

SBTO-21

1MHz ~ 1GHz

- # sine wave, CMOS output
- # hermetic seal
- # excellent phase noise
- # very low ageing

Standard options:

frequency range:	1MHz ~ 1GHz		
accuracy codes:	(A)	(B)	(C)
temperature tolerance	$\pm 0.5\text{ppm}$	$\pm 1.0\text{ppm}$	$\pm 2.0\text{ppm}$
temperature range	$(0 +50)^\circ\text{C}$	$(-20 +70)^\circ\text{C}$	$(-40 +70)^\circ\text{C}$
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 V_{CC}	+3.3Vd.c.	+5.0Vd.c.	+12.0Vd.c.
voltage reference option*	+3.0Vd.c.	+4.5Vd.c.	+4.5Vd.c.
	add suffix (R) for V_{ref} output on pin #5		

Generic specification:

stability:	
against supply voltage change	$\pm 0.02\text{ppm max. for } V_{CC} \pm 5\%$
against load change	$\pm 0.02\text{ppm max. for load } \pm 10\%$
ageing short term	$\pm 0.005\text{ppm max. per day}$ after 30 days continuous operation
ageing long term	$\pm 1.5\text{ppm max. first year}$
voltage trim V_t	$\pm 10\text{ppm min. typical, linearity } \pm 5\%$
trim input impedance	100K Ω min.
power supplies:	
supply voltage V_{CC}	+3.3Vd.c. +5.0Vd.c. +12.0Vd.c.
supply current	frequency, V_{CC} and output load dependent
insulation resistance	500Meg Ω min., at +100Vd.c.
phase noise:	
single sideband, 1Hz bandwidth	-80dBc/Hz, $f_o + 10\text{Hz}$ -100dBc/Hz, $f_o + 100\text{Hz}$ -125dBc/Hz, $f_o + 1\text{kHz}$
temperature:	
operating range	$(0 +50)^\circ\text{C}$ $(-10 +60)^\circ\text{C}$ $(-40 +70)^\circ\text{C}$
storage range	$(-40 +125)^\circ\text{C}$ $(-40 +125)^\circ\text{C}$ $(-40 +125)^\circ\text{C}$

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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: **A S V2* - 16.384M**

= series generic code

A temp. tol. and temp. range code: **A = ±0.5ppm(0 +50)°C**

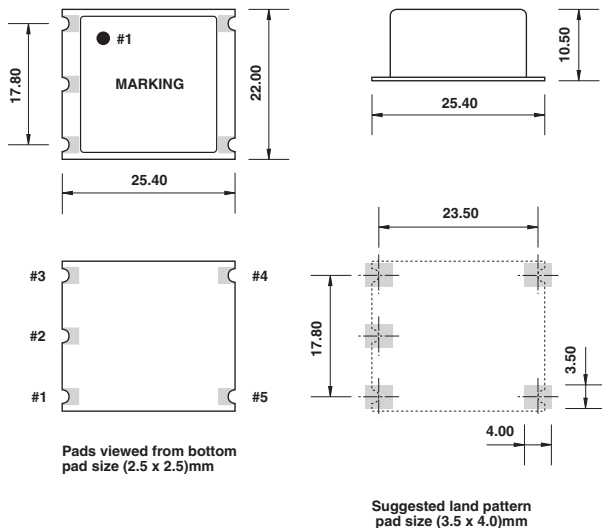
S output code: **S = sine wave output, 0dBm into 50Ω**

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

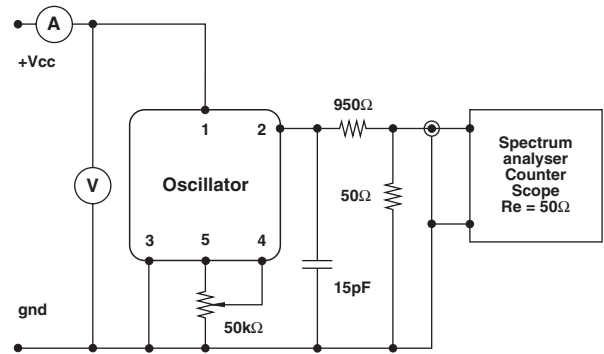
*Add suffix (R) for V_{ref} output on pin #5

16.384M output frequency: **16.384M = 16.384MHz**

custom specification: part number issued with custom specification and drawing

Dimensions(mm):**Pin connections:**

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

Test circuit:

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