



74LVC540A

Octal Buffer/Line Driver with 5V Tolerant Inputs/Outputs

GENERAL DESCRIPTION

The 74LVC540A is an octal buffer/line driver with 3-state outputs, which can accept supply voltage range from 1.65V to 3.6V. 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 $\overline{OE1}$ or $\overline{OE2}$ is high, all outputs are in high-impedance state. Both 3.3V and 5V devices can drive inputs, enabling this device to operate as translator in a mixed 3.3V and 5V system environment.

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

The 74LVC540A is available in a Green TSSOP-20 package. It operates over an operating temperature range of -40°C to +125°C.

FUNCTION TABLE

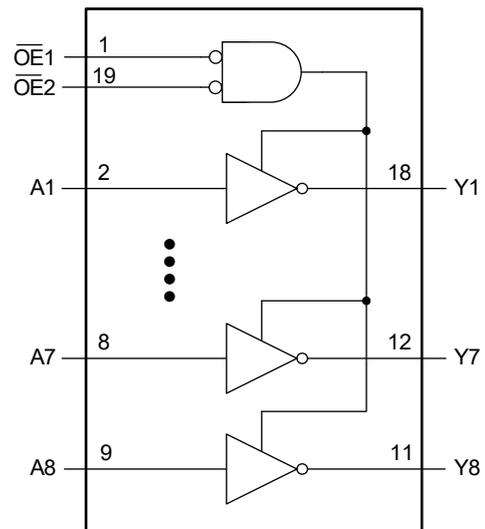
INPUT		OUTPUT	
$\overline{OE1}$	$\overline{OE2}$	A_n	Y_n
L	L	L	H
L	L	H	L
X	H	X	Z
H	X	X	Z

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

FEATURES

- Wide Supply Voltage Range: 1.65V to 3.6V
- Inputs Accept Voltages Higher than the Supply Voltage and up to 5.5V
- +24mA/-24mA Output Current
- CMOS Low Power Dissipation
- Support Partial Power-Down Mode
- -40°C to +125°C Operating Temperature Range
- Available in a Green TSSOP-20 Package

LOGIC DIAGRAM



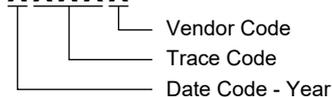
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74LVC540A	TSSOP-20	-40°C to +125°C	74LVC540AXTS20G/TR	17AXTS20 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

Supply Voltage Range, V_{CC}	-0.5V to 6.5V
Input Voltage Range, V_I ⁽¹⁾	-0.5V to 6.5V
Output Voltage Range, V_O ⁽¹⁾	
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 Clamp Current, I_{IK} ($V_I < 0V$)	-50mA
Output Clamp Current, I_{OK} ($V_O < 0V$)	-50mA
Continuous Output Current, I_O	±50mA
Continuous Current through V_{CC} or GND	±100mA
Junction Temperature ⁽²⁾	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s)	+260°C
ESD Susceptibility ^{(3) (4)}	
HBM	±6000V
CDM	±1000V

NOTES:

- The input and output voltage ratings may be exceeded if the input and output clamp current ratings are observed.
- The performance capability of a high-performance integrated circuit in conjunction with its thermal environment can create junction temperatures which are detrimental to reliability.
- For human body model (HBM), all pins comply with ANSI/ESDA/JEDEC JS-001 specifications.
- For charged device model (CDM), all pins comply with ANSI/ESDA/JEDEC JS-002 specifications.

RECOMMENDED OPERATING CONDITIONS

Function Supply Voltage, V_{CC}	1.5V (MIN)
Operating Supply Voltage Range, V_{CC}	1.65V to 3.6V
Input Voltage Range, V_I	0V to 5.5V
Output Voltage Range, 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	±24mA
Input Transition Rise or Fall Rate, $\Delta t/\Delta V$	
$V_{CC} = 2.3V$ to $2.7V$	20ns/V (MAX)
$V_{CC} = 2.7V$ to $3.6V$	10ns/V (MAX)
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.

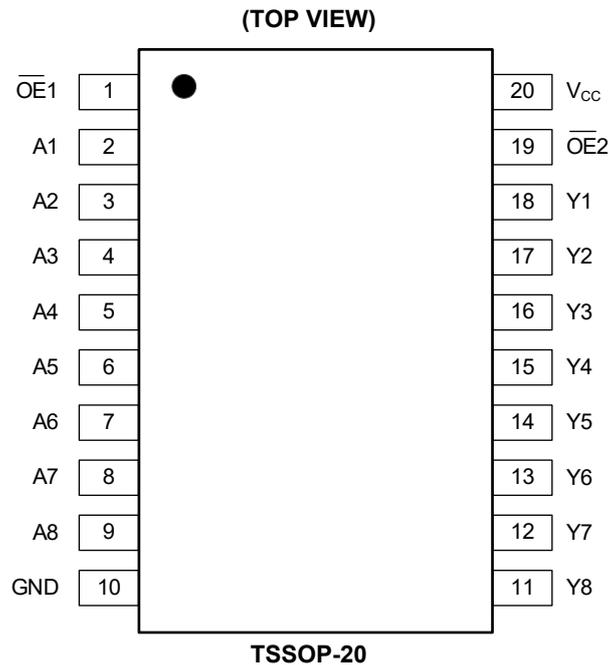
ESD SENSITIVITY CAUTION

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 CONFIGURATION

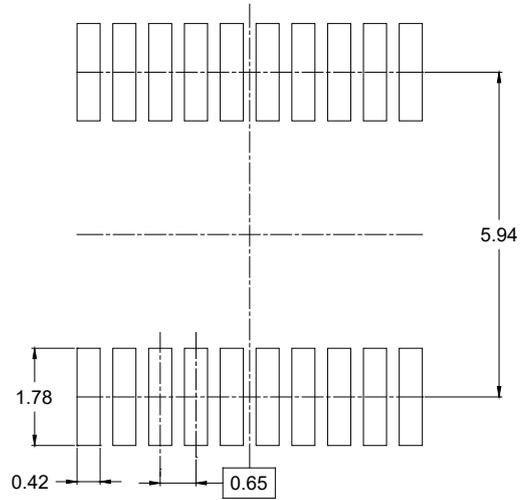
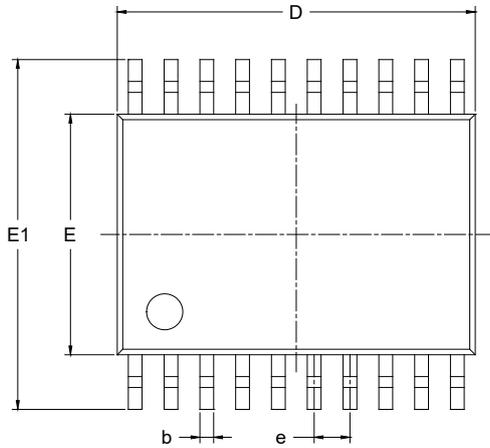


PIN DESCRIPTION

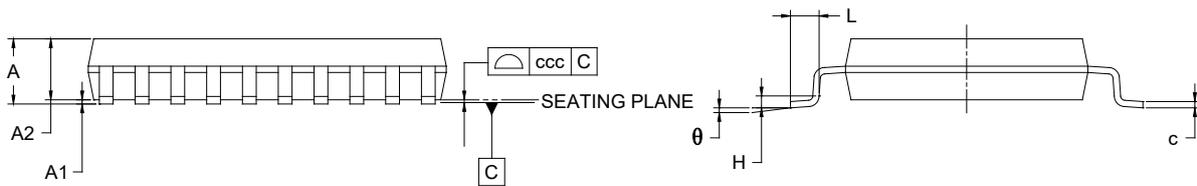
PIN	NAME	FUNCTION
1, 19	$\overline{OE}1$, $\overline{OE}2$	Output Enable Inputs (Active-Low).
2, 3, 4, 5, 6, 7, 8, 9	A1, A2, A3, A4, A5, A6, A7, A8	Data Inputs.
18, 17, 16, 15, 14, 13, 12, 11	Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8	Data Outputs.
10	GND	Ground.
20	V _{CC}	Supply Voltage.

PACKAGE OUTLINE DIMENSIONS

TSSOP-20



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		
	MIN	NOM	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		

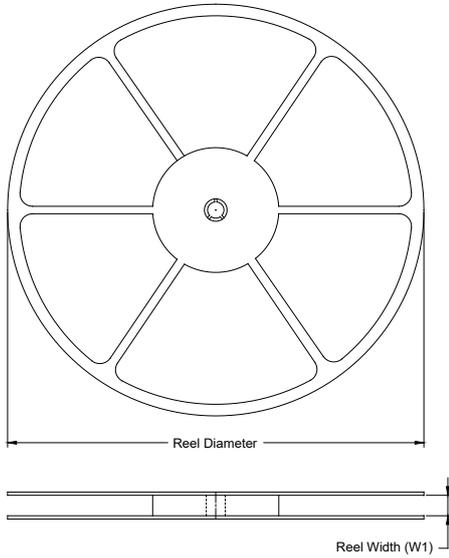
NOTES:

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

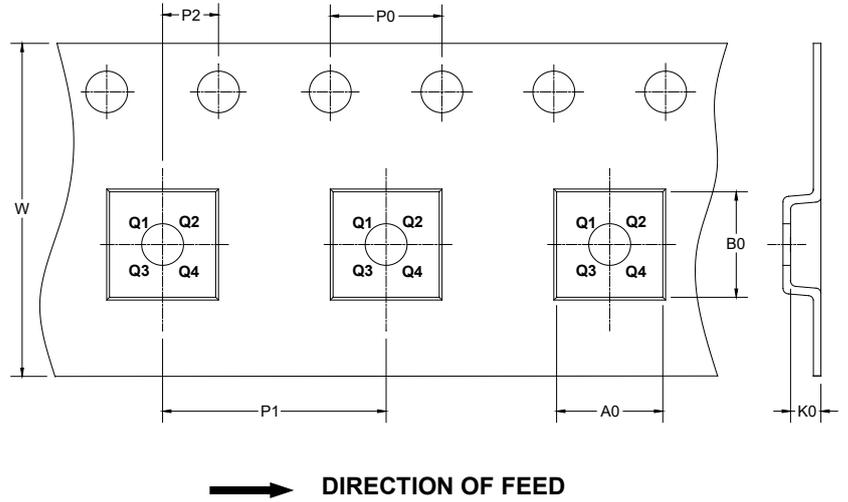
PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



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

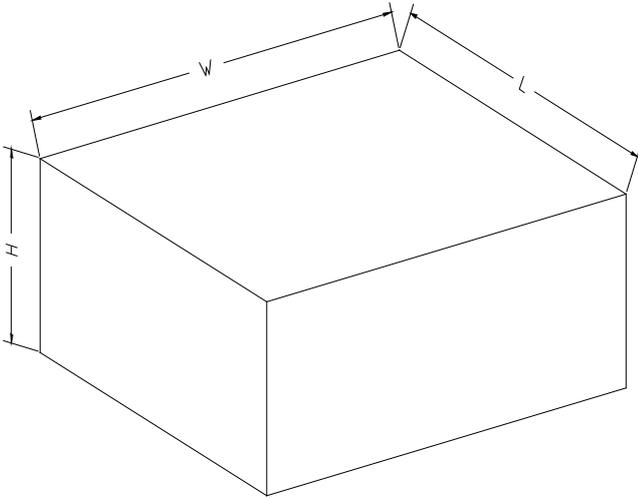
KEY PARAMETER LIST OF TAPE AND REEL

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-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