CMOSTEK

CMT2117A

Low-Cost 860 – 960 MHz OOK Transmitter

Features

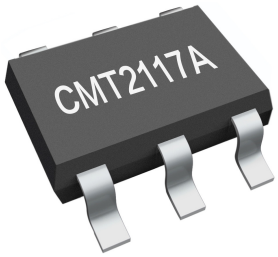
- Embedded EEPROM
  - Very Easy Development with RFPDK
  - All Features Programmable
- Frequency Range: 860 to 960 MHz
- OOK Modulation
- Symbol Rate: 0.5 to 30 ksps
- Deviation: 1.2 to 100 kHz
- 1-wire Interface
- Output Power: -10 to +13 dBm
- Supply Voltage: 1.8 to 3.6 V
- Current Consumption: 27 mA @ +10 dBm
- Sleep Current < 20 nA
- FCC / ETSI Compliant
- RoHS Compliant
- 6-pin SOT23-6 Package

Applications

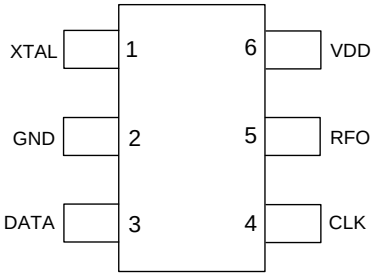
- Low-Cost Consumer Electronics Applications
- Home and Building Automation
- Remote Fan Controllers
- Infrared Transmitter Replacements
- Industrial Monitoring and Controls
- Remote Lighting Control
- Wireless Alarm and Security Systems
- Remote Keyless Entry (RKE)

Ordering Information

Part Number	Frequency	Package	MOQ
CMT2117A-ESR	Random	SOT23-6	3,000 pcs
CMT2117A-ESR8	868.00 MHz	SOT23-6	3,000 pcs
CMT2117A-ESR9	915.00 MHz	SOT23-6	3,000 pcs



SOT23-6



CMT2117A

Descriptions

The CMT2117A is an ultra low-cost, highly flexible, high performance, single-chip OOK transmitter for various 860 to 960 MHz wireless applications. It is part of the CMOSTEK NextGenRF™ family, which includes a complete line of transmitters, receivers and transceivers. The device only requires 1-wire interface for the external MCU or encoder to send in the data and control the transmission. An embedded EEPROM allows the frequency, output power and other features to be programmed into the chip using the CMOSTEK USB Programmer and RFPDK. Alternatively, in stock products of 868/915 MHz are available for immediate demands with no need of EEPROM programming. The CMT2117A uses a 1-pin crystal oscillator circuit with the required crystal load capacitance integrated on-chip to minimize the number of external components. The device can deliver up to +13 dBm output power. It operates from a supply voltage of 1.8 V to 3.6 V, consumes 27 mA when transmitting at +10 dBm output power, and only 20 nA when it is in sleep state, providing superior operation life for battery powered applications. The CMT2117A transmitter together with the CMT2217A receiver enables an ultra low cost RF link.

Typical Application

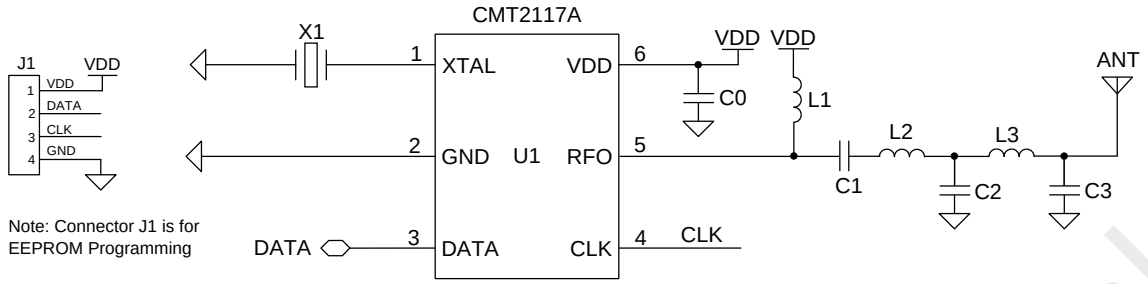


Figure 1. CMT2117A Typical Application Schematic

Table 1. BOM of 868 MHz Low-Cost Application

Designator	Descriptions	Value	Unit	Manufacturer
U1	CMT2117A, low-cost 860 – 960 MHz FSK transmitter	-	-	CMOSTEK
X1	±20 ppm, SMD32*25 mm crystal	26	MHz	EPSON
C0	±20%, 0402 X7R, 25 V	0.1	uF	Murata GRM15
C1	±5%, 0402 NP0, 50 V	68	pF	Murata GRM15
C2	±5%, 0402 NP0, 50 V	9.1	pF	Murata GRM15
C3	±5%, 0402 NP0, 50 V	8.2	pF	Murata GRM15
L1	±5%, 0603 multi-layer chip inductor	100	nH	Murata LQG18
L2	±5%, 0603 multi-layer chip inductor	8.2	nH	Murata LQG18
L3	±5%, 0603 multi-layer chip inductor	8.2	nH	Murata LQG18

Table 2. CMT2117A Pin Descriptions

Pin Number	Name	I/O	Descriptions
1	XTAL	I	26 MHz single-ended crystal oscillator input or External 26 MHz reference clock input
2	GND	I	Ground
3	DATA	IO	Data input to be transmitted or Data pin to access the embedded EEPROM
4	CLK	I	Clock pin to access the embedded EEPROM
5	RFO	O	Power amplifier output
6	VDD	I	Power supply input

Package Outline

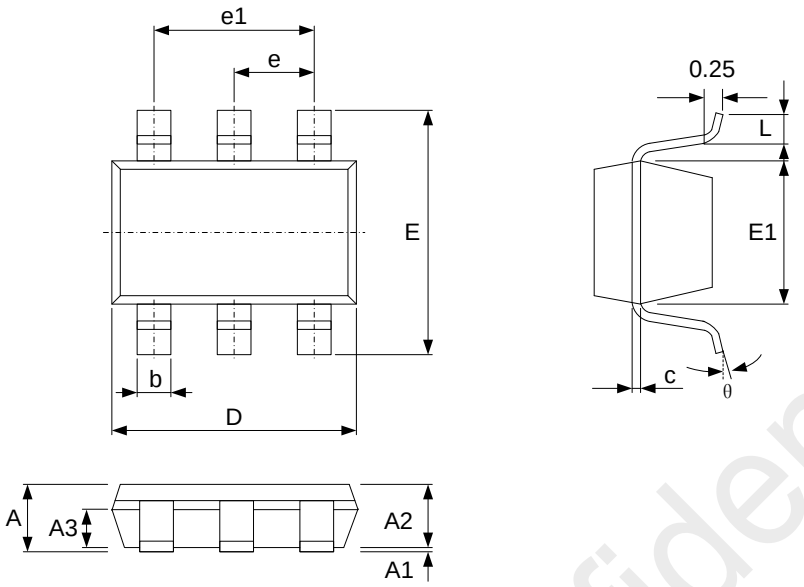


Figure 2. 6-Pin SOT23-6

Table 3. 6-Pin SOT23-6 Package Dimensions

Symbol	Size (millimeters)		
	Min	Typ	Max
A	—	—	1.35
A1	0.04	—	0.15
A2	1.00	1.10	1.20
A3	0.55	0.65	0.75
b	0.38	—	0.48
C	0.08	—	0.20
D	2.72	2.92	3.12
E	2.60	2.80	3.00
E1	1.40	1.60	1.80
e	0.95 BSC		
e1	1.90 BSC		
L	0.30	—	0.60
θ	0	—	8°