

GENERAL DESCRIPTION

The 74AHCT244 is an octal buffer/line driver with non-inverting 3-state outputs, and it is designed for 4.5V to 5.5V V_{CC} operation.

The device can be used as two 4-bit buffers or one 8-bit buffer. The $1\overline{OE}$ and $2\overline{OE}$ are two output enable inputs, and each controls four of the 3-state outputs. When $n\overline{OE}$ is set high, the outputs are in high-impedance state. When $n\overline{OE}$ is set low, data transmits from the nA_n inputs to the nY_n outputs.

FUNCTION TABLE

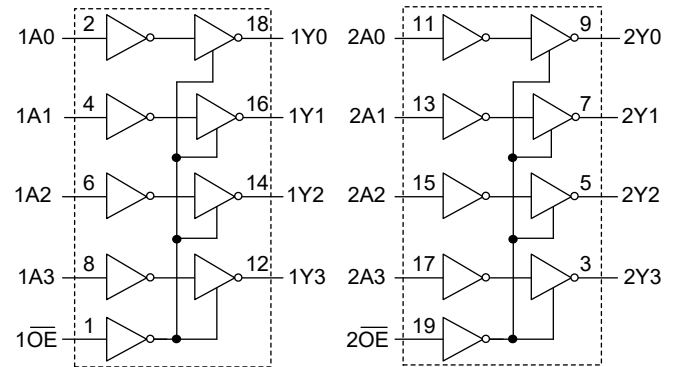
CONTROL INPUT	INPUT	OUTPUT
$n\overline{OE}$	nA_n	nY_n
L	L	L
L	H	H
H	X	Z

H = High Voltage Level
 L = Low Voltage Level
 Z = High-Impedance State
 X = Don't Care

FEATURES

- **Supply Voltage Range: 4.5V to 5.5V**
- **Input Accept Voltages Higher than the Supply Voltage**
- **+8mA/-8mA Output Current**
- **3-State Buffers**
- **-40°C to +125°C Operating Temperature Range**
- **Available in Green SOIC-20 and TSSOP-20 Packages**

LOGIC DIAGRAM



74AHCT244

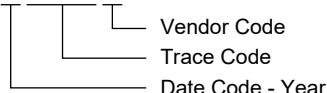
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74AHCT244	SOIC-20	-40°C to +125°C	74AHCT244XS20G/TR	74AHCT244XS20 XXXXXX	Tape and Reel, 1500
	TSSOP-20	-40°C to +125°C	74AHCT244XTS20G/TR	0KGXTS20 XXXXXX	Tape and Reel, 4000

MARKING INFORMATION

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

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 ⁽¹⁾

Supply Voltage Range, V_{CC}	-0.5V to 7.0V
Input Voltage Range, V_I ⁽²⁾	-0.5V to 7.0V
Output Voltage Range, V_O ⁽²⁾	-0.5V to MIN(7.0V, $V_{CC} + 0.5V$)
Input Clamp Current, I_{IK} ($V_I < 0V$)	-20mA
Output Clamp Current, I_{OK} ($V_O > V_{CC}$ or $V_O < 0V$)	$\pm 20mA$
Continuous Output Current, I_O	$\pm 25mA$
Continuous Current through V_{CC} or GND	$\pm 75mA$
Junction Temperature ⁽³⁾	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s)	+260°C
ESD Susceptibility	
HBM	4000V
CDM	1000V

RECOMMENDED OPERATING CONDITIONS

Function Supply Voltage Range, V_{CC}	4.5V to 5.5V
Input Voltage Range, V_I	0V to 5.5V
Output Voltage Range, V_O	0V to V_{CC}
Output Current, I_O	$\pm 8mA$
Input Transition Rise or Fall Rate, $\Delta t/\Delta V$	
$V_{CC} = 4.5V$ to $5.5V$	10ns/V (MAX)
Operating Temperature Range	-40°C to +125°C

OVERSTRESS CAUTION

1. 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.
2. The input and output negative voltage ratings may be exceeded if the input and output clamp current ratings are observed.
3. The performance capability of a high-performance integrated circuit in conjunction with its thermal environment can create junction temperatures which are detrimental to reliability.

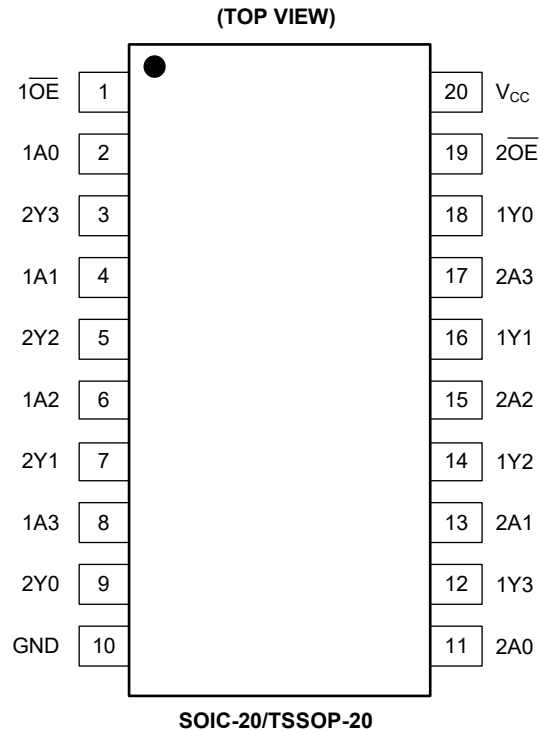
ESD SENSITIVITY CAUTION

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

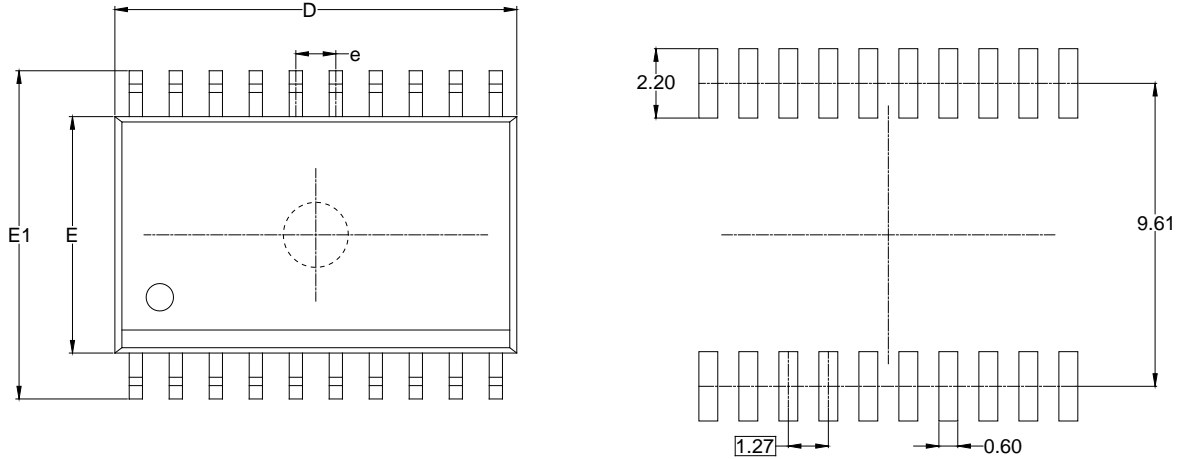


PIN DESCRIPTION

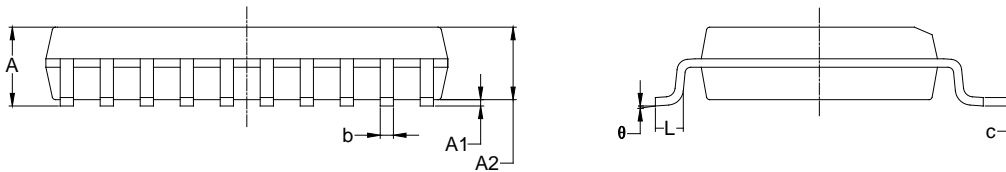
PINS	NAME	FUNCTION
1, 19	$1\overline{OE}$, $2\overline{OE}$	Output Enable Inputs (Active Low).
2, 4, 6, 8	1A0, 1A1, 1A2, 1A3	Data Inputs.
18, 16, 14, 12	1Y0, 1Y1, 1Y2, 1Y3	Data Outputs.
10	GND	Ground.
11, 13, 15, 17	2A0, 2A1, 2A2, 2A3	Data Inputs.
9, 7, 5, 3	2Y0, 2Y1, 2Y2, 2Y3	Data Outputs.
20	V_{CC}	Supply Voltage.

PACKAGE OUTLINE DIMENSIONS

SOIC-20



RECOMMENDED LAND PATTERN (Unit: mm)

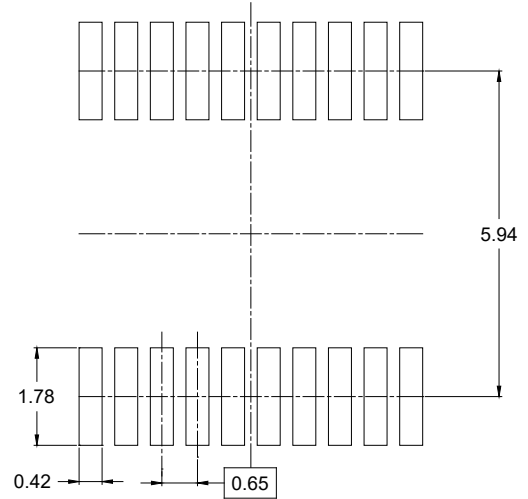
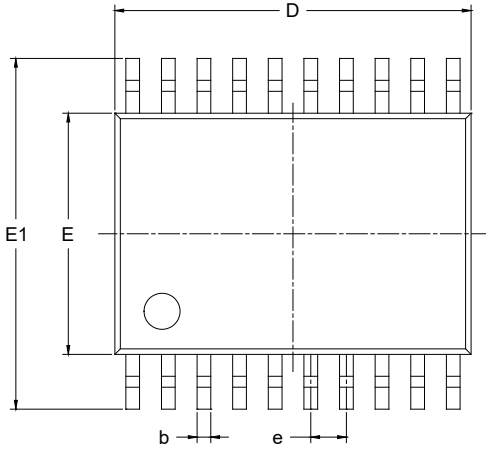


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	2.350	2.650	0.093	0.104
A1	0.100	0.300	0.004	0.012
A2	2.100	2.500	0.083	0.098
b	0.330	0.510	0.013	0.020
c	0.204	0.330	0.008	0.013
D	12.520	13.000	0.493	0.512
E	7.400	7.600	0.291	0.299
E1	10.210	10.610	0.402	0.418
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

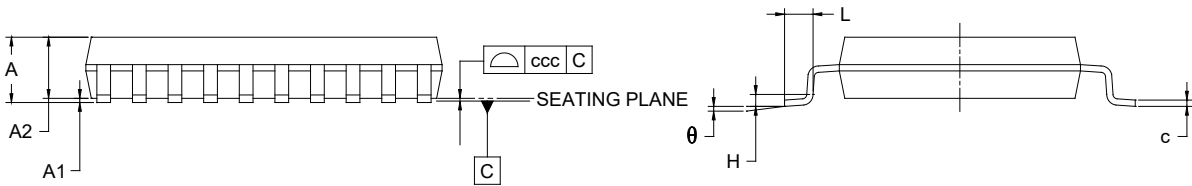
- NOTES:
 1. Body dimensions do not include mold flash or protrusion.
 2. This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

TSSOP-20



RECOMMENDED LAND PATTERN (Unit: mm)



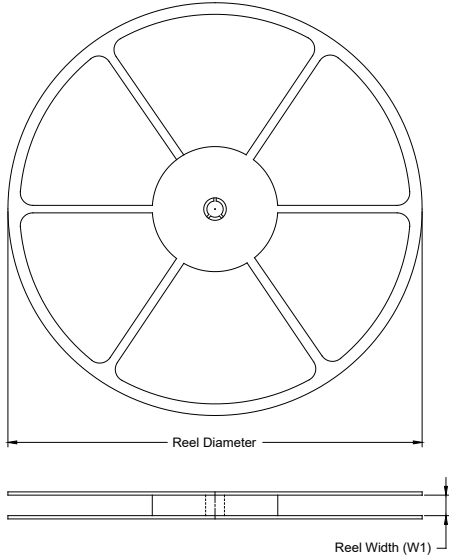
Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	-	-	1.200
A1	0.050	-	0.150
A2	0.800	-	1.050
b	0.190	-	0.300
c	0.090	-	0.200
D	6.400	-	6.600
E	4.300	-	4.500
E1	6.200	-	6.600
e	0.650 BSC		
L	0.450	-	0.750
H	0.250 TYP		
theta	0°	-	8°
ccc	0.100		

NOTES:

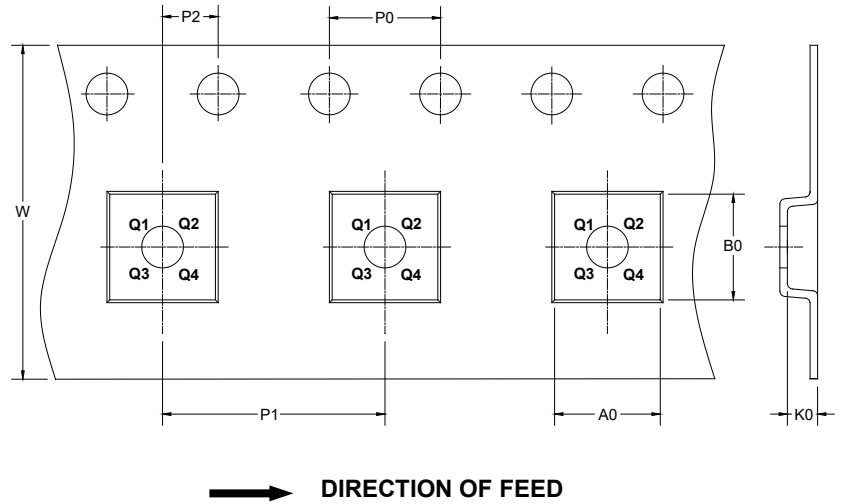
1. Body dimensions do not include mode flash or protrusion.
2. This drawing is subject to change without notice.
3. Reference JEDEC MO-153.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



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

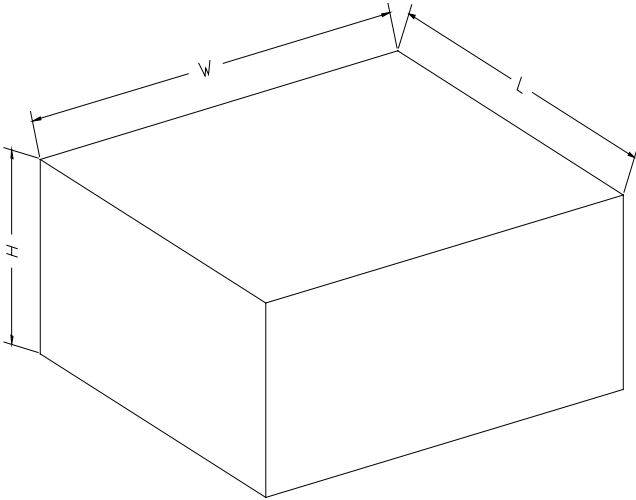
KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
SOIC-20	13"	24.4	10.90	13.30	3.00	4.0	12.0	2.0	24.0	Q1
TSSOP-20	13"	16.4	6.80	6.90	1.50	4.0	8.0	2.0	16.0	Q1

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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