

GENERAL DESCRIPTION

The 74LV541A is an octal buffer/line driver with 3-state outputs, which can accept supply voltage range from 2.0V to 5.5V. The device is the best choice for driving bus lines or buffer memory address registers. The inputs and outputs are placed on opposite sides of the package, making it easier to print circuit board layout.

The device features 3-state control gate consisting of a two-input AND gate with active low inputs. $\overline{OE1}$ and $\overline{OE2}$ are two output enable inputs. When $\overline{OE1}$ and $\overline{OE2}$ are low, data transmits from A_n inputs to the Y_n outputs. When $\overline{OE1}$ or $\overline{OE2}$ is high, all outputs are in high-impedance state.

This device is highly suitable for partial power-down applications using power-off leakage current (I_{OFF}) circuit. When the device is powered down, the current backflow will be prevented from passing through the device.

FUNCTION TABLE

INPUT			OUTPUT
$\overline{OE1}$	$\overline{OE2}$	A_n	Y_n
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

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

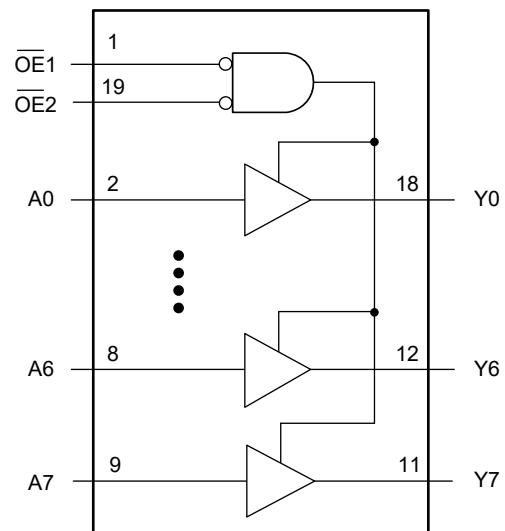
FEATURES

- **Wide Supply Voltage Range: 2.0V to 5.5V**
- **All Ports Support Mixed-Mode Voltage Operation**
- **Support Partial Power-Down Mode**
- **-40°C to +125°C Operating Temperature Range**
- **Available in Green SOIC-20 and TSSOP-20 Packages**

APPLICATIONS

- Industrial Devices
- Servers
- Surveillance Cameras
- Network Switches
- Infotainment

LOGIC DIAGRAM



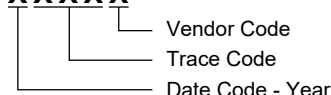
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74LV541A	SOIC-20	-40°C to +125°C	74LV541AXS20G/TR	74LV541AXS20 XXXXX	Tape and Reel, 1500
	TSSOP-20	-40°C to +125°C	74LV541AXTS20G/TR	06HXTS20 XXXXX	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, V_{CC}	-0.5V to 6.5V
Input Voltage, V_I ⁽²⁾	-0.5V to 6.5V
Output Voltage, V_O ⁽²⁾	
High-State or Low-State.....	-0.5V to MIN(6.5V, $V_{CC} + 0.5V$)
3-State or Power-Down Mode.....	-0.5V to 6.5V
Input Clamping Current, I_{IK} ($V_I < 0V$).....	-20mA
Output Clamping Current, I_{OK} ($V_O < 0V$).....	-50mA
Output Current, I_O	
High-State.....	-35mA
Low-State.....	35mA
Supply Current, I_{CC}	70mA
Ground Current, I_{GND}	-70mA
Junction Temperature ⁽³⁾	+150°C
Storage Temperature Range.....	-65°C to +150°C
Lead Temperature (Soldering, 10s).....	+260°C
ESD Susceptibility	
HBM.....	2000V
CDM.....	1000V

RECOMMENDED OPERATING CONDITIONS

Operating Supply Voltage, V_{CC}	2.0V to 5.5V
Input Voltage, V_I	0V to 5.5V
Output Voltage, V_O	
High-State or Low-State.....	0V to V_{CC}
3-State or Power-Down Mode.....	0V to 5.5V
Output Current, I_O	$\pm 16mA$
Input Transition Rise or Fall Rate, $\Delta t/\Delta V$	
$V_{CC} = 2.3V$ to $2.7V$	200ns/V (MAX)
$V_{CC} = 3.0V$ to $3.6V$	100ns/V (MAX)
$V_{CC} = 4.5V$ to $5.5V$	20ns/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.

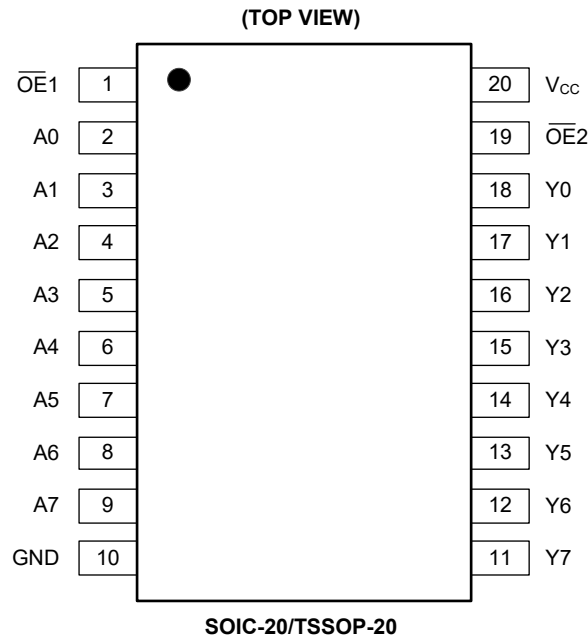
ESD SENSITIVITY CAUTION

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 CONFIGURATION

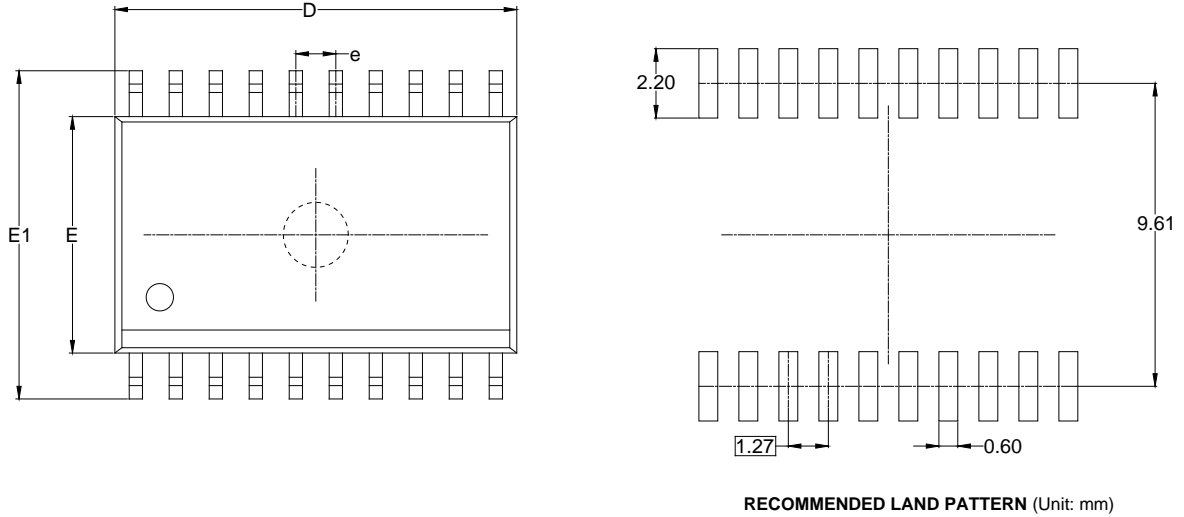


PIN DESCRIPTION

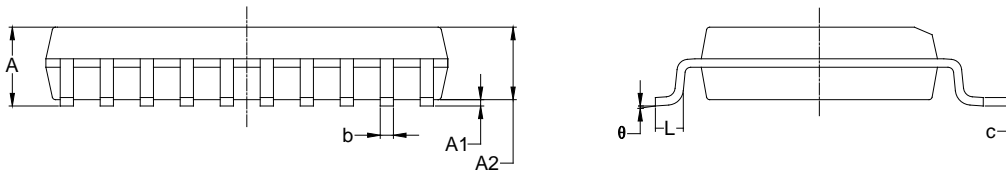
PIN	NAME	FUNCTION
1, 19	$\overline{OE}1$, $\overline{OE}2$	Output Enable Inputs (Active Low).
2, 3, 4, 5, 6, 7, 8, 9	A0, A1, A2, A3, A4, A5, A6, A7	Data Inputs.
18, 17, 16, 15, 14, 13, 12, 11	Y0, Y1, Y2, Y3, Y4, Y5, Y6, Y7	Data Outputs.
10	GND	Ground.
20	V _{CC}	Supply Voltage.

PACKAGE OUTLINE DIMENSIONS

SOIC-20



RECOMMENDED LAND PATTERN (Unit: mm)

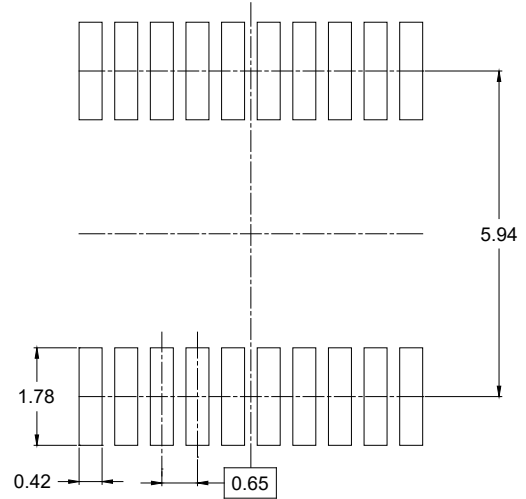
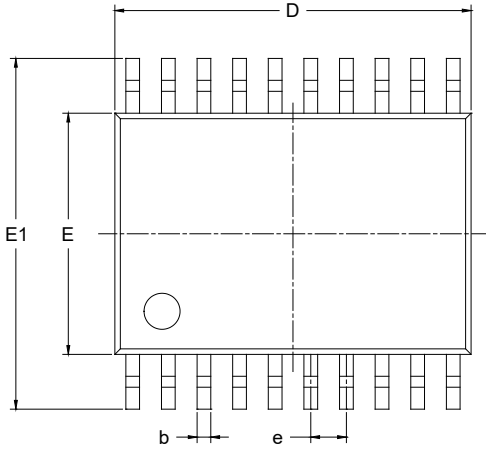


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	2.350	2.650	0.093	0.104
A1	0.100	0.300	0.004	0.012
A2	2.100	2.500	0.083	0.098
b	0.330	0.510	0.013	0.020
c	0.204	0.330	0.008	0.013
D	12.520	13.000	0.493	0.512
E	7.400	7.600	0.291	0.299
E1	10.210	10.610	0.402	0.418
e	1.27 BSC		0.050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

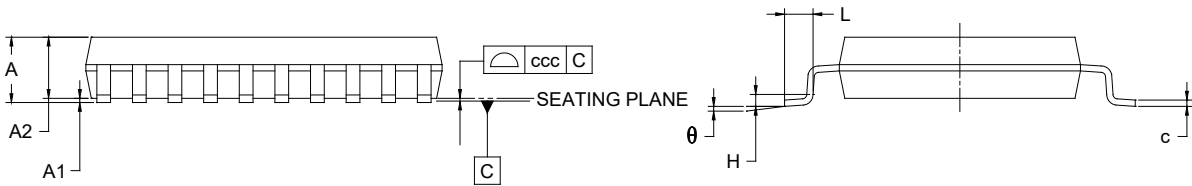
- NOTES:
 1. Body dimensions do not include mode flash or protrusion.
 2. This drawing is subject to change without notice.

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		
θ	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.

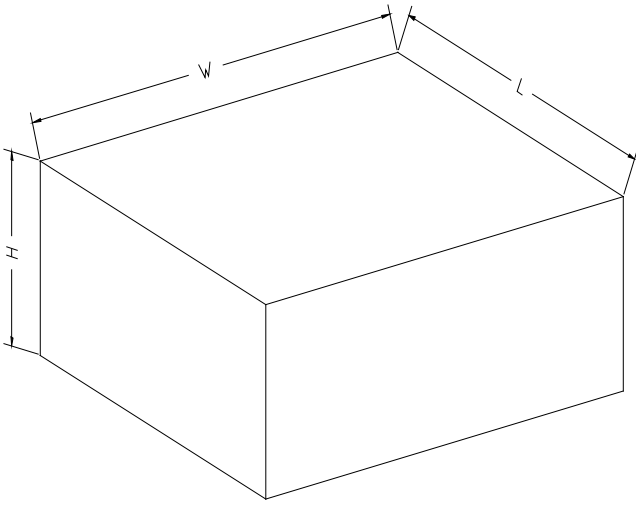
KEY PARAMETER LIST OF TAPE AND REEL

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

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