



74CB3Q3125

Quadruple FET Bus Switch, 2.5V/3.3V Low Voltage, High-Bandwidth Bus Switch

GENERAL DESCRIPTION

The 74CB3Q3125 is a quadruple, high bandwidth FET bus switch with low voltage. Each line switch is independent and has an enable input (active low).

The 74CB3Q3125 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 74CB3Q3125 suitable for partial-power-down applications using I_{OFF} .

The 74CB3Q3125 is available in a Green TSSOP-14 package. It operates over an operating temperature range of -40°C to $+125^{\circ}\text{C}$.

APPLICATIONS

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

FEATURES

- **Supply Voltage Range:** 2.3V to 3.6V
- **High Bandwidth Data Path:** Up to 500MHz
- **Low On-Resistance:** 3.5 Ω (TYP)
- **Low Power Consumption, I_{CC} :** 0.3mA (TYP)
- **Fast Switching Frequency, f_{OE} :** 20MHz (MAX)
- **5V Tolerant I/Os with Device Powered Up or Powered Down**
- **Rail-to-Rail Switching on Data I/O Ports**
 - ◆ 0V to 5V Switching with 3.3V V_{CC}
 - ◆ 0V to 3.3V Switching with 2.5V V_{CC}
- **Bidirectional Data Flow with Near-Zero Propagation Delay**
- **Data and Control Inputs Provide Undershoot Clamp Diodes**
- **Data I/Os Support 0V to 5V Signaling Levels:** 0.8V, 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, 5V
- **Control Inputs can be Driven by TTL, 5V, or 3.3V CMOS Outputs**
- **I_{OFF} Supports Partial-Power-Down Mode Operation**
- **-40°C to $+125^{\circ}\text{C}$ Operating Temperature Range**
- **Available in a Green TSSOP-14 Package**

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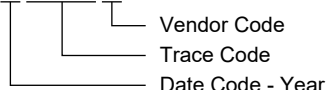
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74CB3Q3125	TSSOP-14	-40°C to +125°C	74CB3Q3125XTS14G/TR	OPA XTS14 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 Range, V_{CC}	-0.5V to 4.6V
Control Input Voltage, V_{IN}	-0.5V to 7V
Switch I/O Voltage, V_{IO}	-0.5V to 7V
Control Input Clamp Current, $V_{IN} < 0V$, I_{IK}	-50mA
I/O Port Clamp Current, $V_{IO} < 0V$, $I_{I/OK}$	-50mA
On-State Switch Current, I_{IO}	± 64 mA
Junction Temperature	+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

Supply Voltage Range, V_{CC}	2.3V to 3.6V
Control Input Voltage, V_{IN}	0V to 5.5V
Switch I/O Voltage, V_{IO}	0V to 5.5V
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.

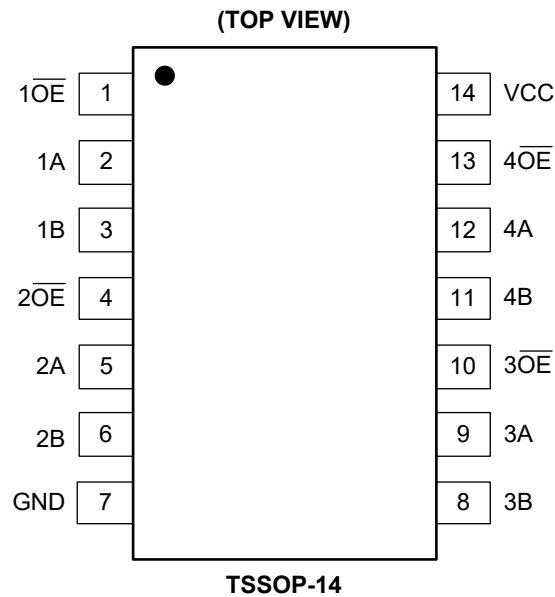
ESD SENSITIVITY CAUTION

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

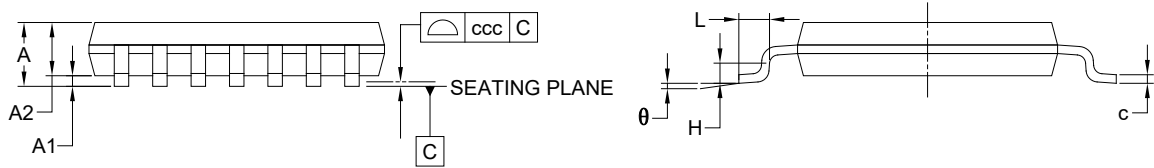
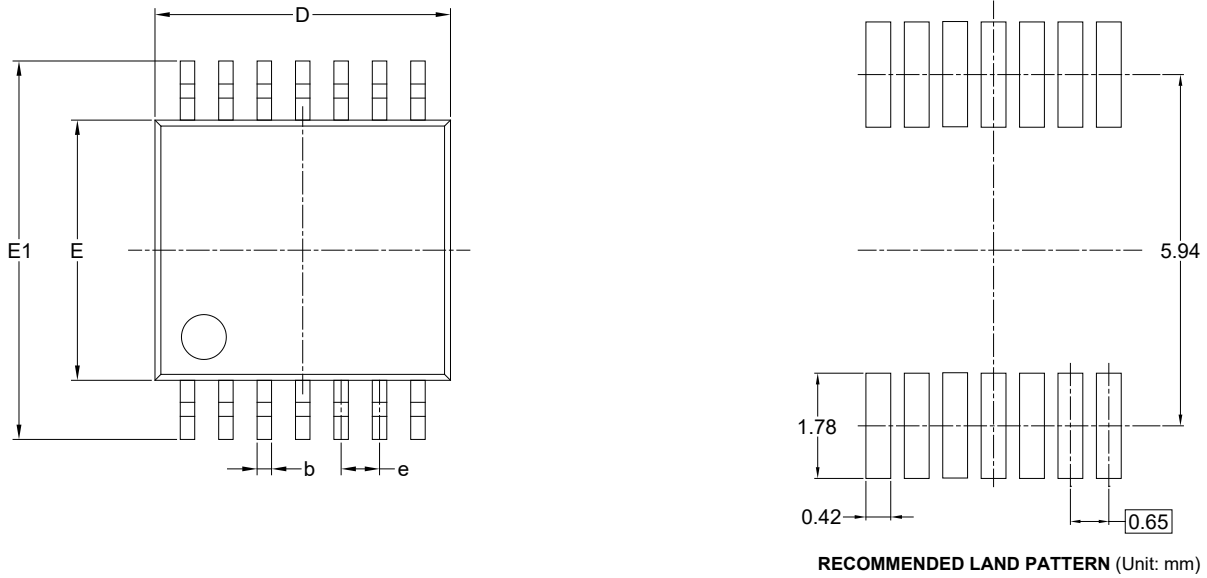


PIN DESCRIPTION

PIN	NAME	I/O	FUNCTION
1	1 \overline{OE}	I	Output Enable (Active Low) of Switch 1.
2	1A	I/O	A Node of Switch 1.
3	1B	I/O	B Node of Switch 1.
4	2 \overline{OE}	I	Output Enable (Active Low) of Switch 2.
5	2A	I/O	A Node of Switch 2.
6	2B	I/O	B Node of Switch 2.
7	GND	–	Ground.
8	3B	I/O	B Node of Switch 3.
9	3A	I/O	A Node of Switch 3.
10	3 \overline{OE}	I	Output Enable (Active Low) of Switch 3.
11	4B	I/O	B Node of Switch 4.
12	4A	I/O	A Node of Switch 4.
13	4 \overline{OE}	I	Output Enable (Active Low) of Switch 4.
14	VCC	–	Power Supply.

PACKAGE OUTLINE DIMENSIONS

TSSOP-14



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.

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

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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