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SP4633

1GHz ÷ 64 NON SELF OSCILLATING PRESCALER

The SP4633 ÷ 64 prescaler is one of GPS' range of high speed dividers for consumer frequency synthesis and measurement systems. It has a low supply current, giving reduced dissipation and operating temperatures in an 8-pin plastic DIL package. Spurious radiation has been reduced from all stages.

The SP4633 incorporates a two-stage preamplifier which gives good low frequency sensitivity and prevents self-oscillation.

FEATURES

- Does Not Self Oscillate
- Low Supply Current
- Low Radiation
- Input Wideband Amplifier
- High Input Sensitivity
- High Input Impedance
- Balanced ECL Outputs
- Electrostatic Protection †

† ESD precautions must be observed

ABSOLUTE MAXIMUM RATINGS

| | |
|-----------------------------|-----------------|
| Supply voltage, V_{CC} | +7V |
| Input voltage | 2.5V p-p |
| Storage temperature | -55°C to +150°C |
| Operating temperature range | 0°C to +80°C |

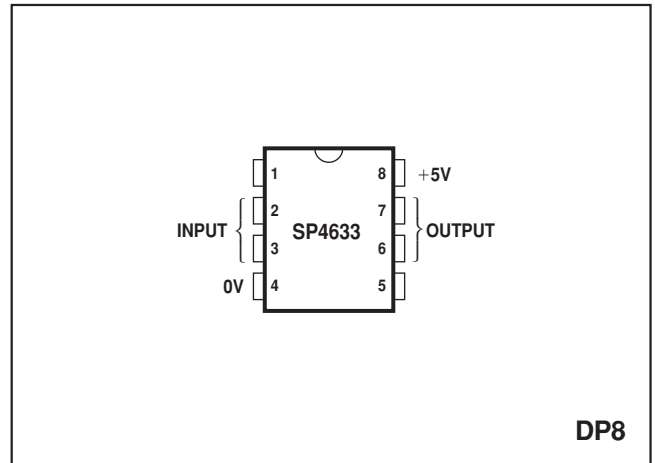


Fig 1. Pin connections - top view

ORDERING INFORMATION

SP4633 NA DP

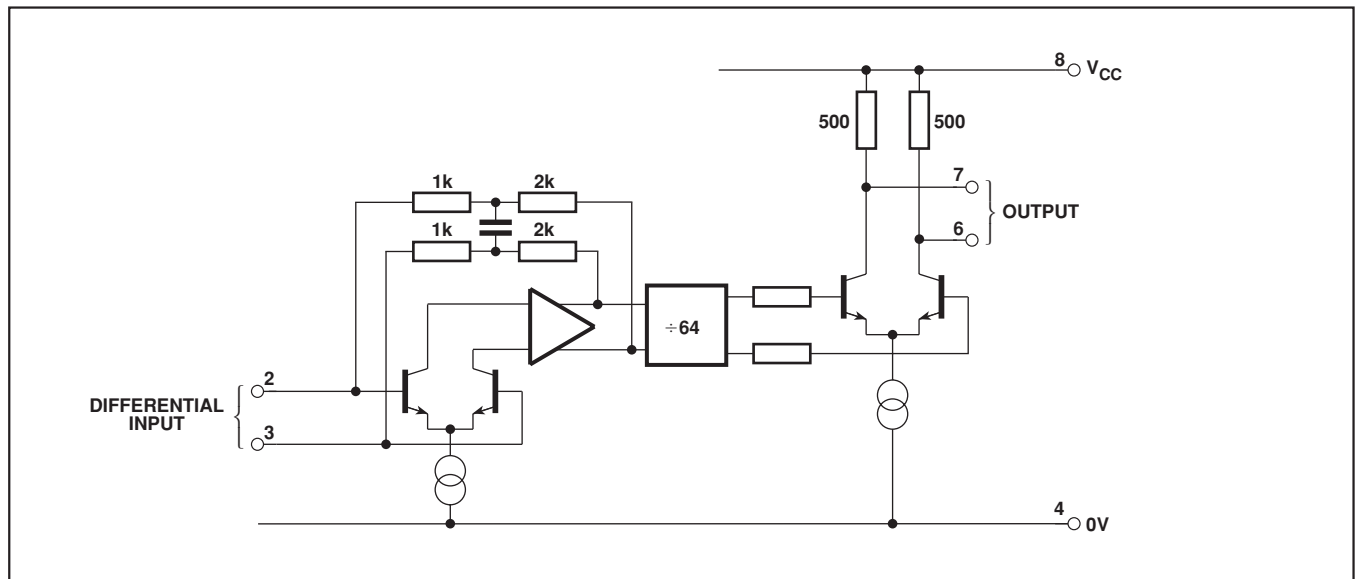


Fig. 2 SP4633 block diagram

SP4633

ELECTRICAL CHARACTERISTICS

These characteristics are guaranteed over the following conditions (unless otherwise stated):

$T_{AMB} = 0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$, $V_{CC} = 4.5\text{V}$ to 5.5V (Test circuit see Fig. 3)

| Characteristic | Pin | Value | | | Units | Conditions |
|------------------------------------|-----|-------|------|------|-------|--|
| | | Min. | Typ. | Max. | | |
| Supply current, I_{CC} | 8 | | 32 | 45 | mA | $V_{CC} = +5\text{V}$ RMS sinewave (50Ω system) |
| Input sensitivity | 2,3 | | 1.5 | 5 | mV | |
| 50MHz to 400MHz | | | 2 | 7.5 | mV | |
| 600MHz | | | 3 | 10 | mV | |
| 800MHz | | | 5 | 15 | mV | |
| 1000MHz | | | | | | |
| Input overload | 2,3 | 300 | | | mV | 50MHz to 1GHz operating frequency See Fig. 6 |
| Input impedance | 2,3 | | 50 | | Ω | |
| | | | 2 | | pF | |
| Output voltage, no load | 6 | 0.8 | | | V p-p | } $f_{IN} = 1\text{GHz}$, $V_{CC} = +5\text{V}$ |
| | 7 | 0.8 | | | V p-p | |
| Output voltage with load as Fig. 3 | 6 | 0.55 | | | V | |
| | 7 | 0.55 | | | V | |
| Output impedance | 6 | | 0.5 | | kΩ | |
| | 7 | | 0.5 | | kΩ | |
| Output imbalance | 6,7 | | 0.1 | | V | |

NOTE

The difference between the maximum input sensitivity and minimum overload voltage is the guaranteed dynamic range. Input signal levels should be maintained within these limits at all frequencies.

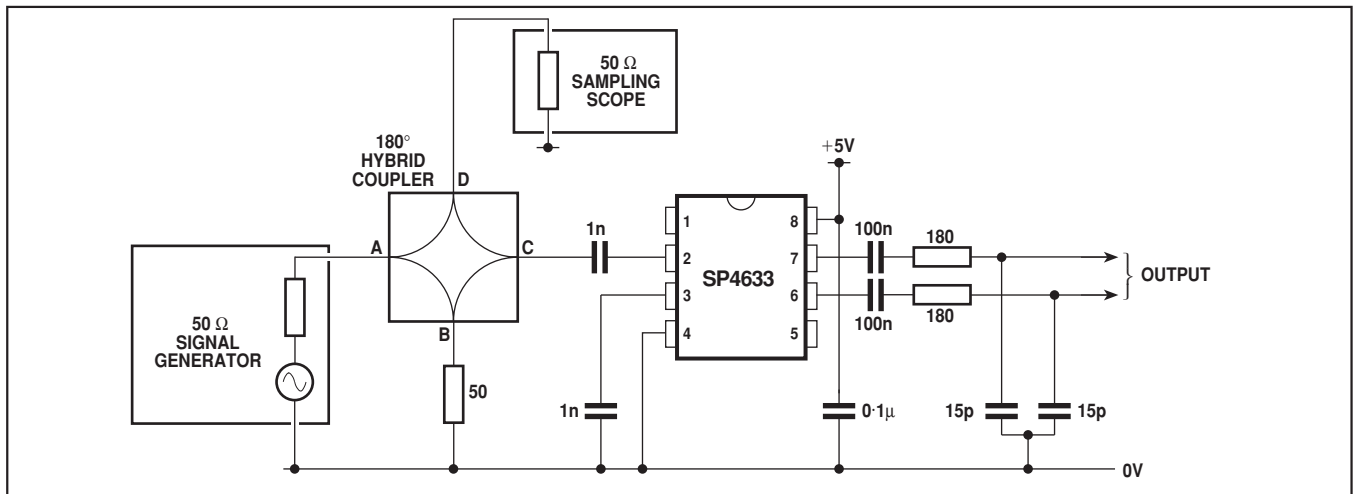


Fig. 3 Test circuit

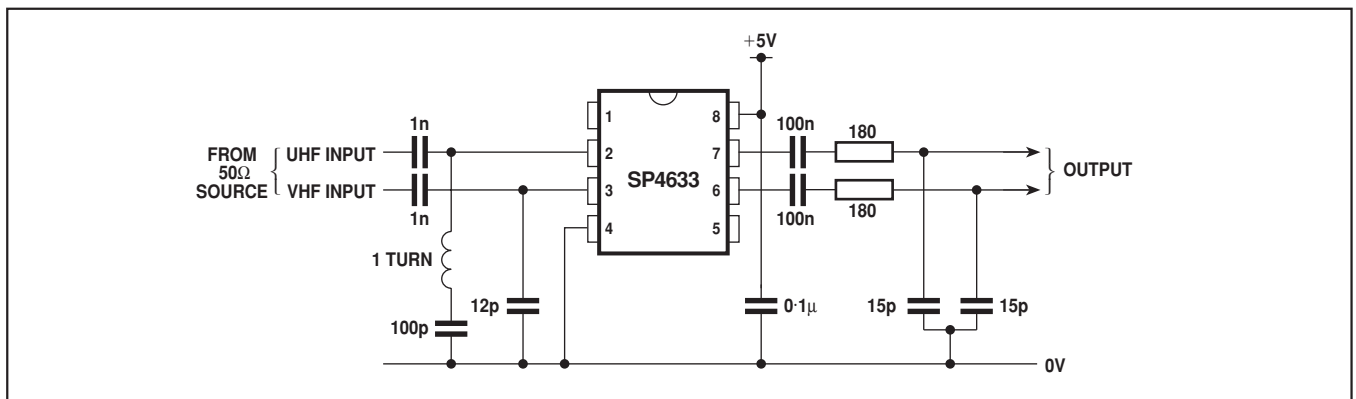


Fig. 4 Application circuit

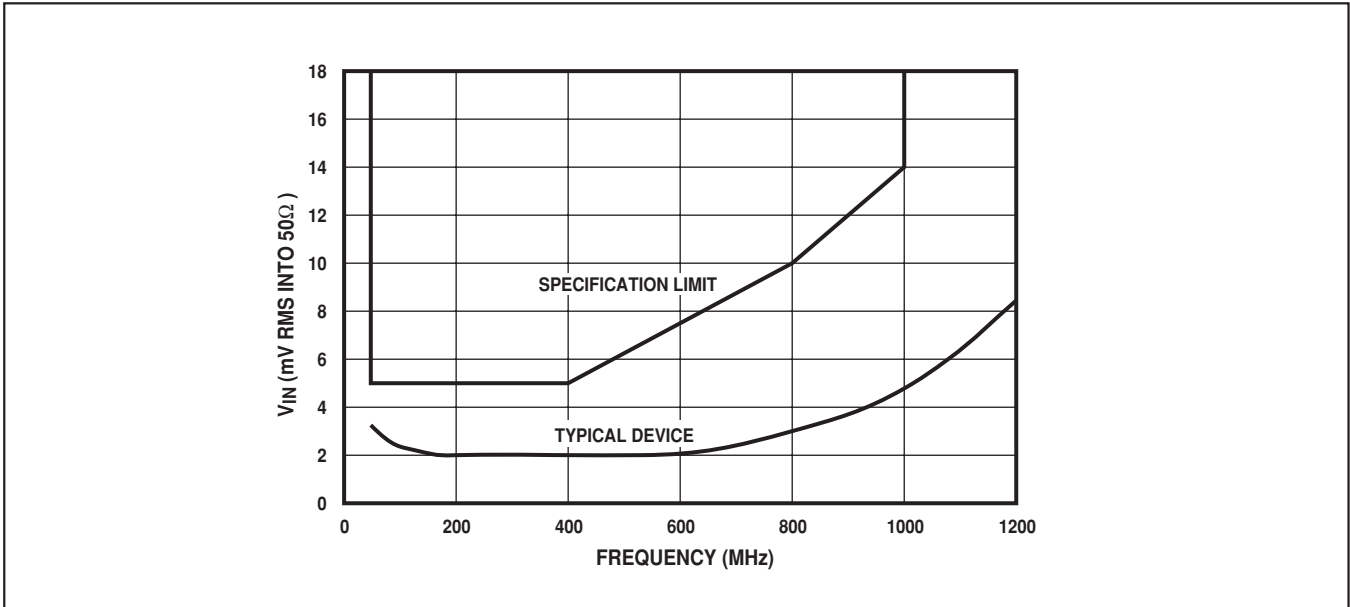


Fig. 5 Typical input sensitivity

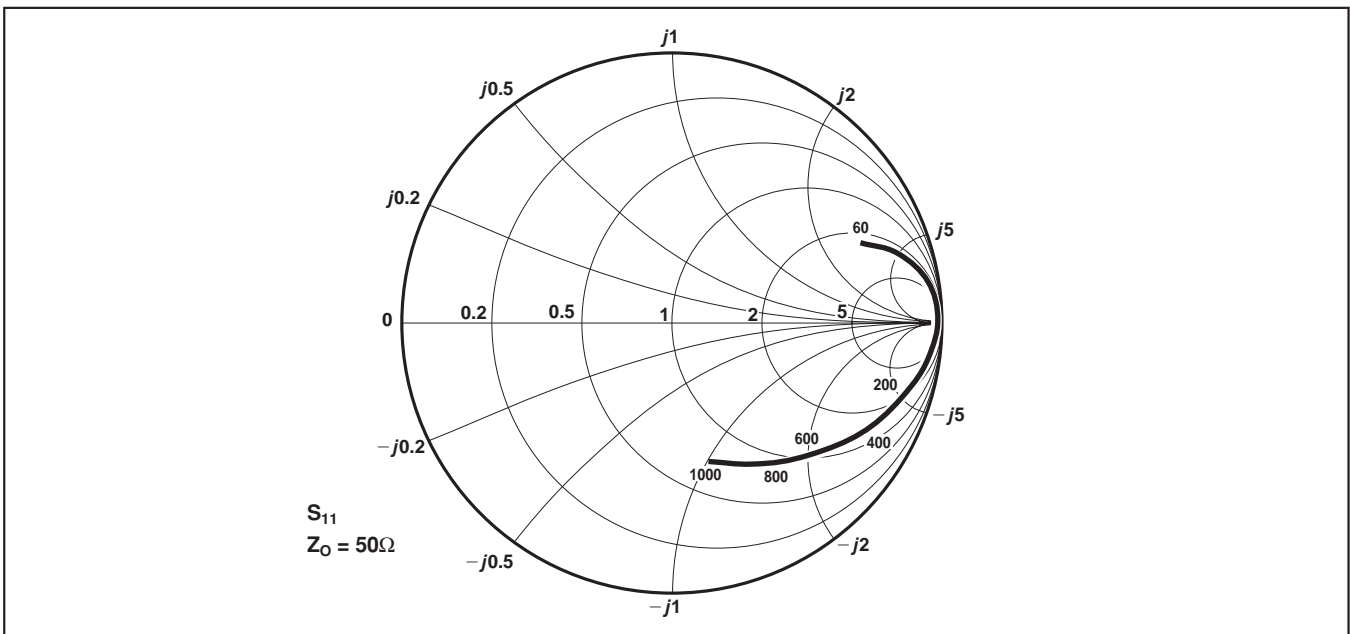


Fig. 6 Typical input impedance (frequencies in MHz)



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