



**ORDER NUMBER(S):**

**USB3290-FH FOR 40 BALL, VFBGA LEAD-FREE ROHS COMPLIANT PACKAGE**

**USB3290-FH-TR FOR 40 BALL, VFBGA LEAD-FREE ROHS COMPLIANT PACKAGE (TAPE AND REEL)**

Reel Size is 4000 pieces.



80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000, FAX (631) 273-3123

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## General Description

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The USB3290 provides the Physical Layer (PHY) interface to a USB 2.0 Device Controller. The IC is available in a 40 ball lead-free RoHS compliant VFBGA package. The small footprint package makes the USB3290 ideal for portable consumer electronics applications.

The USB3290 is an industrial temperature USB 2.0 physical layer transceiver (PHY) integrated circuit. SMSC's proprietary technology results in low power dissipation, which is ideal for building a bus powered USB 2.0 peripheral. The PHY uses an 8-bit bidirectional parallel interface, which complies with the USB Transceiver Macrocell Interface (UTMI) specification. It supports 480Mbps transfer rate, while remaining backward compatible with USB 1.1 legacy protocol at 12Mbps.

All required termination and 5.25V short circuit protection of the DP/DM lines are internal to the chip. The USB3290 also has an integrated 1.8V regulator so that only a 3.3V supply is required.

While transmitting data, the PHY serializes data and generates SYNC and EOP fields. It also performs needed bit stuffing and NRZI encoding. Likewise, while receiving data, the PHY de-serializes incoming data, stripping SYNC and EOP fields and performs bit un-stuffing and NRZI decoding.

## Block Diagram

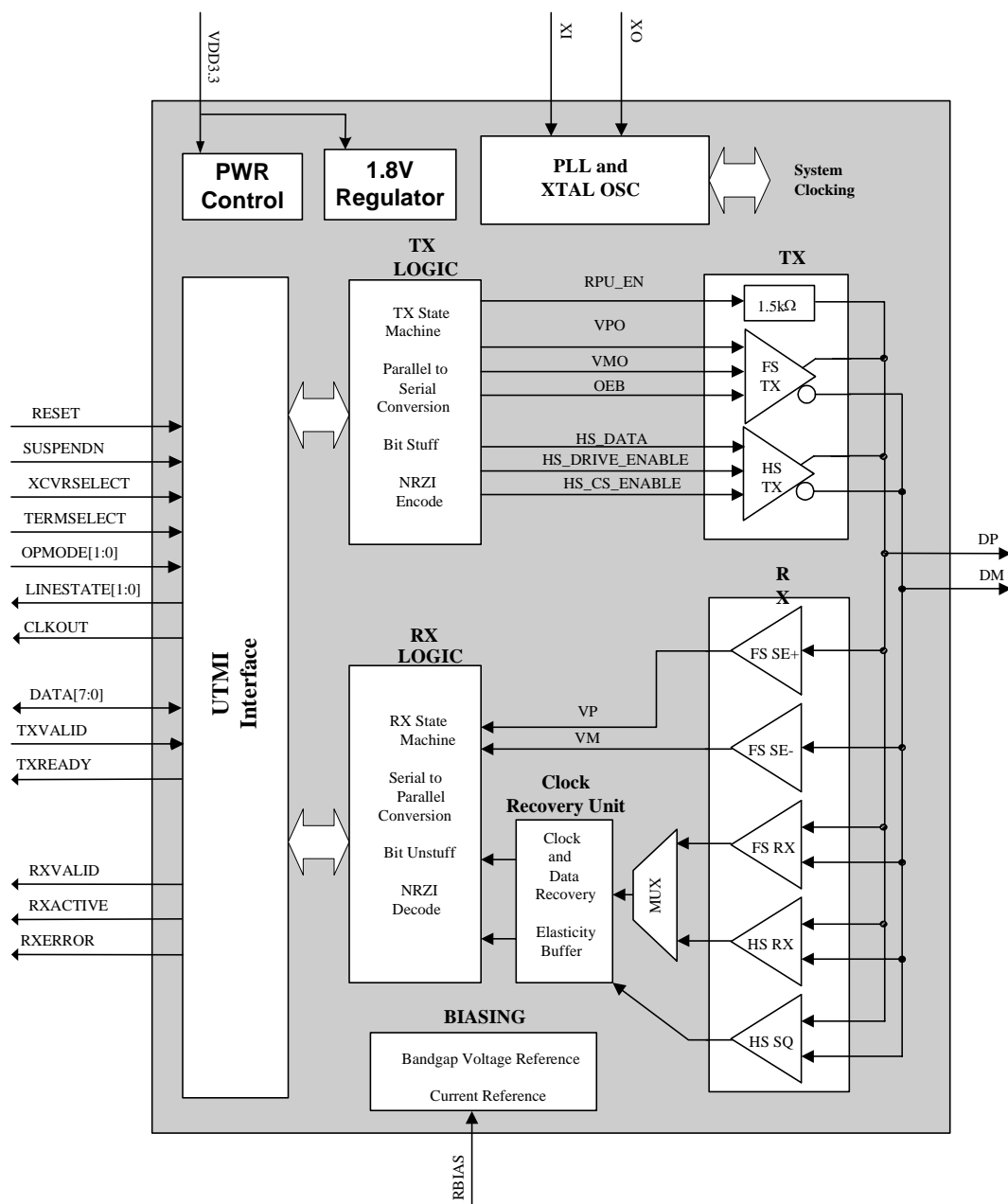


Figure 1 USB3290 Block Diagram

# Package Outline

Revision 1.5 (11-02-07)

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PRODUCT PREVIEW

COMMON DIMENSIONS					
SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	-	-	1.00	5	OVERALL PACKAGE HEIGHT
A1	0.15	-	-	-	STANDOFF
A2	0.65	-	-	-	PKG BODY THICKNESS
D/E	3.90	4.00	4.10	-	XY BODY SIZE
D1/E1	-	3.00 BSC	-	-	XY END BALLS DISTANCE
b	0.25	0.30	0.35	2	BALL DIAMETER
e	-	0.50 BSC	-	-	BALL PITCH
ccc	0	-	0.08	4	COPLANARITY

## NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. MAXIMUM RADIAL TRUE POSITION TOLERANCE OF EACH BALL IS  $\pm 0.075\text{mm}$  AT MAXIMUM MATERIAL CONDITION. DIMENSION "b" IS MEASURED AT THE MAXIMUM BALL DIAMETER, PARALLEL TO PRIMARY DATUM "C".
3. THE BALL "A1" CORNER MUST BE IDENTIFIED IN THE INDICATED AREA OF THE TOP PACKAGE SURFACE BY USING A CORNER CHAMFER, INK/LASER/METALIZED MARKING, INDENTATION, OR OTHER FEATURE OF PACKAGE BODY. EXACT SHAPE OF EACH CORNER IS OPTIONAL, BUT TERMINAL "A1" CORNER MUST BE UNIQUE.
4. PRIMARY DATUM "C" AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE CONTACT SOLDER BALLS.
5. DIMENSION "A" DOES NOT INCLUDE ATTACHED EXTERNAL FEATURES, SUCH AS HEAT SINK OR CHIP CAPACITORS.

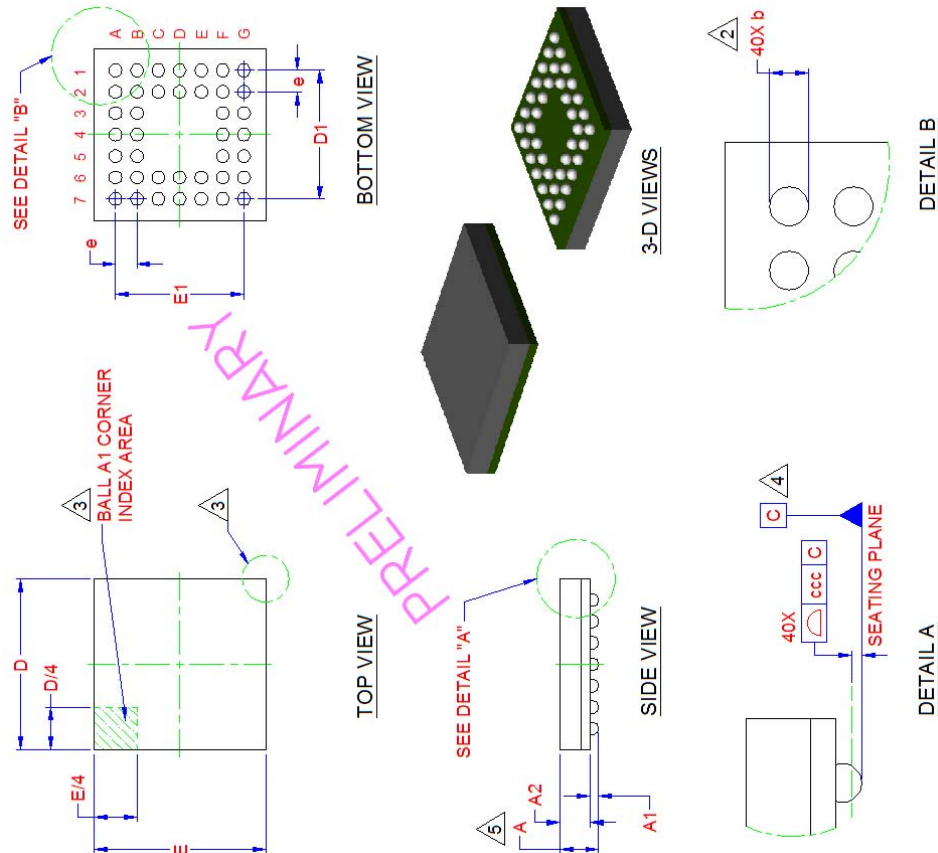


Figure 2 USB3290-FH 40 Ball, VFBGA Package Outline & Parameters 4x4x0.9mm Body, Lead-Free RoHS Compliant

SMSC USB3290