

High Efficiency Receiver Controller for Wireless Power Systems

DESCRIPTION

The TS81001 is a power receiver communications and control unit for wireless charging applications. The TS81001 can support systems up to 40W+, and supports Qi® compliant and proprietary applications.

The TS81001 performs the necessary coding of packets to send commands to the transmitter to adjust the power level accordingly.

APPLICATIONS

- Qi® compliant and non-compliant wireless chargers for:
 - Cell Phones and Smartphones
 - GPS Devices
 - Digital Cameras
 - Tablets and eReaders
 - Portable Lighting
 - Toys

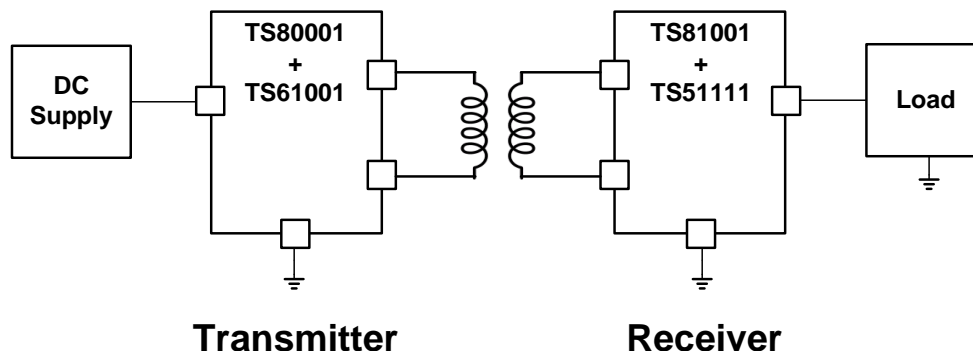
FEATURES

- Supports Qi® and proprietary charging applications
- Wireless power systems up to 40W+
- Support for fixed frequency, variable frequency and variable duty cycle architectures
- Supports indirect (fixed voltage) and single/multi-cell battery charging applications (>2.0V)
- Integrated controller and FLASH for communications and control
- High precision data converters
- Low external component count
- Available in 20 pin 3x3 QFN

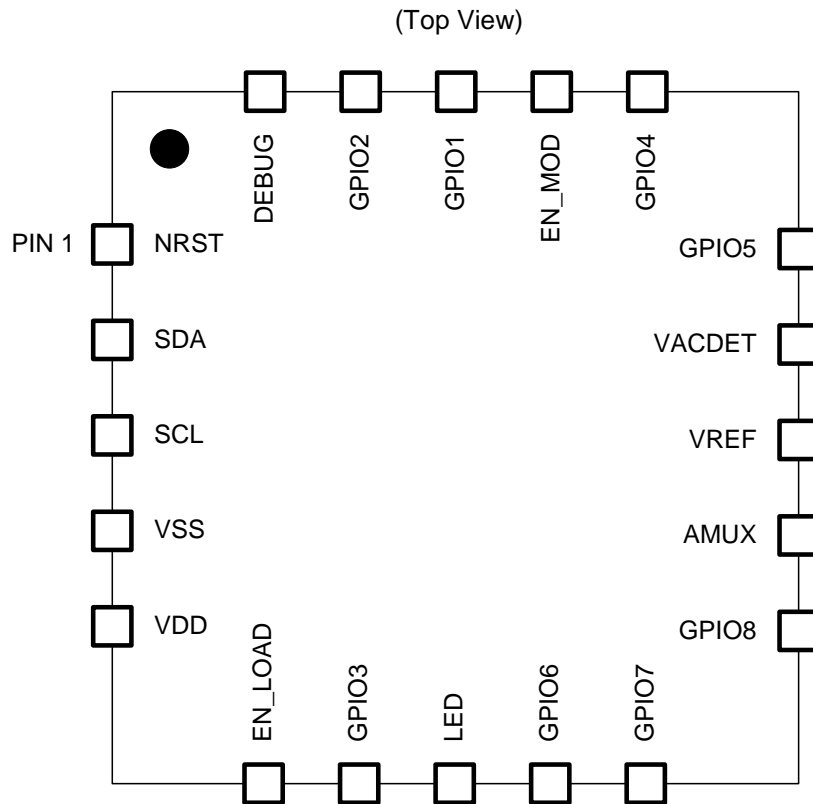
SPECIFICATIONS

- 8-bit CPU Core, 16 MHz
- 8kBytes Flash, 1kByte SRAM
- 12-bit, A/D converter up to 1Msps (28 channels)
- 4 channel DMA
- 2 low-power comparators
- Two 16-bit timers,
- 8-bit timer
- 8 configurable analog general purpose IOs
- Charging status LED output
- I2C interface
- SPI interface
- 1.8 to 3.6 V operating voltage

TYPICAL APPLICATION



PINOUT



PIN DESCRIPTION

QFN Pin #	Pin Symbol	Function	Description
1	NRST	Reset	Reset input
2	SDA	I2C Data	I2C data
3	SCL	I2C Clock	I2C clock
4	VSS	Power GND	Power GND
5	VDD	Input power	Input power supply
6	EN_LOAD	Load enable	Output FET enable (some systems)
7	GPIO3	Analog GPIO	Analog GPIO 3
8	LED	LED output	Charging LED control
9	GPIO6	Analog GPIO	Analog GPIO 6
10	GPIO7	Analog GPIO	Analog GPIO 7
11	GPIO8	Analog GPIO	Analog GPIO 8
12	AMUX	Analog GPIO	AMUX input from TS51111
13	VREF	Analog GPIO	VREF input from TS51111
14	VACDET	Analog GPIO	VACDET input from TS51111
15	GPIO5	Open-Drain GPIO	True Open-Drain GPIO 5
16	GPIO4	Open-Drain GPIO	True Open-Drain GPIO 4
17	EN_MOD	Analog GPIO	EN_MOD output to TS51111
18	GPIO1	Analog GPIO	Analog GPIO 1
19	GPIO2	Analog GPIO	Analog GPIO 2
20	DEBUG	Debug	Debug pin

APPLICATION SCHEMATIC

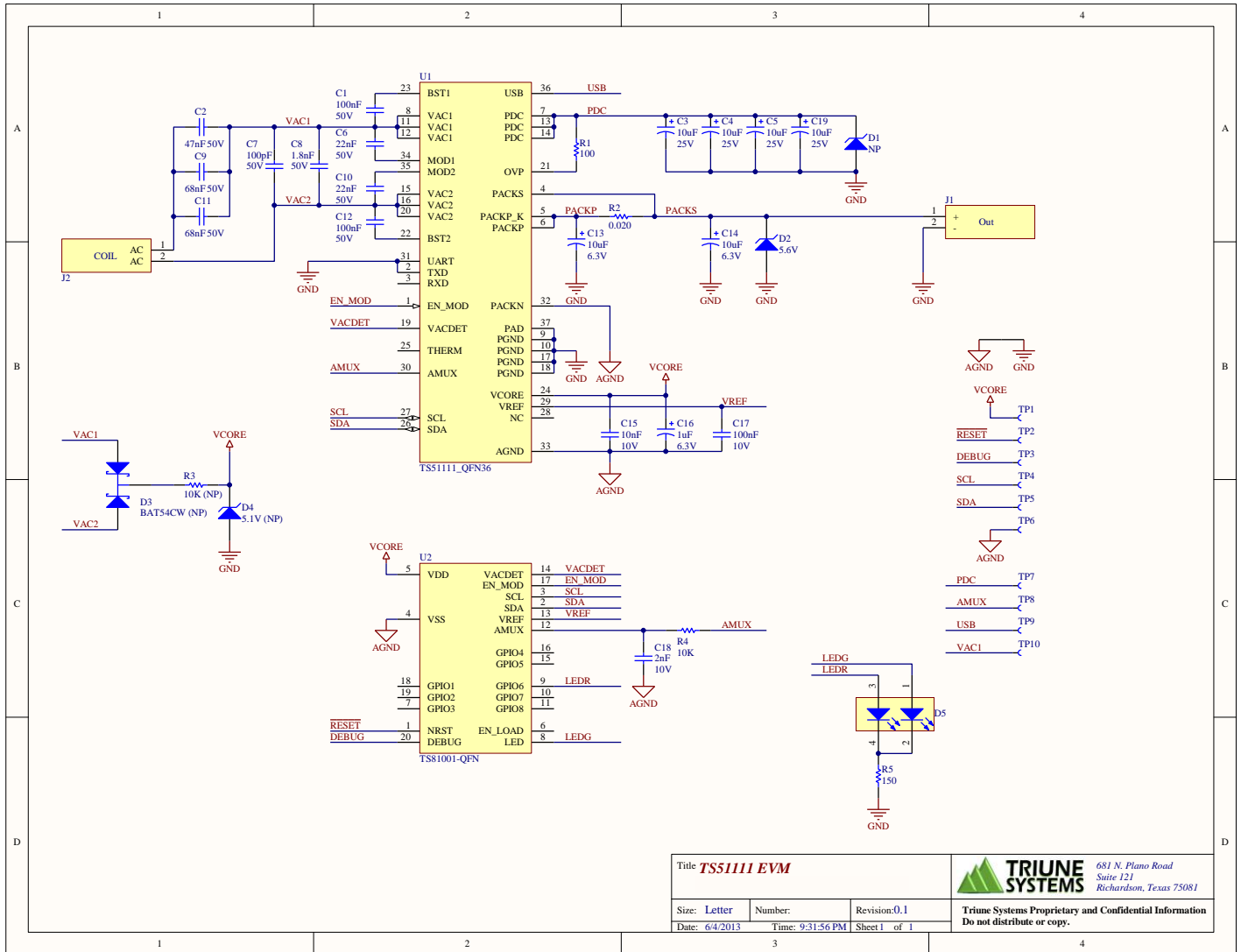
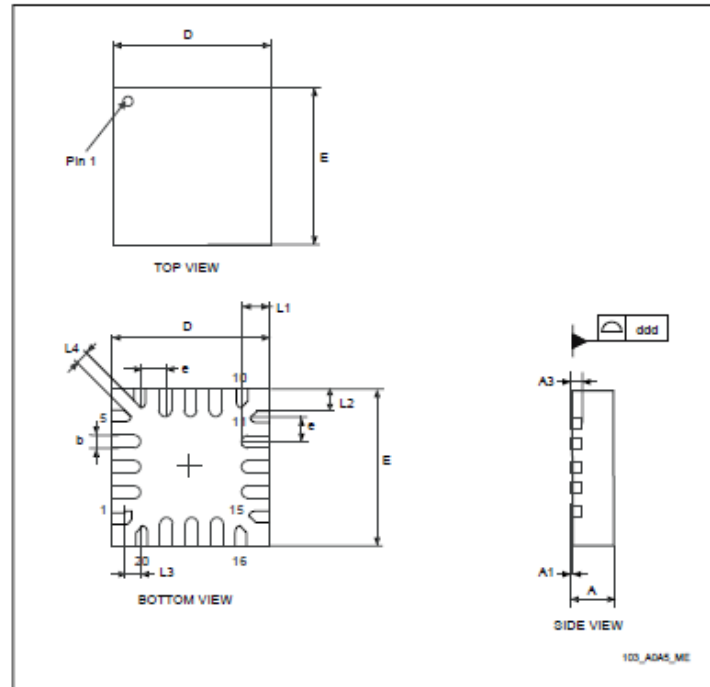


Figure 1: TS81001 Application Schematic

PACKAGE DIMENSIONS

20-lead ultra thin fine pitch quad flat no-lead package outline (3x3)



1. Drawing is not to scale.

20-lead ultra thin fine pitch quad flat no-lead package (3x3) mechanical data

Dim.	mm			inches ⁽¹⁾		
	Min	Typ	Max	Min	Typ	Max
D		3.000			0.1181	
E		3.000			0.1181	
A	0.500	0.550	0.600	0.0197	0.0217	0.0236
A1	0.000	0.020	0.050	0.0000	0.0008	0.0020
A3		0.152			0.0060	
e		0.500			0.0197	
L1	0.500	0.550	0.600	0.0197	0.0217	0.0236
L2	0.300	0.350	0.400	0.0118	0.0138	0.0157
L3		0.150			0.0059	
L4		0.200			0.0079	
b	0.180	0.250	0.300	0.0071	0.0098	0.0118

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- Hydrobromofluorocarbons (HBFCs)
- Hydrochlorofluorocarbons (HCFCs)
- Lead (Pb)
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- Polybrominated Diphenyl Ethers (PBDEs)

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