

DESCRIPTION

PT4450 is a high performance OOK/ASK transmitter for the Remote Keyless Entry (RKE) systems. It consists of a SAW oscillator, power amplifier, and one-shot circuit which control the SAW oscillator and power amplifier

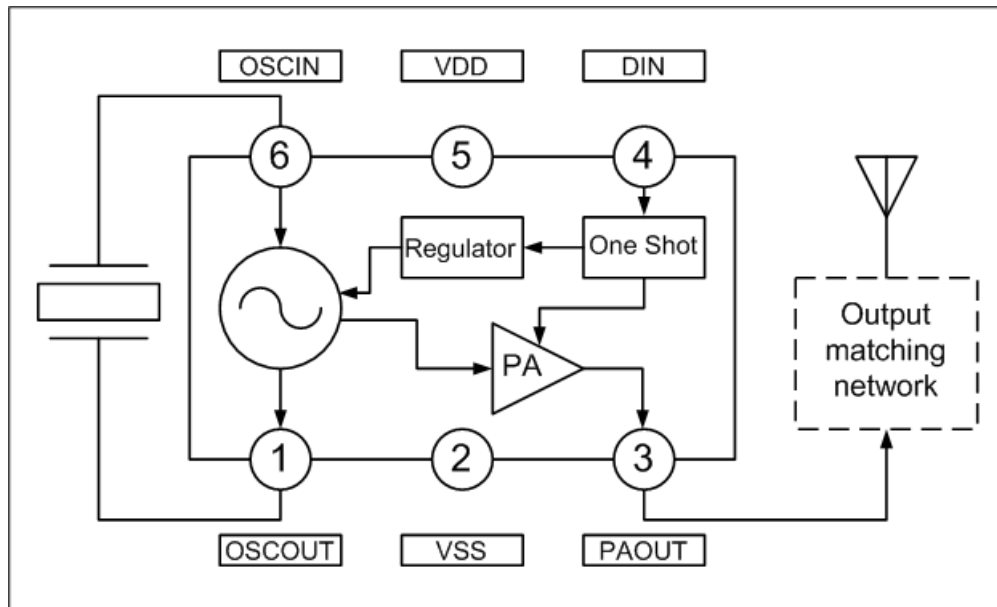
APPLICATIONS

- Keyless entry systems
- Remote control systems
- Garage door openers
- Alarm systems
- Security systems
- Wireless sensors

FEATURES

- Highly integrated OOK/ASK transmitter
- High output power, 3 V/+10 dBm/18 mA
- Low supply voltage (2.2 V to 3.6V operation range)
- Low external component cost.
- SAW-based oscillator, frequency range from 250 MHz to 500 MHz
- On-chip one-shot circuit
- 50 dB RF on/off ratio
- Available in 6-pin, SOT-23 package

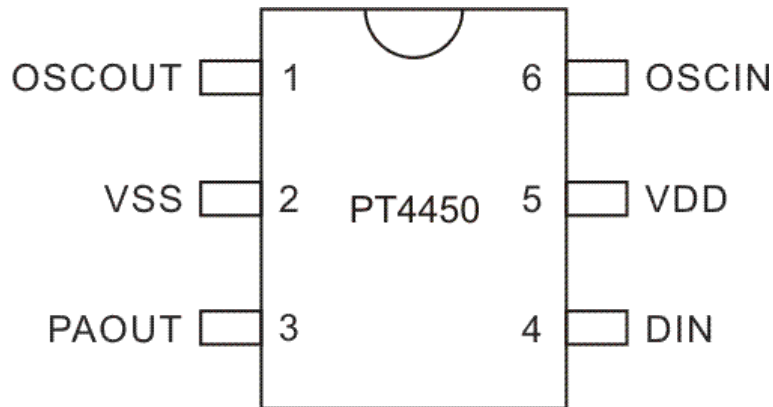
BLOCK DIAGRAM



ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4450	6 Pins, SOT-23	PT4450

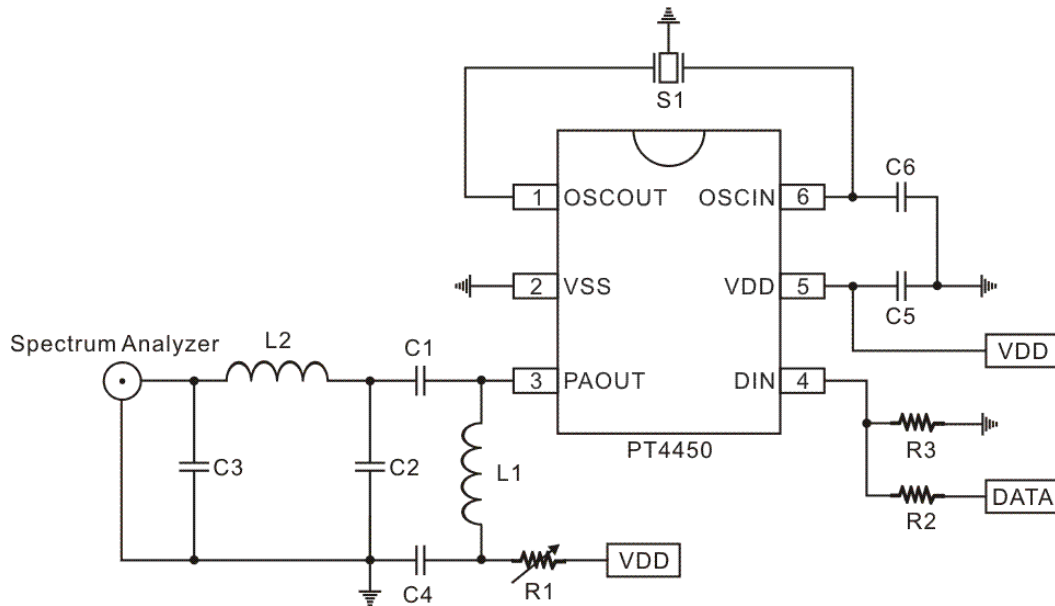
PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
OSCOUT	O	Oscillator output	1
VSS	G	Ground connection	2
PAOUT	O	Power amplifier output	3
DIN	I	Data input, it will also be used to enable the chip	4
VDD	P	Power supply	5
OSCIN	I	Oscillator input	6

TESTING CIRCUIT



Component	Values		Unit
	315 MHz Band	434 MHz Band	
S1(See note)	315	434	MHz
R1(See note)	0	0	Ω
R2	10 K	10 K	Ω
R3	470 K	470 K	Ω
L1	180 n	180 n	H
L2	27 n	27 n	H
C1	220 p	220 p	F
C2	12 p	4.7 p	F
C3	22 p	12 p	F
C4, C5	100 n	100 n	F
C6	1 p	1 p	F

Notes:

1. S1 is a SAW resonator.
2. R1 for output power control.

ABSOLUTE MAXIMUM RATINGS

 ($V_{SS} = 0\text{ V}$)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS}-0.3$ to $V_{SS} + 5.0$	V
Operating temperature	T_{opr}	-40 to +85	°C
Storage temperature	T_{stg}	-65 to +150	°C
Soldering temperature	T_{SLD}	255	°C
Soldering time	t_{SLD}	10	Sec.

RECOMMEND OPERATING CONDITIONS

 ($V_{SS} = 0\text{ V}$)

Parameter	Symbol	Rating			Unit
		Min.	Typ.	Max.	
Supply voltage range	V_{DD}	2.2	3.0	3.6	V
Operating temperature	T_A	-40	25	85	°C

ELECTRICAL CHARACTERISTICS

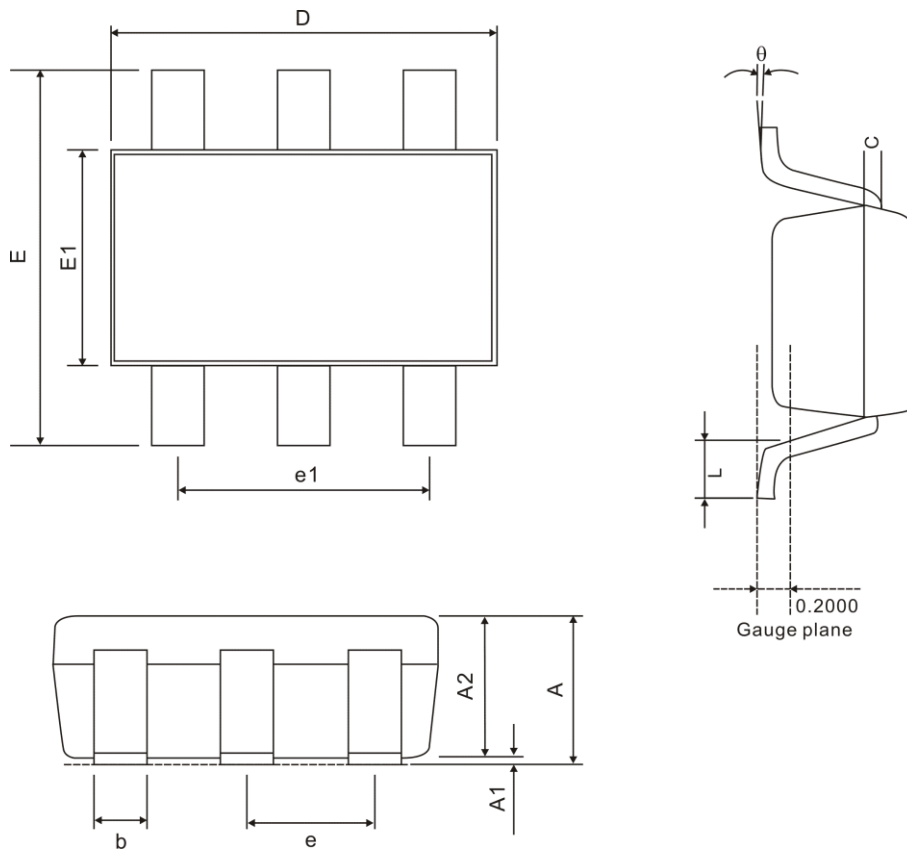
 (Unless otherwise specified, $V_{DD} = 3.0\text{ V}$, $V_{SS} = 0\text{ V}$, $DIN = 3.0\text{ V}$, $Temp = 27^\circ\text{C}$, $f_{RF} = 434\text{ MHz}$)

Parameter	Symbol	Condition	Rating			Unit
			Min.	Typ.	Max.	
DC						
Supply voltage	V_{DD}		2.2	3.0	3.6	V
Operating current (See note)	I_{DD}	DIN=High(CW mode); $P_{OUT} = 10\text{ dBm}$	16	-	18	mA
Standby current	$I_{standby}$	DIN = Low; $T_{DELAY} > 50\text{ ms}$	-	-	1	μA
RF						
Frequency range	f_{RF}		250	-	500	MHz
Power amplifier output power(See note)	P_{out}		-	+10	-	dBm
RF power on/off ratio	P_{EXT}		-	50	-	dB
Phase noise	P_{NOISE}	10 KHz offset	-	-100	-	dBc/Hz
Harmonics (See note)	P_{HARM}	$2x/3x f_{RF}$	-	-40	-	dBc
Data Input and One Shot						
Data rate	D_{RATE}		0.5	2	50	Kbps
Start up time	T_{ON}		-	-	200	μs
One shot delay time	T_{DELAY}		50	-	-	ms

Note: Depend on power amplifier output matching.

PACKAGE INFORMATION

6 PINS, SOT-23



Symbol	Min.	Nom.	Max
A	-	-	1.45
A1	0.00	-	0.15
A2	0.90	1.15	1.30
b	0.30	-	0.50
c	0.08	0.13	0.20
D	2.90 BSC		
E	2.80BSC		
E1	1.60BSC		
e	0.95BSC		
e1	1.90BSC		
L	0.30	0.45	0.60
θ	0°	-	8°

Notes:
 1.Refer to JEDEC MO-178
 2.Unit: mm

IMPORTANT NOTICE

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PTC cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a PTC product. No circuit patent licenses are implied.

Princeton Technology Corp.
2F, 233-1, Baociao Road,
Sindian Dist., New Taipei City 23145, Taiwan
Tel : 886-2-66296288
Fax: 886-2-29174598
<http://www.princeton.com.tw>