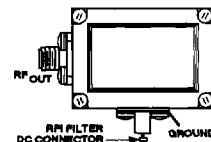


FEATURES

- Customer Specified Fixed Frequencies From 3 to 12 GHz
- Thin-Film Construction
- 20 mW Power Out

APPLICATIONS

- Fixed Tuned Local Oscillators
 - Built-in Test Equipment (BITE)
 - IFM Front-Ends
 - Missile Transponders
 - ECM Receivers
 - Altimeters
- Communication Systems



OD-60, OD-70,
OD-80, p. 16-31

DESCRIPTION

The DSO-1000-13 Series dielectrically-stabilized oscillators use high-Q dielectric resonators and silicon bipolar transistors which produce highly stable low noise oscillators that operate over wide temperature ranges and in severe environmental conditions. They use much less power and have far fewer components than crystal oscillators; their high Q provides good noise performance; and, since the dielectric resonator is

a solid structure (thin-film hybrid construction is used throughout), they are far less susceptible to vibration than cavity-stabilized VCOs. Oscillator-to-load coupling is minimized by an internal buffer amplifier resulting in higher Q and minimum frequency pulling due to load variations. All Avantek DSOs are housed in hermetically sealed packages with field replaceable SMA connectors.

ELECTRICAL AND PERFORMANCE SPECIFICATIONS

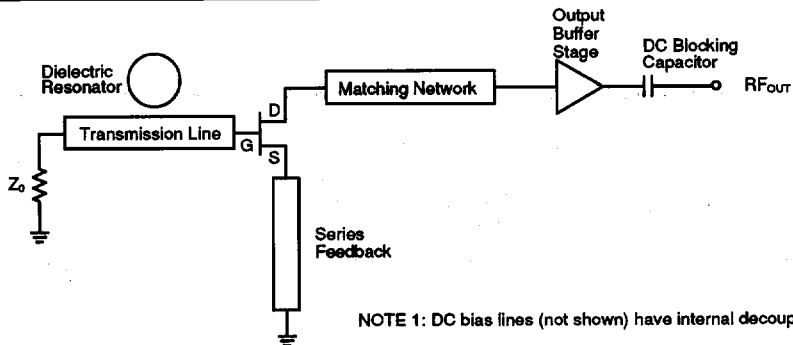
Guaranteed Specifications at -54° to $+85^{\circ}\text{C}$ Case Temperature

Model No. See Page 11-3 For Model Number Selection

Model No.	See Page 11-3 For Model Number Selection	3000-4499 MHz	4500-7999 MHz	8000-11999 MHz
Frequency Range ¹		3000-4499 MHz	4500-7999 MHz	8000-11999 MHz
Power Output into 50-ohm Load, Min.		20 mW/+13 dBm	20 mW/+13 dBm	20 mW/+13 dBm
Power Output Variation Over Temperature, Max.		3 dB	3 dB	3 dB
Frequency Accuracy (Under All Conditions) Max. ²		0.1%	0.1%	0.1%
Temperature Stability, Max.		$\pm 0.05\%$	$\pm 0.05\%$	$\pm 0.05\%$
Pulling Figure (12 dB Return Loss), Max.		$\pm 0.02\%$	$\pm 0.02\%$	$\pm 0.02\%$
Pushing Figure, +15 VDC Supply, Max.		$\pm 0.001\%$	$\pm 0.001\%$	$\pm 0.001\%$
Harmonics, Below Carrier, Max.		-20 dBc	-20 dBc	-20 dBc
Spurious Output Below Carrier, Max.		-60 dBc	-60 dBc	-60 dBc
Phase Noise, Single Sideband				
1 Hz Bandwidth, Typical				
10 kHz From Carrier		-100 dBc	-100 dBc	-90 dBc
100 kHz From Carrier		-125 dBc	-125 dBc	-115 dBc
Input Power				
Voltage		+15 \pm 5 VDC	+15 \pm 5 VDC	+15 \pm 5 VDC
Current, Max.		100 mA	75 mA	150 mA
Case Style		OD-60	OD-70	OD-80
Weight, Max.		6.5 oz.	4.5 oz.	3.0 oz.

- NOTES: 1. Center frequencies are customer selectable and may be specified to the MHz. Center frequencies are set at $+25^{\circ}\text{C}$ See page 11-3 for part number selection.
2. The oscillator will stay within the frequency accuracy of the customer specified frequency under all conditions including the full temperature range, load pulling, frequency pushing, and aging.

SCHEMATIC



NOTE 1: DC bias lines (not shown) have internal decoupling capacitors.

TYPICAL PERFORMANCE @ 25°C Case Temperature

