

Series OS936-15

- (1.0 ~ 125)MHz
- stability from $\pm 0.005\text{ppm}$
- sine wave, CMOS output
- excellent phase noise from SC cut crystal
- ageing $\pm 0.1\text{ppm}$ max. first year

Applications:

- telecomms systems
- satellite systems
- base stations



Standard options:

| | | | |
|------------------------------|---|---|------------------------------|
| frequency range: | _____ (1.0 ~ 125)MHz _____ | | |
| accuracy codes: | _____ (A) _____ | _____ (B) _____ | _____ (C) _____ |
| temperature tolerance | $\pm 0.005\text{ppm}$ | $\pm 0.01\text{ppm}$ | $\pm 0.02\text{ppm}$ |
| temperature range | (0 +50) $^{\circ}\text{C}$ | (-10 +60) $^{\circ}\text{C}$ | (-20 +70) $^{\circ}\text{C}$ |
| output codes: | _____ (S) _____ | _____ (L) _____ | |
| output | sine wave, 0dBm into 50 Ω harmonics -30dBc max. | CMOS 15pF, 45% ~ 55% <2ns max. rise and fall | |
| supply voltage codes: | _____ (V1)* _____ | _____ (V2)* _____ | _____ (V3)* _____ |
| supply voltage | +3.3Vd.c. | +5.0Vd.c. | +12.0Vd.c. |
| trim reference option* | +3.0Vd.c. | +4.5Vd.c. | +4.5Vd.c. |

* add suffix (R) for V_{ref} output on pin #2

Generic specification:

| | |
|---------------------------------------|--|
| stability: | |
| against supply voltage change | $\pm 0.002\text{ppm}$ max. for $V_{\text{cc}} \pm 5\%$ |
| against load change | $\pm 0.002\text{ppm}$ max. for load $\pm 10\%$ |
| ageing short term | $\pm 0.0005\text{ppm}$ max. per day after 30 days continuous operation |
| ageing long term | $\pm 0.1\text{ppm}$ max. first year |
| voltage trim V_t | $\pm 0.5\text{ppm}$ min. typical, linearity $\pm 5\%$ |
| trim input impedance | 100K Ω min. |
| power supplies: | |
| supply voltage V_{cc} | +3.3Vd.c. +5.0Vd.c. +12.0Vd.c. |
| start up current at min. temp. range | 900mA max. 600mA max. 300mA max. |
| quiescent current at max. temp. range | 320mA max. 220mA max. 120mA max. |
| warm up time | 5 minutes max. to within 0.1ppm of nominal |
| insulation resistance | 500Meg Ω min., 100Vd.c. |
| phase noise: | |
| single sideband, 1Hz bandwidth | -110dBc/Hz, $f_o + 10\text{Hz}$ -135dBc/Hz, $f_o + 100\text{Hz}$ -155dBc/Hz, $f_o + 1\text{kHz}$ |
| temperature: | |
| operating range | (0 +50) $^{\circ}\text{C}$ (-10 +60) $^{\circ}\text{C}$ (-20 +70) $^{\circ}\text{C}$ |
| storage range | (-40 +125) $^{\circ}\text{C}$ (-40 +125) $^{\circ}\text{C}$ (-40 +125) $^{\circ}\text{C}$ |

Environmental conditions:

mechanical shock: MIL standard 202F, method 213, condition J

thermal shock: MIL standard 202F, method 107, condition A

vibration: MIL standard 202F, method 204, condition B

solderability: 5 seconds max. at +230°C, 3 seconds max at +350°C

Marking:

frequency, date code, serial number on high temperature metalised polyester label

Ordering code:

standard options: OS936-15 A S V2* - 10.00M

OS936-15 = series generic code

A temp. tol. and temp. range code: A = $\pm 0.005\text{ppm}(0 + 50)^\circ\text{C}$

S output code: S = sine wave output, 0dBm into 50Ω

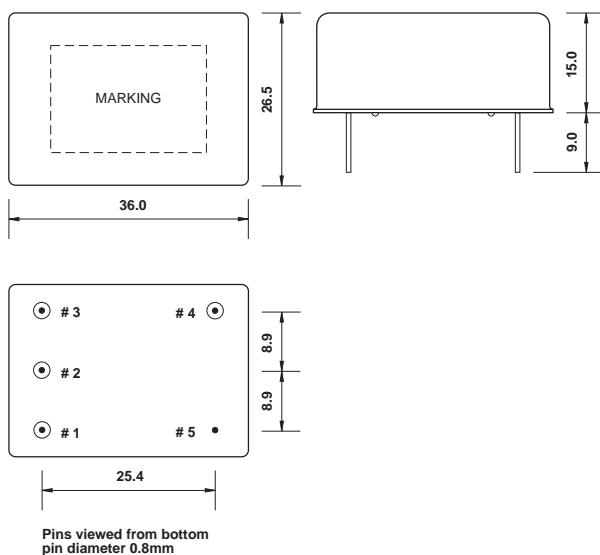
V2* supply voltage code: V2 = +5Vd.c. supply

*Add suffix (R) for V_{ref} output on pin #2

10.00M output frequency: 10.00M = 10.000MHz

custom specification: part number issued with custom specification and drawing

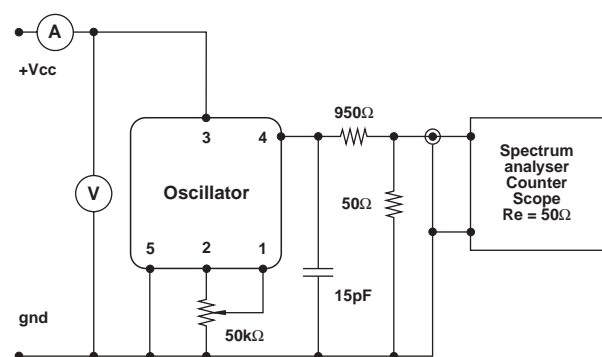
Dimensions(mm):



Pin connections:

- #1 trim
- #2 n.c. or trim reference voltage*
- #3 +V_{cc}
- #4 output
- #5 ground/case

Test circuit, CMOS load:



test circuit includes a 20:1 step down into a matched 50Ω load