

GENERAL DESCRIPTION

The 74CBTLV3125 is a low voltage FET bus switch. Each line switch is independent and has an enable input (active low).

The 74CBTLV3125 has an I_{OFF} feature that prevents damaging current from back flowing when the device is powered off, thus achieving device power-off isolation. These features make the 74CBTLV3125 suitable for partial-power-down applications using I_{OFF} .

The 74CBTLV3125 is available in Green TSSOP-14, SOIC-14, SSOP-16 and TQFN-3.5×3.5-14AL packages. It operates over an operating temperature range of -40°C to +125°C.

FEATURES

- **Supply Voltage Range:** 2.3V to 3.6V
- **Low On-Resistance:** 2.1Ω (TYP)
- **Rail-to-Rail Input and Output Operation**
- **I_{OFF} Supports Partial-Power-Down Mode Operation**
- **-40°C to +125°C Operating Temperature Range**
- **Available in Green TSSOP-14, SOIC-14, SSOP-16 and TQFN-3.5×3.5-14AL Packages**

APPLICATIONS

Computing: Server, PC and Notebook
Medical Equipment
Telecom Equipment
Industrial Equipment

PACKAGE/ORDERING INFORMATION

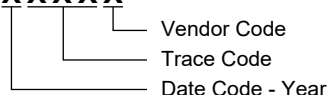
MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74CBTLV3125	TSSOP-14	-40°C to +125°C	74CBTLV3125XTS14G/TR	0N0 XTS14 XXXXX	Tape and Reel, 4000
	SOIC-14	-40°C to +125°C	74CBTLV3125XS14G/TR	0PNXS14 XXXXX	Tape and Reel, 2500
	SSOP-16	-40°C to +125°C	74CBTLV3125XQS16G/TR	0PP XQS16 XXXXX	Tape and Reel, 4000
	TQFN-3.5×3.5-14AL	-40°C to +125°C	74CBTLV3125XTSZ14G/TR	0RH XTSZ14 XXXXX	Tape and Reel, 4000

MARKING INFORMATION

NOTE: XXXXX = Date Code, Trace Code and Vendor Code.

TSSOP-14/SOIC-14/SSOP-16/TQFN-3.5×3.5-14AL

XXXXX



Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage Range, V_{CC}	-0.5V to 4.6V
Control Input Voltage, V_{IN}	-0.5V to 4.6V
Switch I/O Voltage, $V_{I/O}$	-0.5V to ($V_{CC} + 0.5V$)
Continuous Channel Current	128mA
Control Input Clamp Current, $V_{IN} < 0V$, I_{IK}	-50mA
Junction Temperature	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s)	+260°C
ESD Susceptibility	
HBM	6000V
CDM	1000V

RECOMMENDED OPERATING CONDITIONS

Supply Voltage Range, V_{CC}	2.3V to 3.6V
Control Input Voltage, V_{IN}	0V to 3.6V
Switch I/O Voltage, $V_{I/O}$	0V to V_{CC}
Operating Temperature Range	-40°C to +125°C

OVERSTRESS CAUTION

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability. Functional operation of the device at any conditions beyond those indicated in the Recommended Operating Conditions section is not implied.

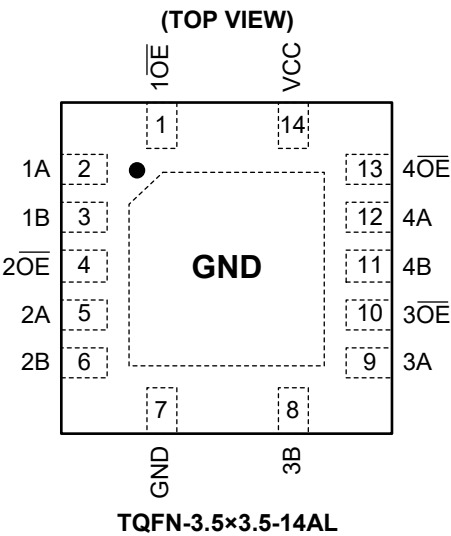
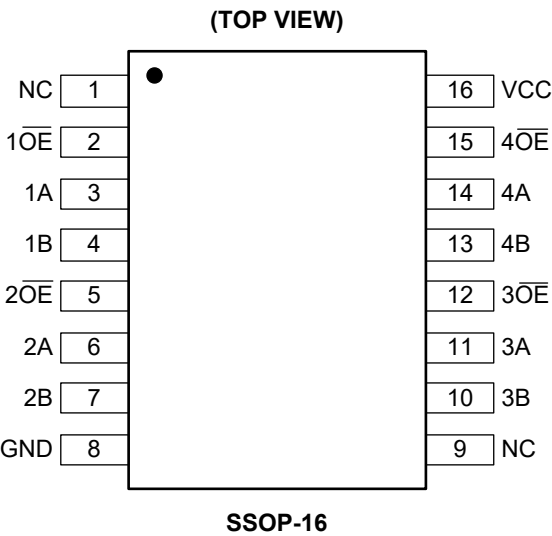
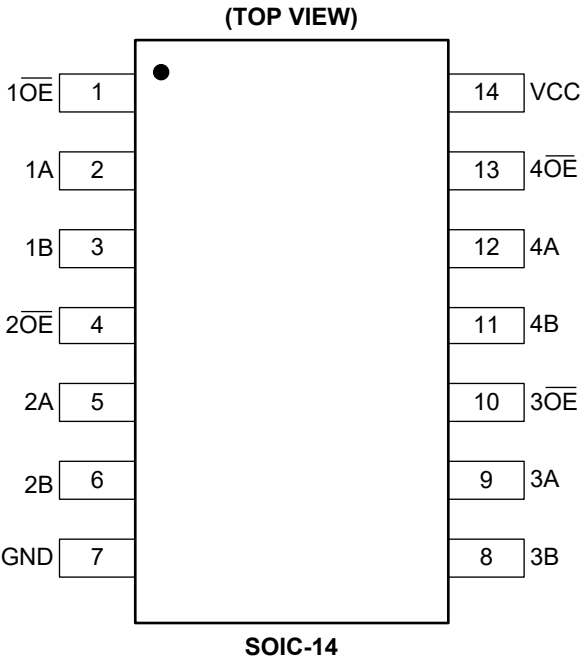
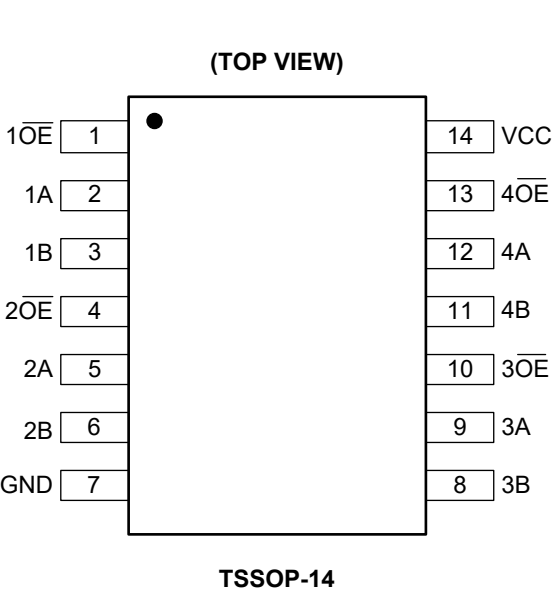
ESD SENSITIVITY CAUTION

This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because even small parametric changes could cause the device not to meet the published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

PIN CONFIGURATIONS



PIN DESCRIPTION

PIN			NAME	I/O	FUNCTION
TSSOP-14/SOIC-14	TQFN-3.5×3.5-14AL	SSOP-16			
1	1	2	1 $\overline{OE}$	I	Output Enable (Active Low) of Switch 1.
2	2	3	1A	I/O	A Node of Switch 1.
3	3	4	1B	I/O	B Node of Switch 1.
4	4	5	2 $\overline{OE}$	I	Output Enable (Active Low) of Switch 2.
5	5	6	2A	I/O	A Node of Switch 2.
6	6	7	2B	I/O	B Node of Switch 2.
7	7	8	GND	—	Ground.
8	8	10	3B	I/O	B Node of Switch 3.
9	9	11	3A	I/O	A Node of Switch 3.
10	10	12	3 $\overline{OE}$	I	Output Enable (Active Low) of Switch 3.
11	11	13	4B	I/O	B Node of Switch 4.
12	12	14	4A	I/O	A Node of Switch 4.
13	13	15	4 $\overline{OE}$	I	Output Enable (Active Low) of Switch 4.
14	14	16	VCC	—	Power Supply.
—	—	1, 9	NC	—	No Connection.
—	Exposed Pad	—	GND	—	Exposed Pad. It can be connected to GND or be left floating.

FUNCTIONAL BLOCK DIAGRAM

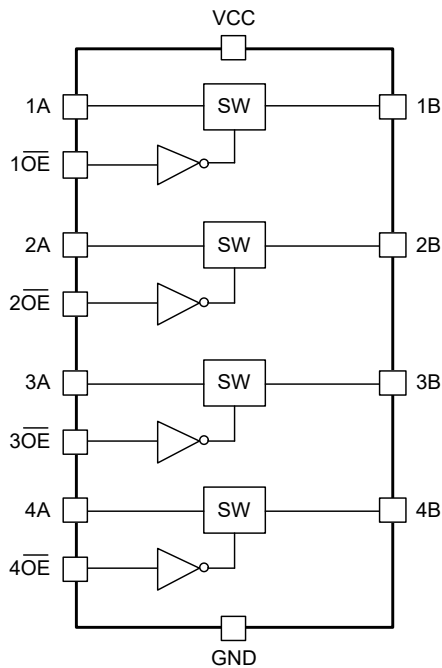


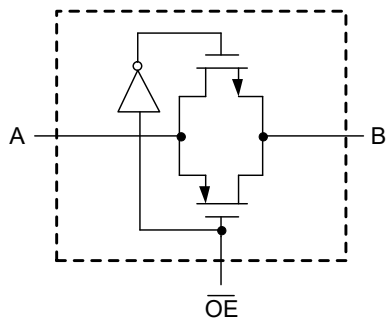
Figure 1. Block Diagram

FUNCTION TABLE

INPUT $\overline{OE}$	FUNCTION
L	A port = B port
H	Disconnect

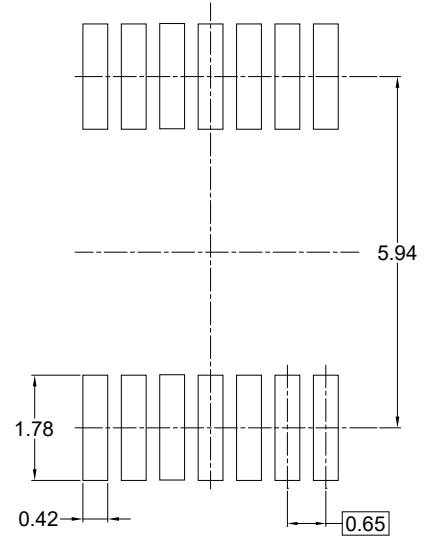
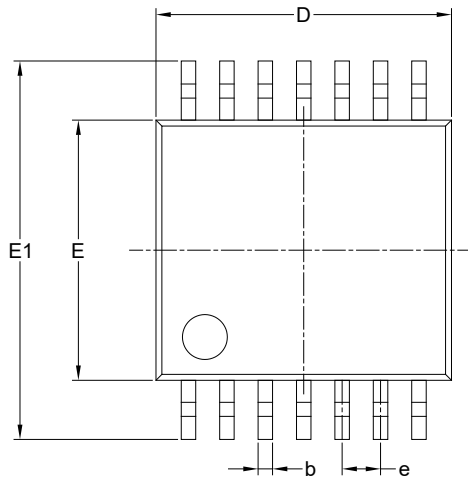
NOTE: L = low voltage level, H = high voltage level.

SIMPLIFIED SCHEMATIC OF EACH SWITCH (SW)

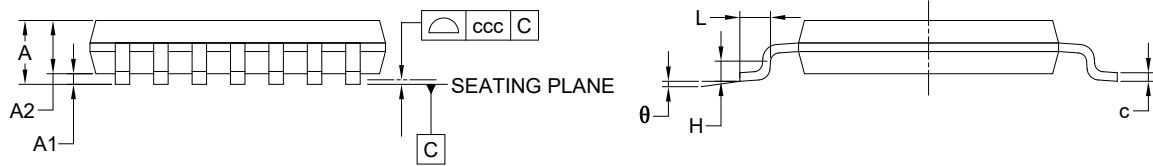


PACKAGE OUTLINE DIMENSIONS

TSSOP-14



RECOMMENDED LAND PATTERN (Unit: mm)



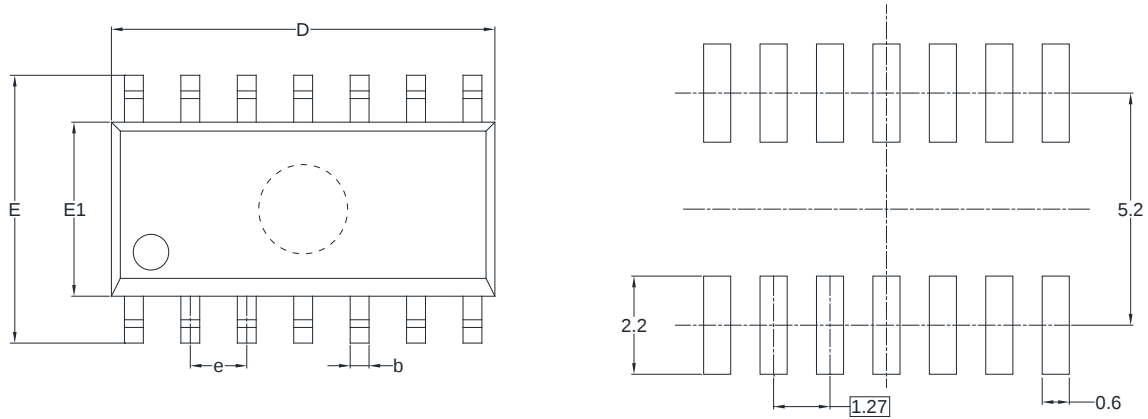
Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	-	-	1.200
A1	0.050	-	0.150
A2	0.800	-	1.050
b	0.190	-	0.300
c	0.090	-	0.200
D	4.860	-	5.100
E	4.300	-	4.500
E1	6.200	-	6.600
e	0.650 BSC		
L	0.450	-	0.750
H	0.250 TYP		
θ	0°	-	8°
ccc	0.100		

NOTES:

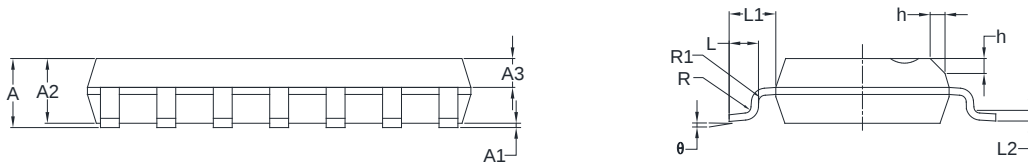
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.
3. Reference JEDEC MO-153.

PACKAGE OUTLINE DIMENSIONS

SOIC-14



RECOMMENDED LAND PATTERN (Unit: mm)



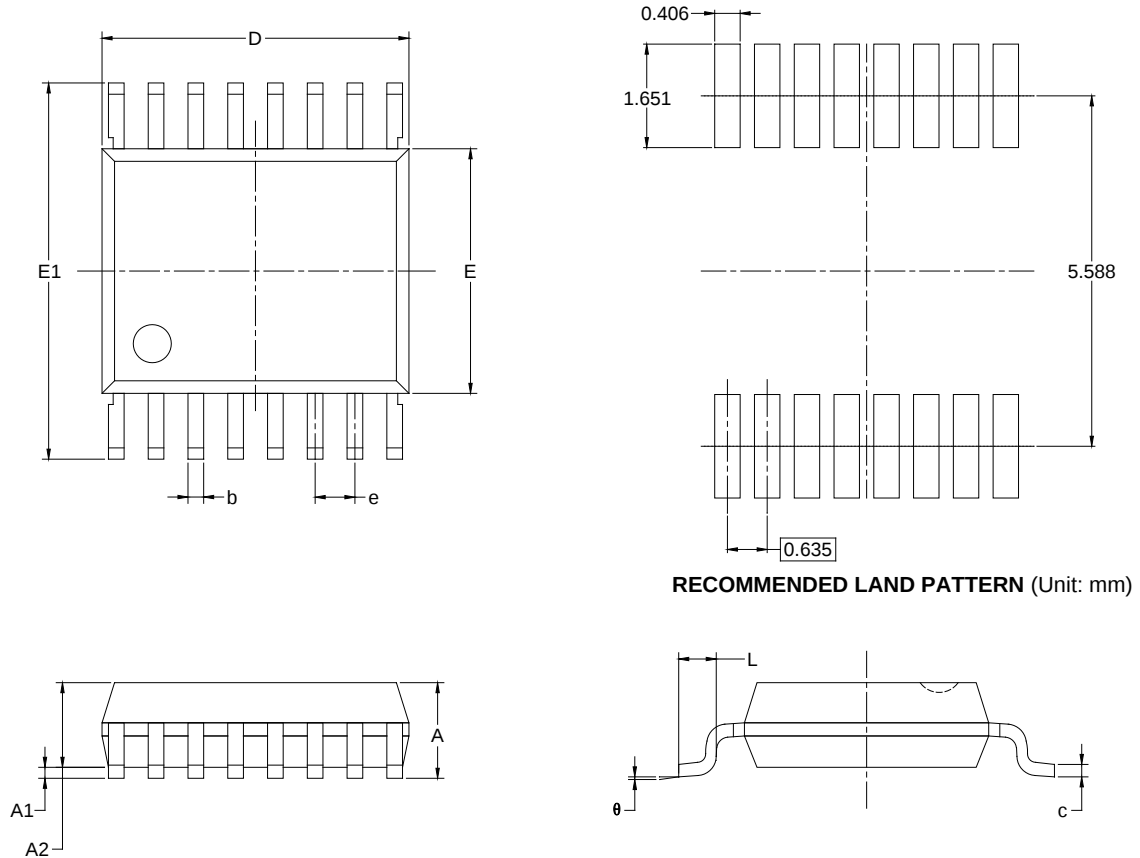
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	1.65	0.049	0.065
A3	0.55	0.75	0.022	0.030
b	0.36	0.49	0.014	0.019
D	8.53	8.73	0.336	0.344
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
L	0.45	0.80	0.018	0.032
L1	1.04 REF		0.040 REF	
L2	0.25 BSC		0.01 BSC	
R	0.07		0.003	
R1	0.07		0.003	
h	0.30	0.50	0.012	0.020
θ	0°	8°	0°	8°

NOTES:

1. Body dimensions do not include mold flash or protrusion.
2. This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

SSOP-16



RECOMMENDED LAND PATTERN (Unit: mm)

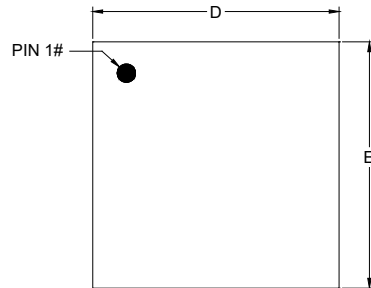
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.200	0.300	0.008	0.012
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	0.635 BSC		0.025 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

NOTES:

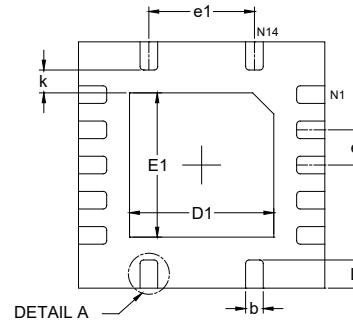
1. Body dimensions do not include mold flash or protrusion.
2. This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

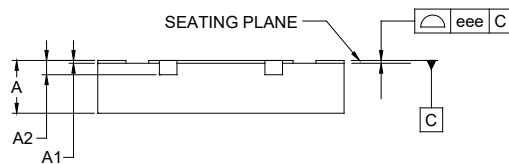
TQFN-3.5×3.5-14AL



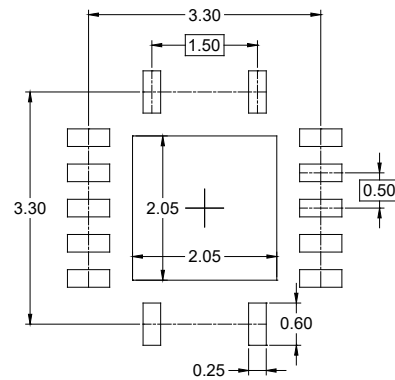
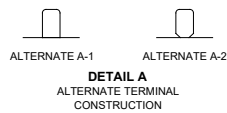
TOP VIEW



BOTTOM VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN (Unit: mm)

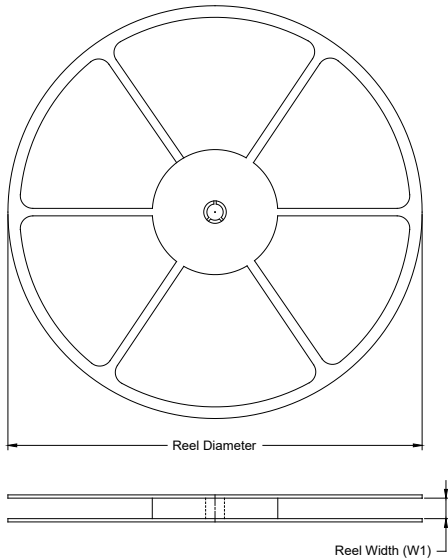
Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	0.700	-	0.800
A1	0.000	-	0.050
A2	0.203 REF		
b	0.200	-	0.300
D	3.400	-	3.600
E	3.400	-	3.600
D1	1.950	-	2.150
E1	1.950	-	2.150
e	0.500 BSC		
e1	1.500 BSC		
k	0.200 MIN		
L	0.300	-	0.500
eee	0.080		

NOTE: This drawing is subject to change without notice.

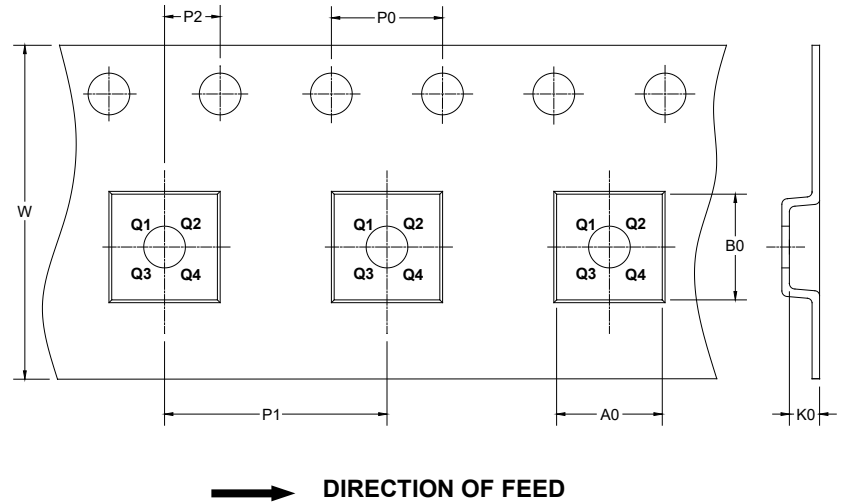
PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
TSSOP-14	13"	12.4	6.80	5.40	1.50	4.0	8.0	2.0	12.0	Q1
SOIC-14	13"	16.4	6.60	9.30	2.10	4.0	8.0	2.0	16.0	Q1
SSOP-16	13"	12.4	6.40	5.40	2.10	4.0	8.0	2.0	12.0	Q1
TQFN-3.5×3.5-14AL	13"	12.4	3.80	3.80	1.10	4.0	8.0	2.0	12.0	Q1

DD0001

PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
13"	386	280	370	5

DD0002