



ROHS-Compliant Product

**NWO.60.801xxx-LF**

1. Specification	
Nominal Frequency $F_N$ :	10.000 MHz
Frequency stability in the temperature range -40 °C to +85 °C: vs. supply voltage changes $V_S \pm 5\%$ : vs. load changes 50 Ohm $\pm 5\%$ :	$\leq \pm 100 \times 10^{-9}$ $\leq \pm 5 \times 10^{-10}$ $\leq \pm 5 \times 10^{-10}$
Aging (after 30 days of continuous operation): per day: per month: 1st year: 15 years:	$\leq \pm 5 \times 10^{-10}$ $\leq \pm 5 \times 10^{-9}$ $\leq \pm 3 \times 10^{-8}$ $\leq \pm 5 \times 10^{-7}$
Frequency control range (referred to $F_N$ ) :	$\pm 0.5$ ppm ... $\pm 1.5$ ppm
Control voltage range $V_C$ :	0 V ... +5 V
Pulling slope $dF/dV_C$ :	positive
Tuning coverage :	$\geq 15$ years
Reference Voltage $V_{ref}$ : Drift of $V_{ref}$ over temperature and life time: Internal resistance of $V_{ref}$ :	$+5$ V $\pm 1.5\%$ $\leq \pm 0.2\%$ $\leq 100$ Ohm
Supply voltage $V_S$ :	$+12.0$ V $\pm 5\%$
Power consumption: @ +25 °C steady state: during warm-up:	$\leq 200$ mA $\leq 500$ mA
Warm up time to $dF/F_N < \pm 5 \times 10^{-8}$ referred to final frequency after 1 hour:	$\leq 10$ min
Oven alarm $V_{OA}$ (Pin 2) logic LOW ( $\leq +0.33$ V): logic HIGH ( $\geq +2.97$ V; $\leq +3.3$ V): oven alarm current:	ALARM (not ready) ready 100 $\mu$ A min.
Oscillator ON/OFF (Pin 6) Logic LOW or not connected ( $V_{ED} < +0.8$ V): Logic HIGH ( $V_{ED} > +2.4$ V; up to +12.5 V max):	Osc. disabled (OFF) Osc. enabled (ON)
Output voltage : level: load :	sine wave $+7.5$ dBm $\pm 2.5$ dBm 50 Ohm
Harmonics: Spurious (100 Hz to 1 MHz from carrier):	$\leq -20$ dBc $\leq -90$ dBc



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### 1. Specification (preliminary)

<b>Phase noise:</b> 1 Hz: 10 Hz: 100 Hz: 1 kHz: 10 kHz: 100 kHz:	Typical $\leq -100$ dBc / Hz $\leq -130$ dBc / Hz $\leq -150$ dBc / Hz $\leq -160$ dBc / Hz $\leq -165$ dBc / Hz $\leq -170$ dBc / Hz
<b>Short term stability (Allan Variance)</b> @ tau = 1 sec: @ tau = 10 sec: @ tau = 100 sec:	$\leq 5.0 \times 10^{-12}$ $\leq 1.0 \times 10^{-11}$ $\leq 1.0 \times 10^{-10}$
<b>Temperature ranges</b> Operating: Operable: Storage:	-40 °C ... +85 °C -40 °C ... +85 °C -40 °C ... +85 °C
<b>MTBF @ +45 °C per MIL-HDBK-217F (<math>\pi_E = G_B</math>):</b>	$\geq 1 \times 10^5$ hours

### 2. Environmental conditions

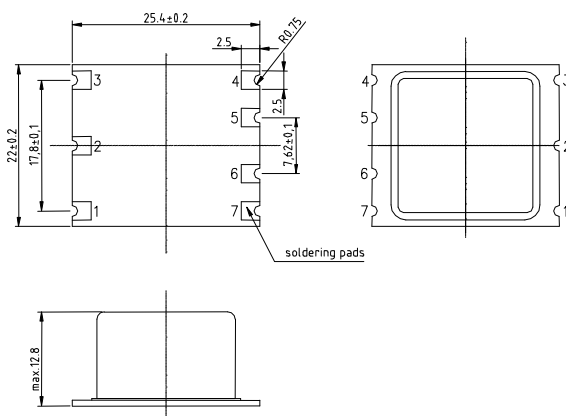
According to KVG Product Qualification Procedure AA-QM-200

### 3. Marking

Manufacturer's name, date code (week/year); Specification; Nominal frequency

### 4. Case

**Case style: BF144-12.8B-SMD**



**max. weight: 40 gram**

#### 1.Pin configuration

1. RF output
2. Oven Alarm out
3. Ground, case
4. Vref out
5. Vadj in
6. Osc – enable in
7. Vs