



PJMG330N30TL

N-Channel Enhancement Mode Power MOSFET

Product Summary

- $V_{DS} = 30V, I_D = 330A$
- $R_{DS(on)} < 0.8m\Omega @ V_{GS} = 10V$

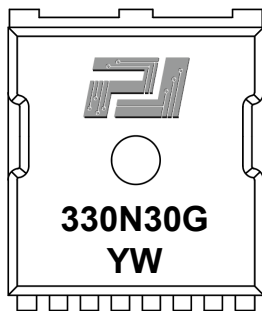
Features

- Advanced Split Gate Trench Technology
- RoHS Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1
- 100% Avalanche Tested
- 100% DVDS

Application

- BMS
- Electric Tools

Marking Code



(Top View)

Absolute Maximum Ratings

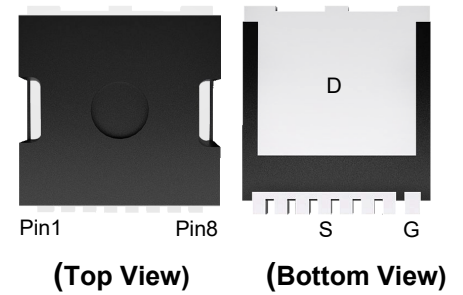
Ratings at 25°C case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	330	A
Drain Current-Pulsed ^{Note1}	I_{DM}	1280	A
Single Pulse Avalanche Energy ^{Note2}	E_{AS}	1056	mJ
Maximum Power Dissipation	P_D	320	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

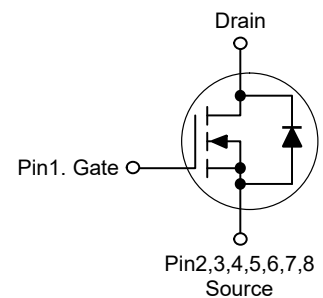
Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.47	°C/W
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Schematic Diagram





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Electrical Characteristics

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.8	3	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	--	0.52	0.8	m Ω
		$V_{GS}=4.5V, I_D=20A$	--	0.8	1.2	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=2A$	--	16.5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	--	12860	--	pF
Output Capacitance	C_{oss}		--	2825	--	pF
Reverse Transfer Capacitance	C_{rss}		--	295	--	pF
Gate Resistance	R_G	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	--	1.05	--	Ω
Total Gate Charge	Q_g	$V_{DD}=24V, I_D=20A,$ $V_{GS}=10V$	--	175	--	nC
Gate-Source Charge	Q_{gs}		--	27	--	nC
Gate-Drain Charge	Q_{gd}		--	53	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=20V, I_D=20A,$ $V_{GS}=10V, R_{GEN}=4\Omega$	--	21	--	nS
Turn-on Rise Time	t_r		--	38	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	114	--	nS
Turn-off Fall Time	t_f		--	99	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=90A$	--	--	1.2	V
Diode Forward Current	I_S		--	--	330	A

Note:

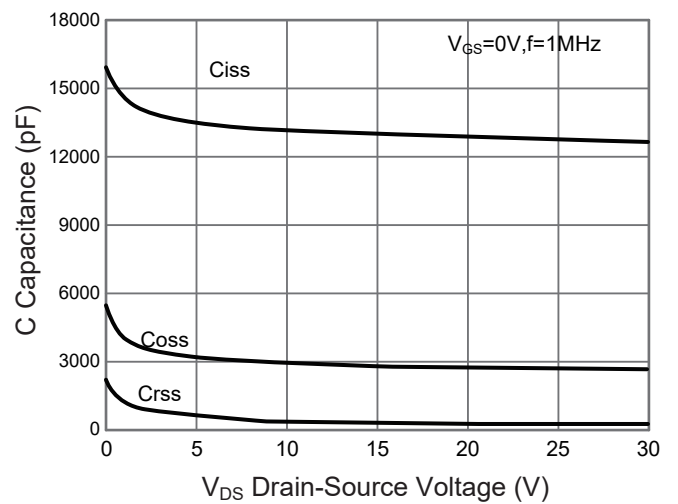
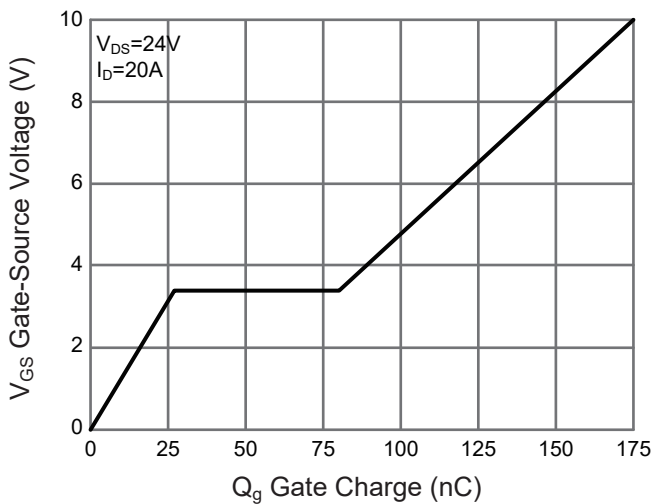
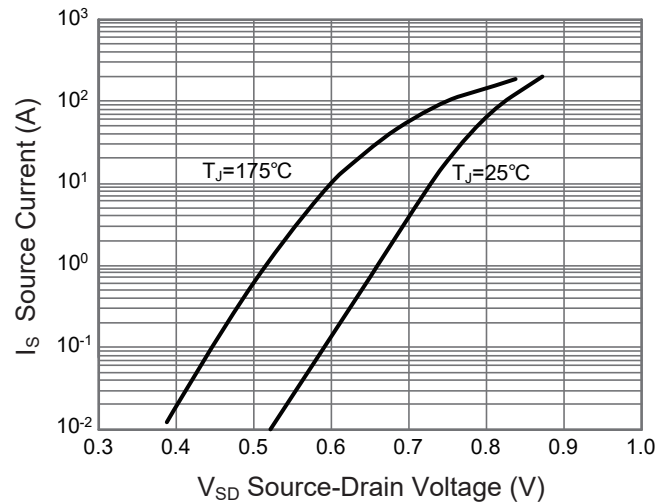
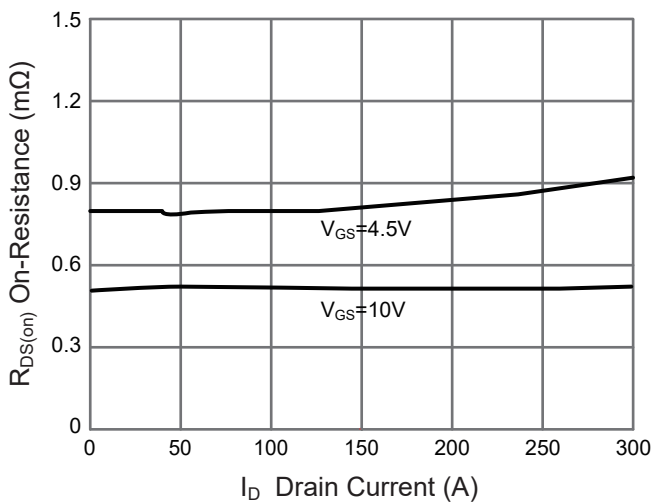
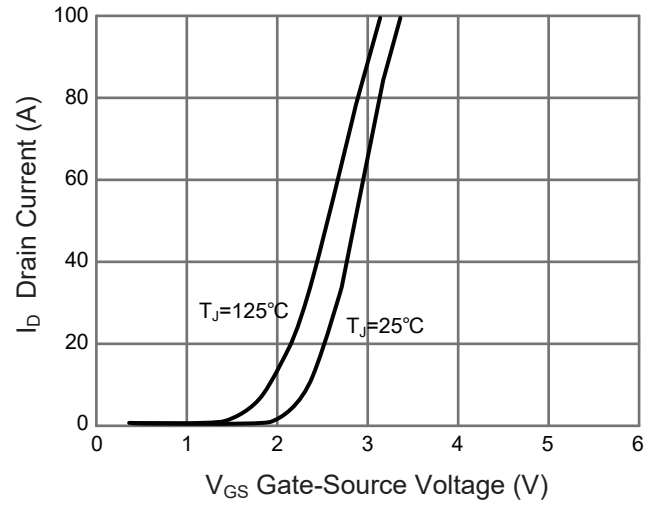
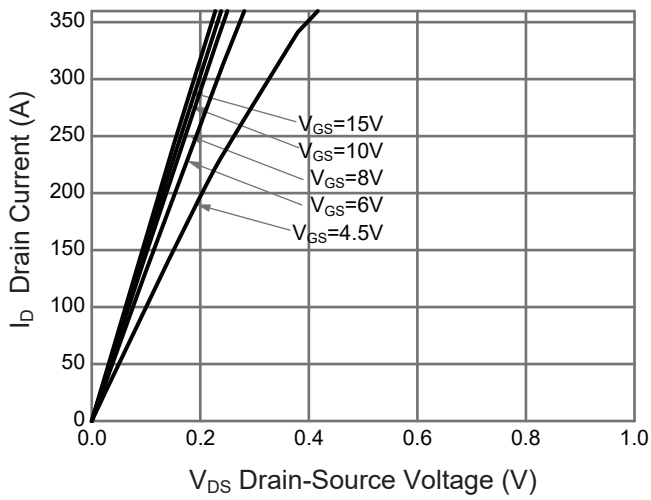
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. EAS condition: $T_J=25^{\circ}\text{C}$, $V_{DD}=45V$, $V_G=10V$, $R_G=25\Omega$, $L=0.5\text{mH}$, $I_{AS}=65A$
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$



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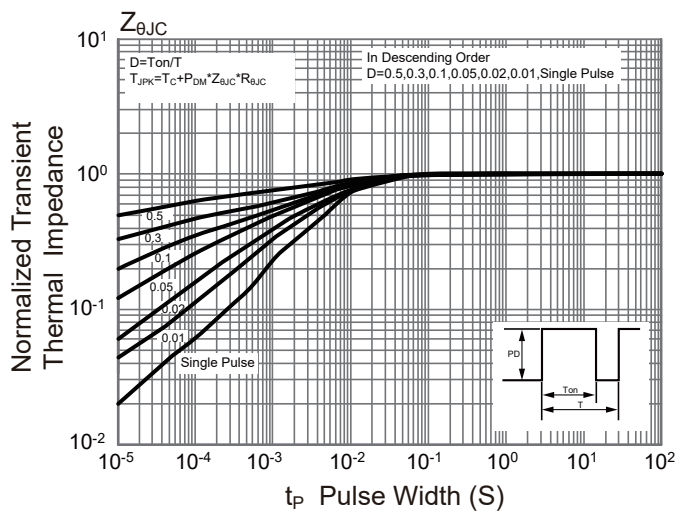
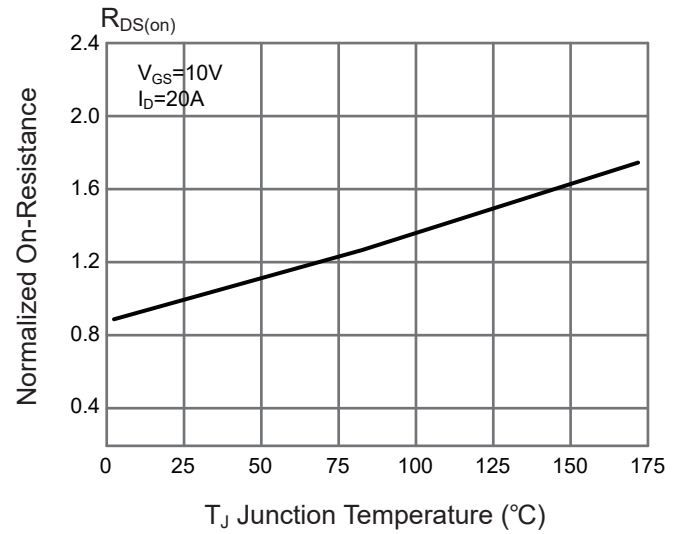
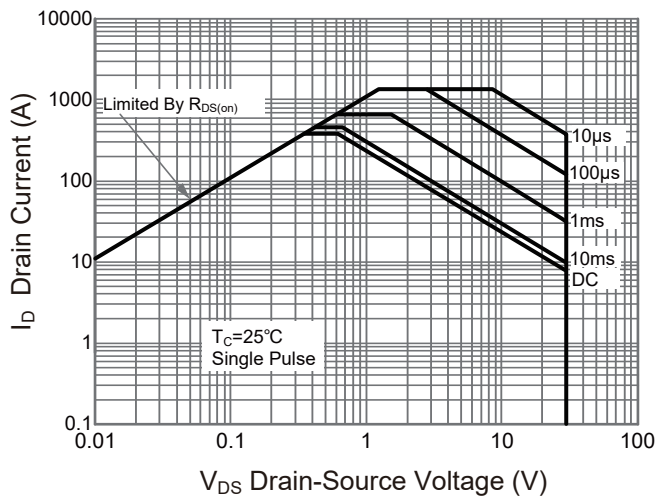
Typical Characteristic Curves





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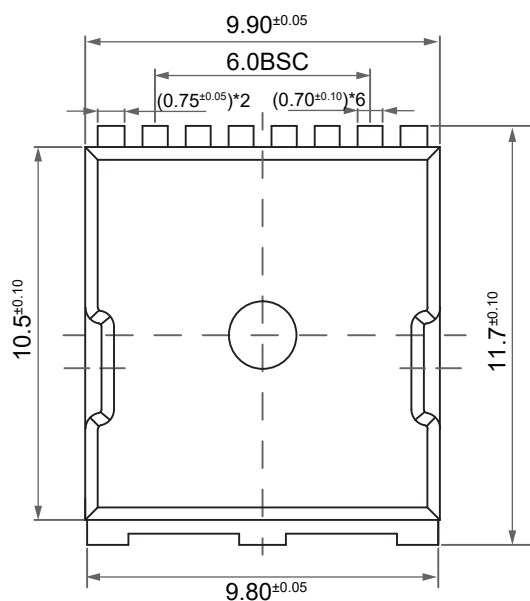
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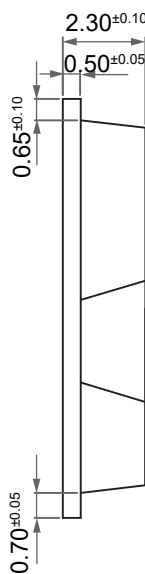
Package Outline

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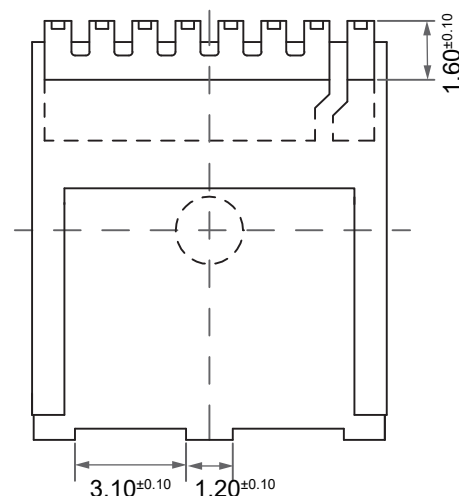
Dimensions in mm



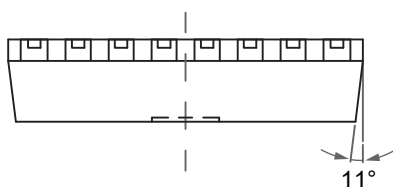
TOP VIEW



SIDE VIEW



BOTTOM VIEW



FRONT VIEW

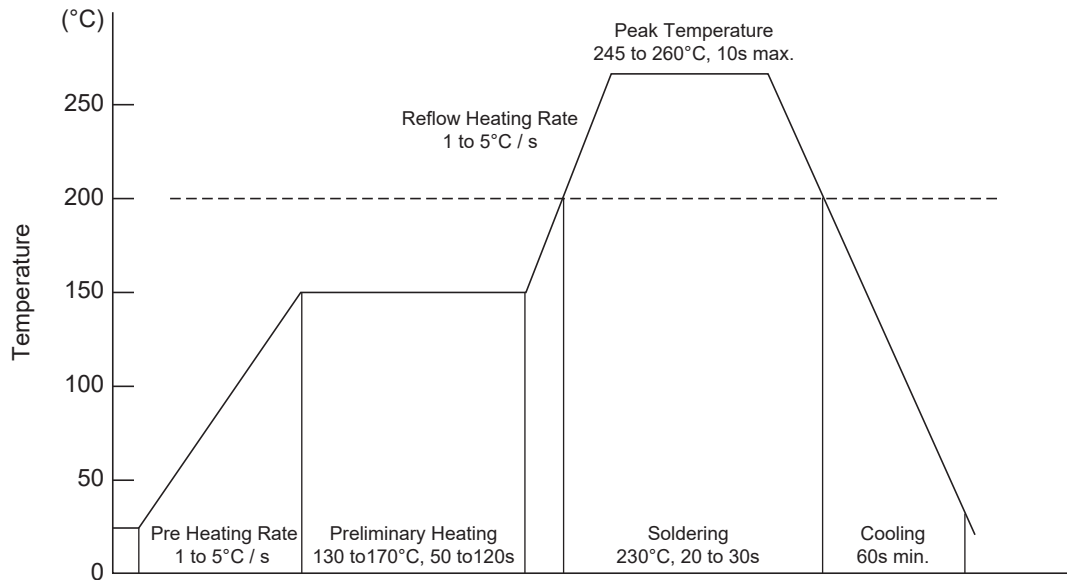
Ordering Information

Device	Package	Shipping
PJMG330N30TL	TOLL	2,000PCS/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: 300°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

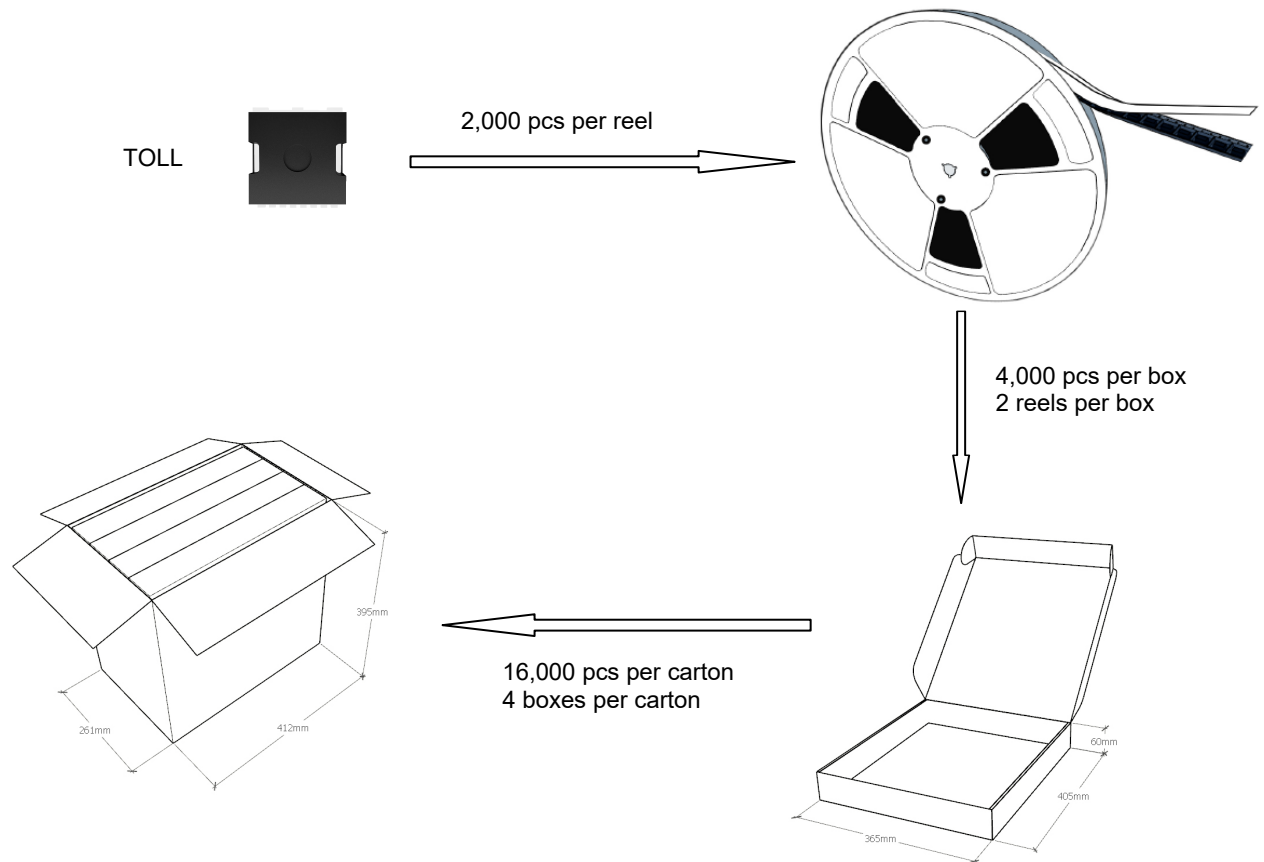


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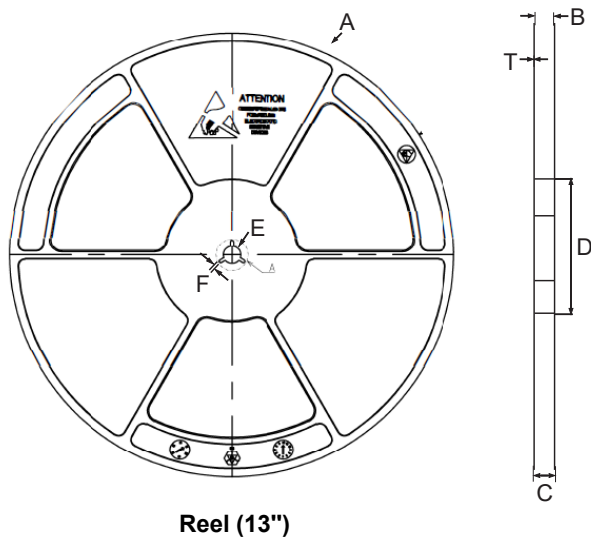
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Package Specifications

- The method of packaging



◆ reel data



Symbol	Value(unit:mm)
A	$\Phi 330.2 \pm 1$
B	25 ± 0.5
C	29.2 ± 2
D	$\Phi 100 \pm 0.5$
E	$\Phi 13.4 \pm 0.2$
F	2.3 ± 0.2
T	2.1 ± 0.2



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◆ Embossed tape data

