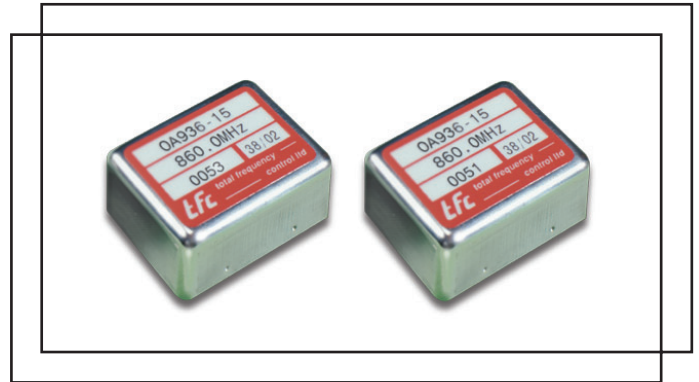


## Series OA936-15 1.0MHz ~ 1GHz

- # sine wave, CMOS output
- #  $\pm 0.05\text{ppm}$  accuracy
- # low phase noise
- # custom designs



### Standard options:

<b>frequency range:</b>	1.0MHz ~ 1GHz		
<b>accuracy codes:</b>	(A)	(B)	(C)
temperature tolerance	$\pm 0.05\text{ppm}$	$\pm 0.1\text{ppm}$	$\pm 0.2\text{ppm}$
temperature range	(0 +50) $^{\circ}\text{C}$	(-10 +60) $^{\circ}\text{C}$	(-20 +70) $^{\circ}\text{C}$
<b>output codes:</b>	(S)	(L)	
output	sine wave, 0dBm into 50 $\Omega$ harmonics -30dBc max.	CMOS 15pF, 45% ~ 55% <2ns max. rise and fall	
<b>supply voltage codes:</b>	(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  $V_{\text{ref}}$  output on pin #2

### Generic specification:

<b>stability:</b>	
against supply voltage change	$\pm 0.02\text{ppm}$ max. for $V_{\text{CC}} \pm 5\%$
against load change	$\pm 0.02\text{ppm}$ max. for load $\pm 10\%$
aging short term	$\pm 0.005\text{ppm}$ max. per day after 30 days continuous operation
aging long term	$\pm 1.0\text{ppm}$ max. first year
voltage trim $V_t$	$\pm 10.0\text{ppm}$ min. typical, linearity $\pm 5\%$
trim input impedance	100K $\Omega$ min.
<b>power supplies:</b>	
supply voltage $V_{\text{CC}}$	+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 $\Omega$ min., 100Vd.c.
<b>phase noise:</b>	
single sideband, 1Hz bandwidth	-90dBc/Hz, $f_o + 10\text{Hz}$ -125dBc/Hz, $f_o + 100\text{Hz}$ -140dBc/Hz, $f_o + 1\text{kHz}$
<b>temperature:</b>	
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) $^{\circ}\text{C}$

## Series OA936-15

### 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 specification:** OA936-15 A S V2\* - 10.00M

OA936-15 = 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

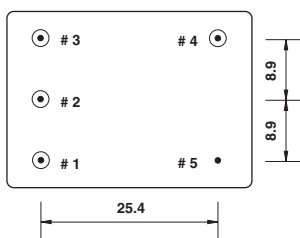
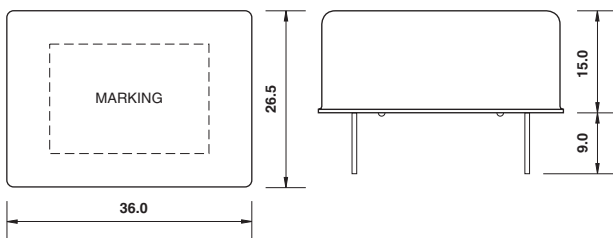
**V2\*** supply voltage code: V2 = +5Vd.c. supply

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

**10.00M** output frequency: 10.00M = 10.000MHz

**custom specification:** part number issued with custom specification and drawing

### Dimensions(mm):

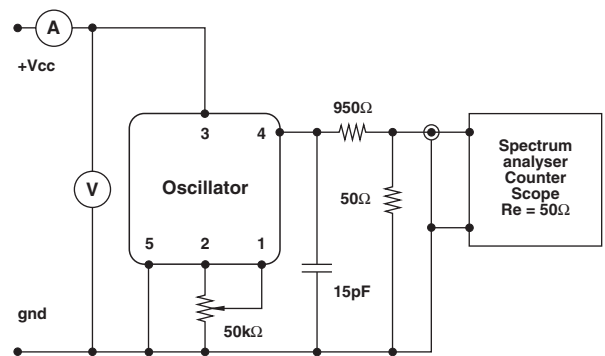


Pins viewed from bottom  
pin diameter 0.8mm

### Pin connections:

- #1 trim
- #2 n.c. or trim reference voltage\*
- #3 +V<sub>CC</sub>
- #4 output
- #5 ground/case

### Test circuit:



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