

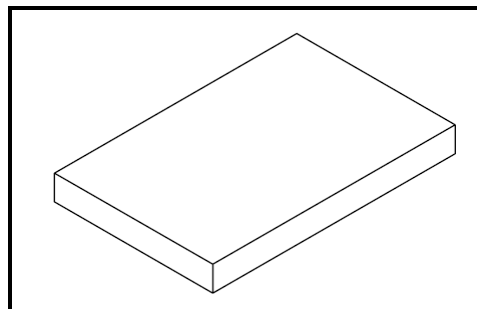
TOSHIBA CDMOS Integrated Silicon Monolithic Circuit

TC7766WBG

WPC Qi v1.2 15W Compliant Wireless Power Receiver Controller IC

1. Outline

The TC7766WBG is a 15W wireless power receiver (RX) IC compliant to the Qi v1.2 standard of the Wireless Power Consortium (WPC). The TC7766WBG includes a rectifier circuit, a digital control circuit, a modulation circuit, a demodulation circuit and a regulator circuit which controls the supply voltage to the load. The IC includes all functions needed to construct a standalone wireless power RX system. In addition, it enables a host controller to check the wireless power system status by accessing its registers via I²C. TC7766WBG allows designs with a minimum amount of external components. e.g. uses an internal oscillator and generates its own power supply voltages with an built-in LDO.



S-XFLGA28-0304-0.50-001

Weight: 10mg (Typ.)

2. Applications

Mobile communication devices (Smartphones, featurephones, tablets), mobile accessory, industrial devices, etc.

3. Features

- Full bridge rectifier circuit
 - 3 modes auto-switch : Synchronous rectification / Diode rectification / Diode bridge
 - Low ON resistance : Hi Side 45mΩ(Typ.) / Low side 30mΩ(Typ.)
 - Under Voltage Lockout (UVLO) function
 - Over Voltage Detection (OVP) function
- Maximum output power : 15W
- Output power
 - LDO-mode : 5V, 5.1V, 5.2V, 7V
 - SW-mode : 6.75V to 14V
- Maximum output current : 1.7A
- Over Current Limit (OCL) function : 2.0A
- Qi v1.2 compliant : Basic Power Profile (BPP) / Extended Power Profile (EPP)
- Foreign Object Detection (FOD) function
- Current drive type startup function
- Thermal shutdown function (TSD)
- I²C access to status and configuration registers
- Advanced functions
 - Packet send function
 - Renegotiation function initiated by RX
- Package : S-XFLGA28-0304-0.50-001 (2.40mm*3.67mm*0.5mm, 0.5mm pitch)

This product has a MOS structure and is sensitive to electrostatic discharge. When handling this product, ensure that the environment is protected against electrostatic discharge by using an earth strap, a conductive mat and an ionizer. Ensure also that the ambient temperature and relative humidity are maintained at reasonable levels.

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4. Block Diagram

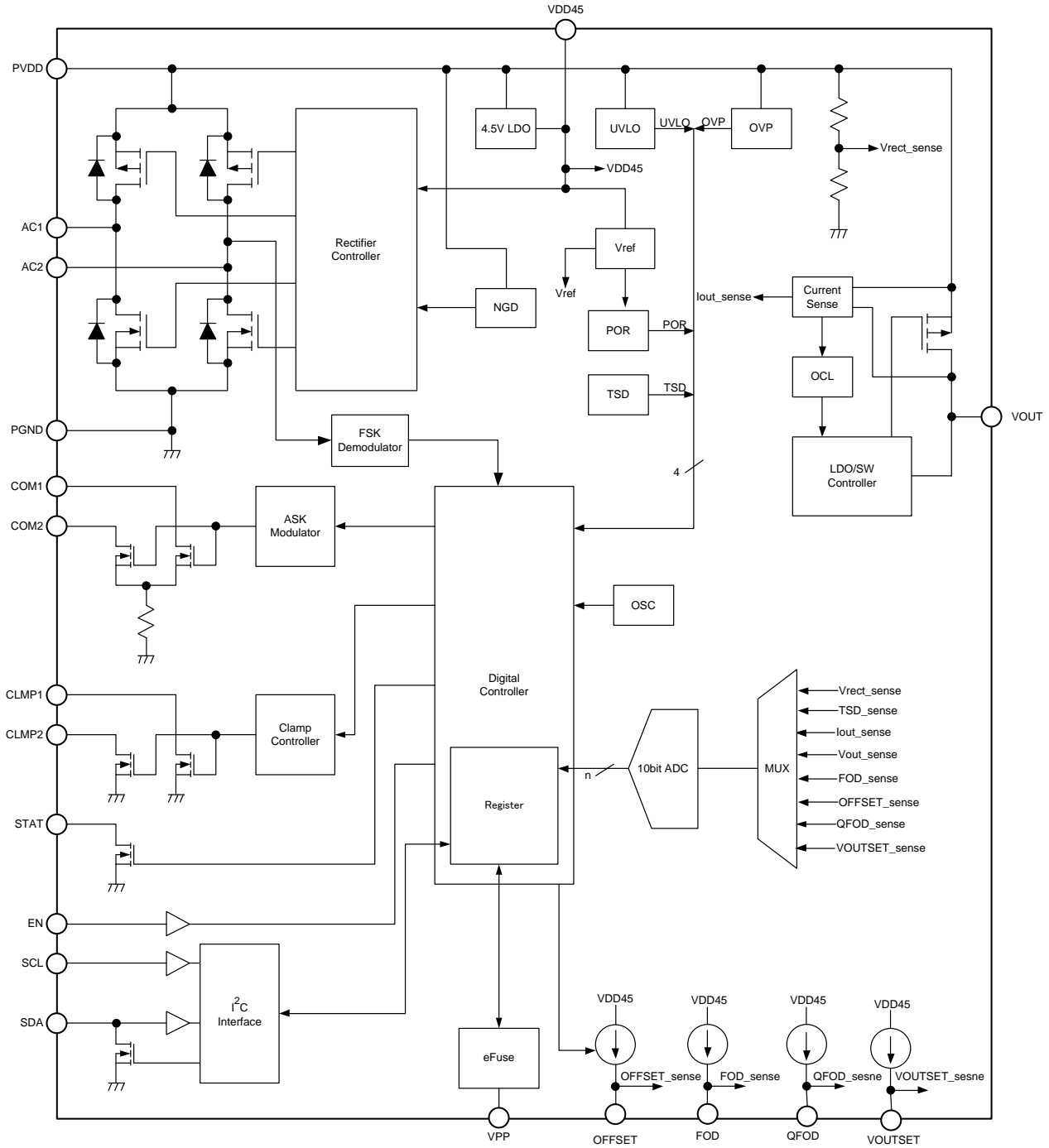


Figure 4.1 TC7766WBG Block Diagram

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5. Terminal Assignment

	1	2	3	4
A	PGND	PGND	PGND	PGND
B	AC2	AC2	AC1	AC1
C	CLMP2	PVDD	PVDD	CLMP1
D	VOUT	VOUT	VOUT	VOUT
E	COM2	SDA	SCL	COM1
F	VDD45	VPP	VOUTSET	QFOD
G	FOD	EN	STAT	OFFSET

(Top View)

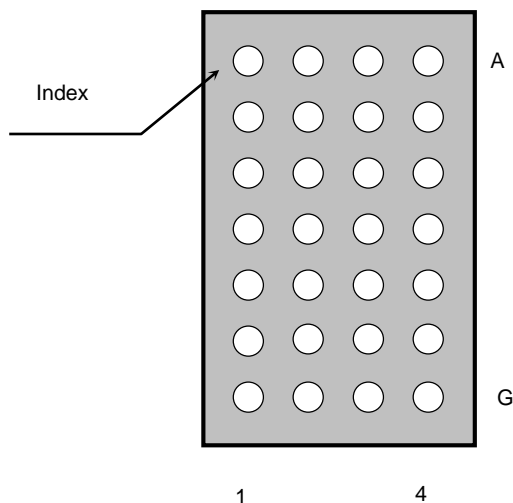


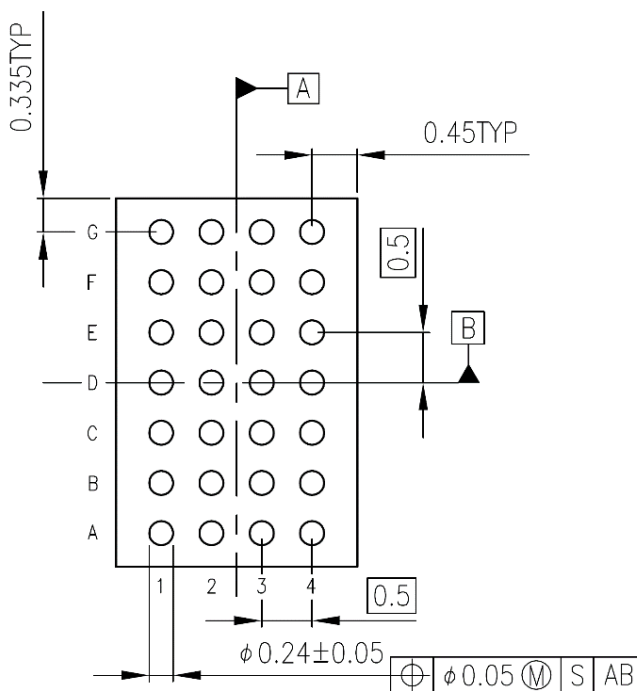
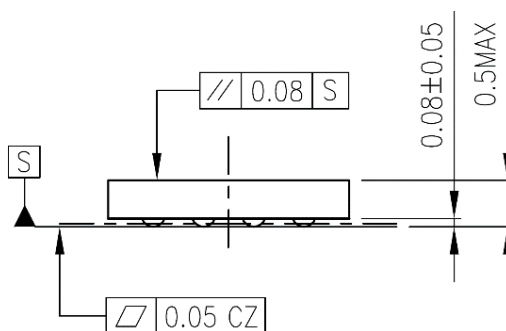
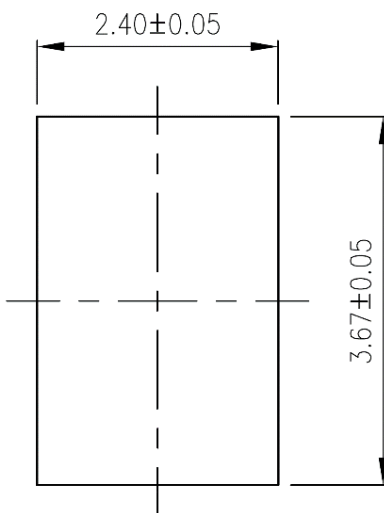
Figure 5.1 Terminal Assignment (Top View)

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6. Package Dimensions

S-XFLGA28-0304-0.50-001

Unit: mm



Weight: 10mg (typ.)

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