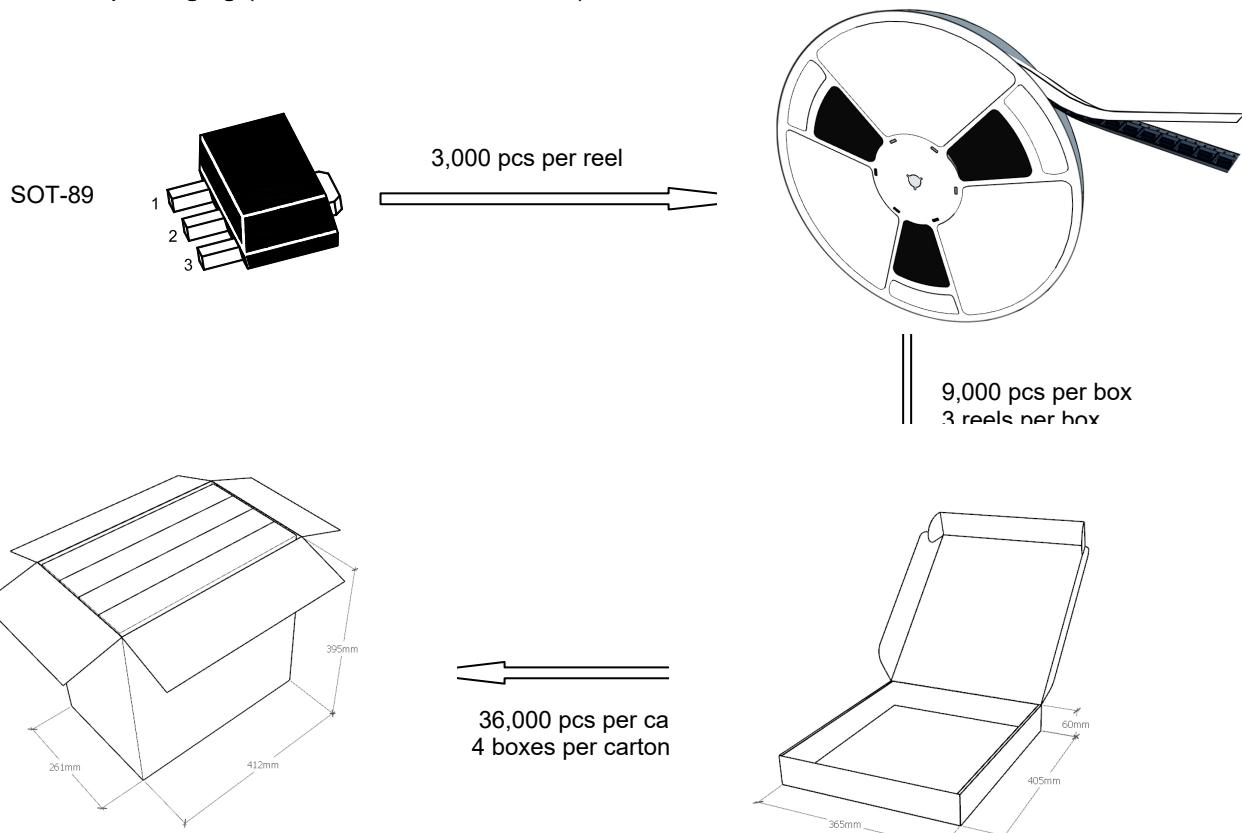


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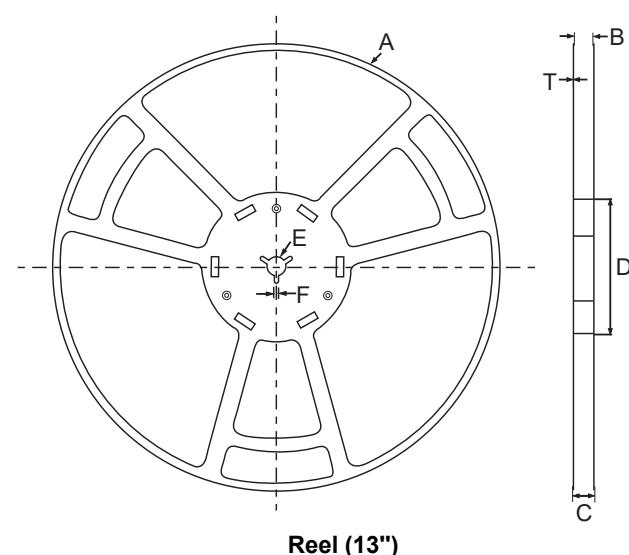
## P-Channel Enhancement Mode Power MOSFET

### 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	$1.9 \pm 0.2$

