

Product Specification

XBLW LM567

General Tone Decoding Circuit

WEB | www.xinboleic.com

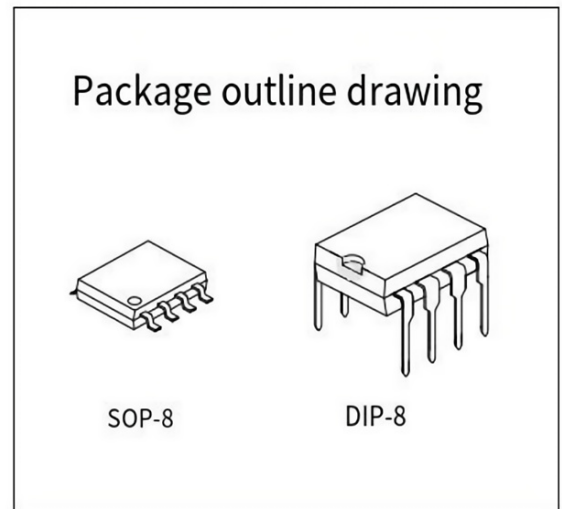


Description

LM567 is a general tone decoding circuit, when the input signal frequency falls within a given passband, the phase-locked loop locks the signal, while controlling the output end output low level, otherwise output high level. This circuit can be used as a generator, modulator and demodulator; Widely used in the communication, remote control, measurement, frequency, monitoring, and other fields.

Feature:

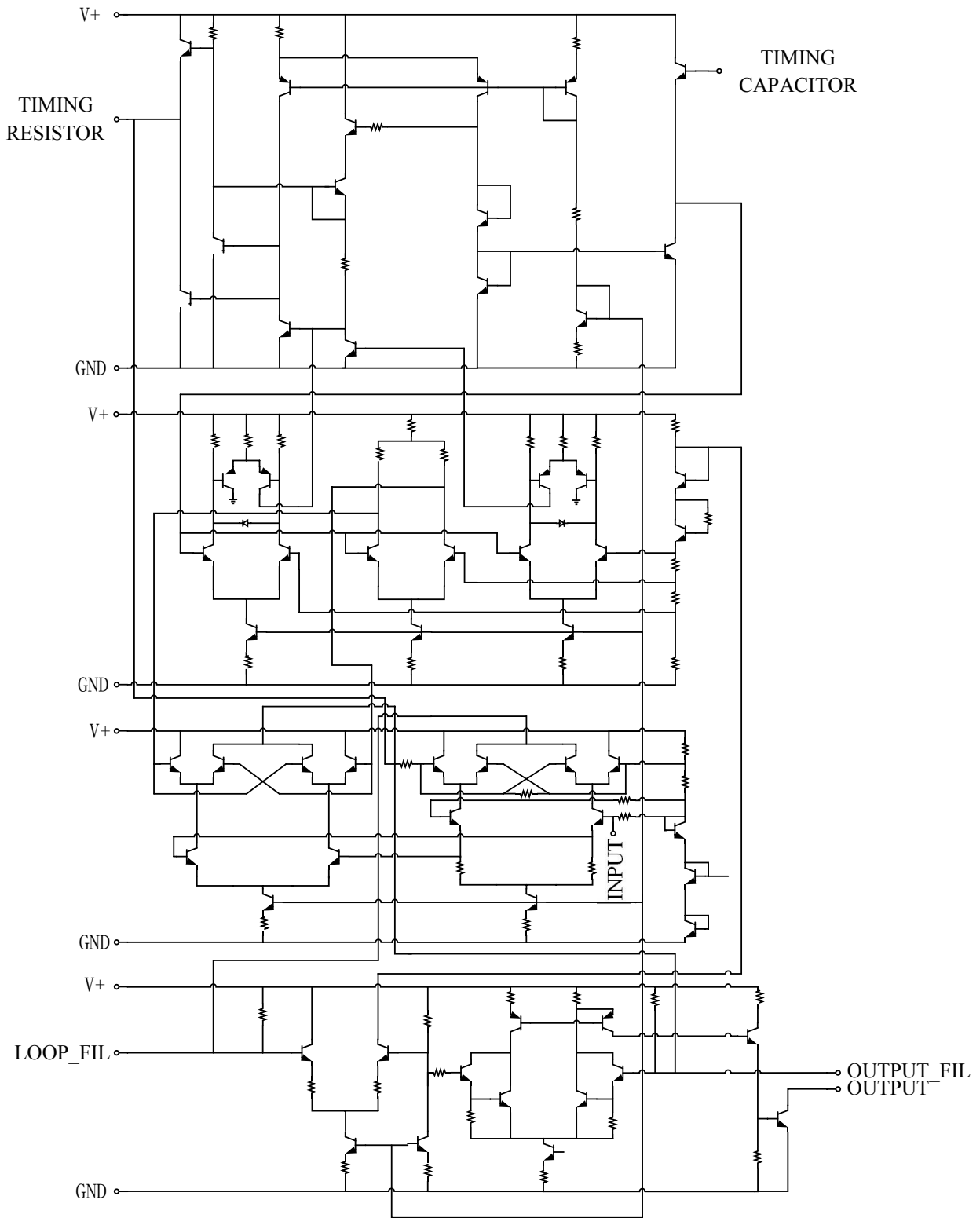
- Frequency bandwidth tunable range: 0 ~ 14%
- High out-of-band signals and noise suppression
- High central frequency stability
- Center frequency adjustment range: 0.01 Hz ~ 500 KHZ
- Frequency can be adjusted in the 20:1 range by using an external resistance
- Output compatible with logic circuit, the current irrigation can bear 100 ma
- Packaging format DIP-8 / SOP-8



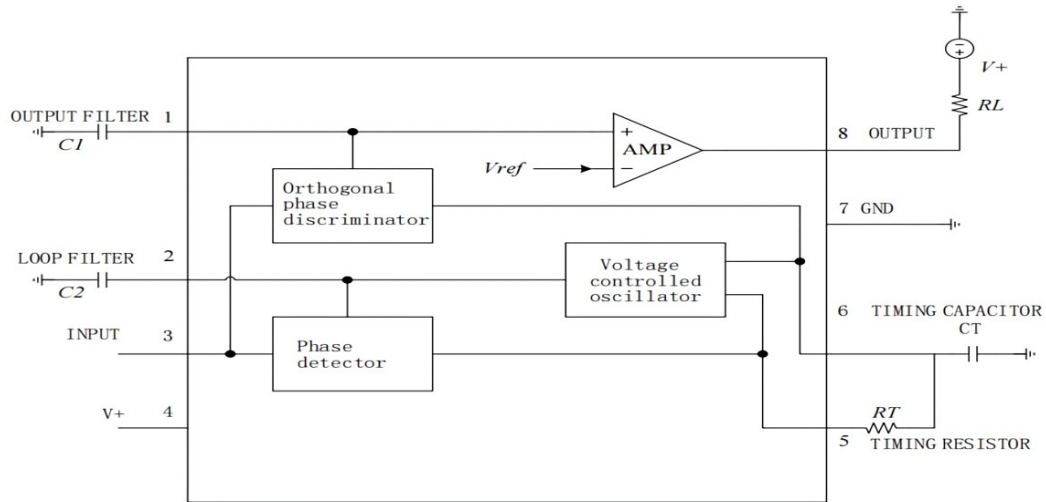
Ordering Information

| Product Model | Package Type | Marking | Packing | Packing Qty |
|---------------|--------------|---------|---------|--------------|
| XBLW LM567CN | DIP-8 | LM567CN | Tube | 2000Pcs/Reel |
| XBLW LM567CM | SOP-8 | LM567CM | Tape | 2500Pcs/Reel |
| | | | | |
| | | | | |
| | | | | |

Functional block diagram



Pin arrangement diagram



Pin descriptions and structure schematic diagram

| Pin | Symbols | Features | Pin | Symbols | Features |
|-----|---------------|---------------|-----|------------------|------------------|
| 1 | OUTPUT FILTER | Output filter | 8 | OUTPUT | Logic output |
| 2 | LOOP FILTER | Loop filter | 7 | GND | Ground to earth |
| 3 | INPUT | Input signal | 6 | TIMING CAPACITOR | Timing capacitor |
| 4 | V+ | Power supply | 5 | TIMING RESISTOR | Timing resistor |

And the parameters of the limit

Tamb=25°C unless otherwise specified

| Parameter name | symbol | conditions | rating | Units | |
|---------------------------------|----------|------------|--------------|-------|----|
| Supply voltage | VCC | -- | 9 | V | |
| PIN8 voltage | V8 | -- | 15 | V | |
| PIN3 voltage | V3 | -- | -10 ~ V4+0.5 | V | |
| Working environment temperature | Tamb | -- | 0 ~ 70 | °C | |
| Storage temperature | Tstg | -- | - 65 ~ 150 | °C | |
| Thermal resistance | Theta JA | DIP8 | 110 | °C/W | |
| | | SOP8 | 160 | | |
| Welding temperature | TL | 10 S | DIP | 250 | °C |
| | | | SOP | 260 | °C |

Note: The maximum power consumption is a function of TJ (max), θ JA and Tamb, and the maximum allowable power consumption at any allowable ambient temperature is PD= (TJ (max) – Tamb)/θJA.

Working at the ultimate maximum junction temperature TJ (150°C) affects the reliability.

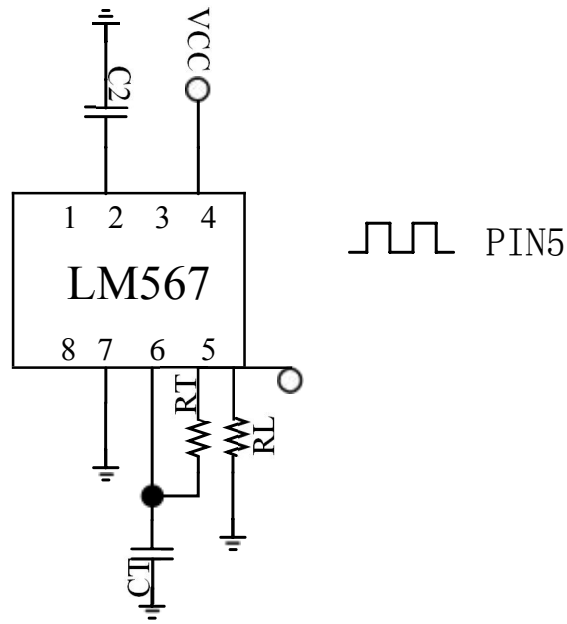
Electrical characteristics

Ac parameters

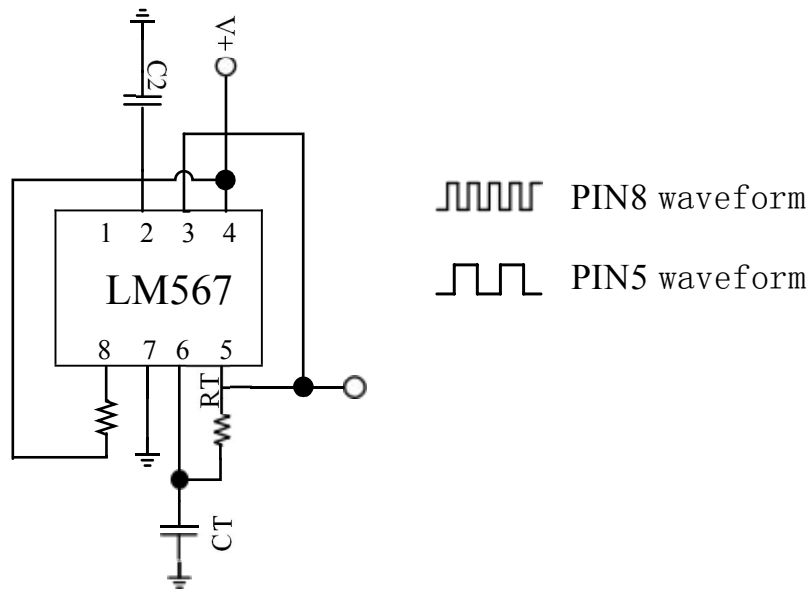
(Unless otherwise specified, Tamb = 25°C and VCC = 5 V)

| Parameter name | Symbol | Test conditions | MIN | TYP | MAX | Unit |
|--|-------------------|-----------------------|------|---------|-----|---------|
| Supply voltage range | VCC | -- | 4.75 | 5 | 9 | V |
| Static current | IQ | RL=20k | -- | 7 | 10 | mA |
| Dynamic current | IA | RL=20k | -- | 12 | 15 | mA |
| Input resistor | RIN | -- | 15 | 20 | -- | K Ω |
| Minimum catchable input voltage | VI_L | IL=100mA,fi=fo | -- | 20 | 25 | mV |
| Max no output input voltage | VI_H | IL=100mA,fi=fo | 10 | 15 | -- | mV |
| Maxoutofsyncbandsignal ratio | -- | -- | -- | 6 | -- | dB |
| Minimum input signal to bandwidth noise ratio | -- | Bn=140kHz | -- | - 6 | -- | dB |
| Maximum capture bandwidth | BW | -- | 10 | 14 | 18 | % of fo |
| Maximum capture bandwidth deviation | | -- | -- | 2 | 3 | % of fo |
| Temperature coefficient of maximum capture bandwidth | | -- | -- | ± 0.1 | -- | % / °C |
| Maximum capture bandwidth voltage factor | | 4.75 V to 6.75 V | -- | ± 1 | -- | %/V |
| Maximum center frequency | fo | -- | 100 | 500 | -- | kHz |
| Center frequency temperature coefficient | | 0 °C ~ 70 °C | -- | 35± 60 | -- | ppm/°C |
| | | And 55 °C ~ 125 °C | -- | 35± 140 | -- | |
| Center frequency voltage coefficient | | 4.75 V to 6.75 V | -- | 0.4 | 2 | %/V |
| | 4.75 V ~ 9 V | -- | -- | 2 | | |
| Maximum switch loop ratio | -- | -- | -- | fo/20 | -- | -- |
| Output leakage | I _{LEAK} | V ₈ =15V | -- | 0.01 | 25 | uA |
| Output saturation voltage | V _{SAT} | I ₈ =30mA | -- | 0.2 | 0.4 | V |
| | | I ₈ =100mA | -- | 0.6 | 1 | |
| Output drop time | t _F | IL=100mA | -- | 30 | 30 | ns |
| Output rise time | t _R | IL=100mA | -- | 150 | 150 | ns |

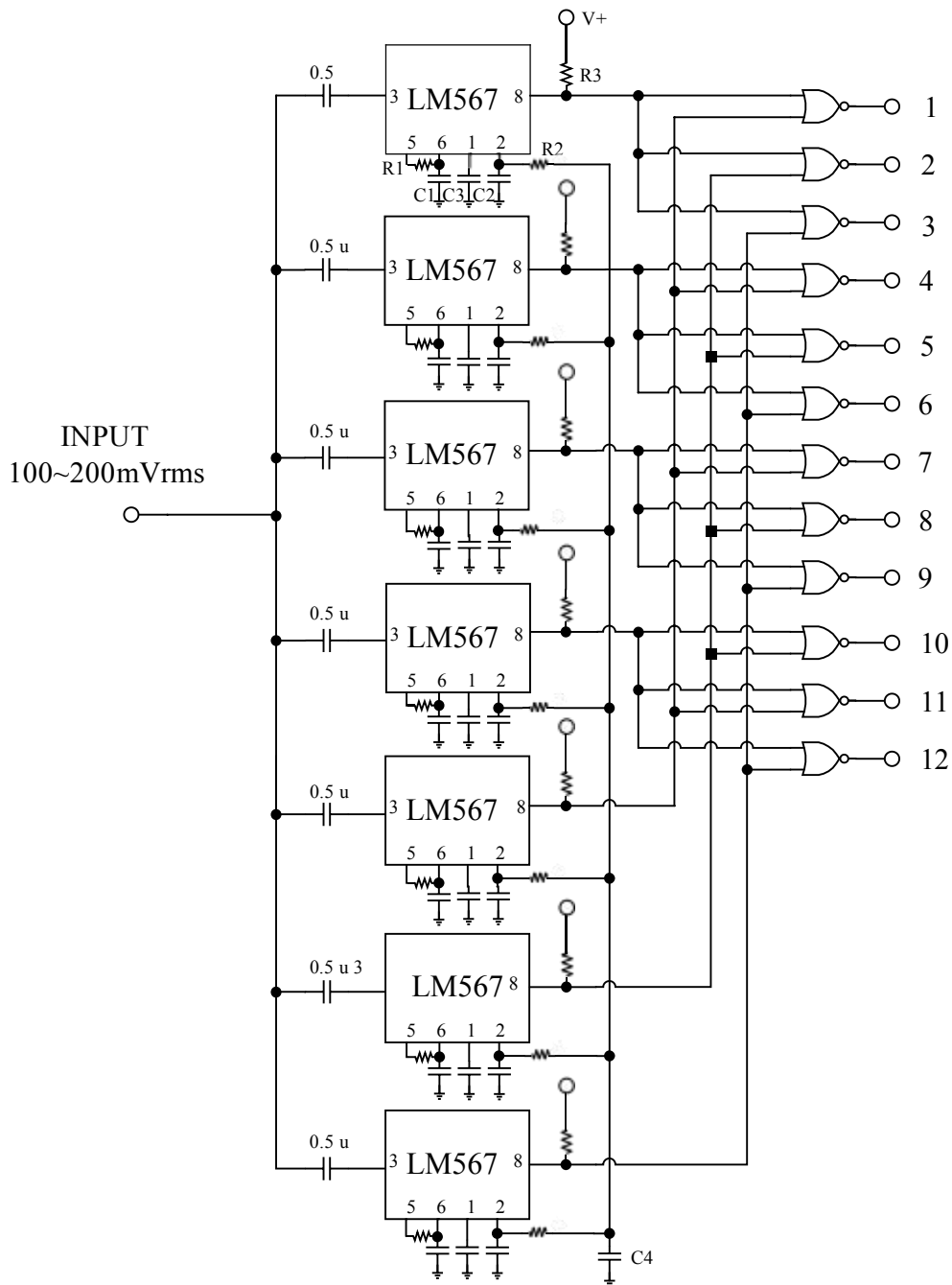
Apply the circuit



Precision square wave generator



Phase-locked loop dual-frequency precise oscillator



Typical applications

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