# HE102/HEM102

**VCO with built-in buffer amplifier**



## Features

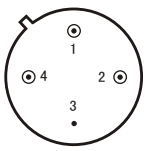
- Built-in buffer amplifier low frequency pulling
- Low phase noise
- Hyperabrupt varactor octave bandwith
- Thin film circuit high reliability
- TO-8C、SMO-8C、SP-1、SP-3 packages availalble
- Operating temperature range：-55℃～+85℃

## Specifications( $T_A$=25℃,$V_{CC}$=+15V)

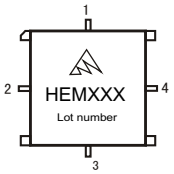
| Parameter | Symbol | Unit | Guaranteed | Typical | Test Condition |
|---|---|---|---|---|---|
| Frequency Range | $f_L$～$f_H$ | MHz | 4000～8000 | – | $V_T$:0～20V |
| Power Output | $P_O$ | dBm | ≥10 | 11 | $V_T$=6V |
| Power Output Variation | △$P_O$ | dB | ≤±2.5 | ±1.5 | $f_{L-H}$:4000～8000MHz |
| Tuning Voltage | $V_T$ | V | 0～20 | – | – |
| Pushing | $K_{VC}$ | MHz/V | – | 20 | $V_{CC}$=14～16V, $V_T$=6V |
| Spurious | $R_{fs}$ | dBc | ≤-60 | – | $f_{L-H}$:4000～8000MHz |
| Harmonics | $R_{fn}$ | dBc | – | -12 | $f_{L-H}$:4000～8000MHz |
| SSB Phase Noise | $S_\Phi$ | dBc/Hz | – | -100 | $V_T$=6V, $f_m$=100KHz |
| Frequency Drift | △f | MHz | – | 140 | $V_T$=6V, $T_A$:-55～+85℃ |
| Current | $I_{CC}$ | mA | – | 85 | – |
| Tuning Port Capacitance | $C_T$ | pF | – | 45 | – |

## Absolute Ratings

Maximum DC Voltage : +18V
Maximum Tuning Voltage : +24V
Minimum Tuning Voltage : -0.7V
Maximum Storage Temp:＋125℃



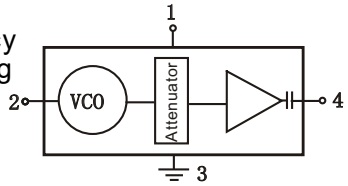

TO-8C




SMO-8C

## Application Notes

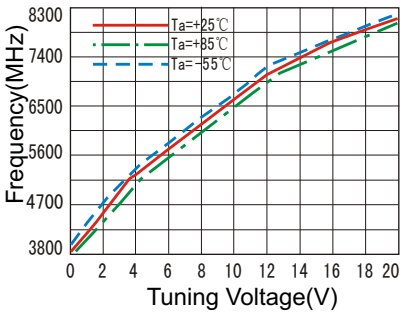
1.Isolator is required for high frequency
2.See assembly section for mounting information
3.ESD observe handling precautions



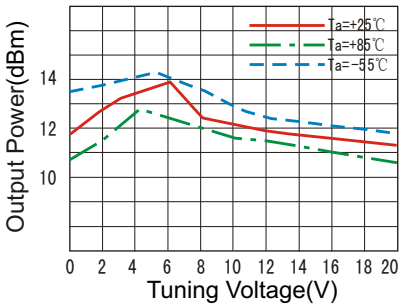

1. Vcc 3. GND
2. $V_T$ 4. Po

## Typical Performance

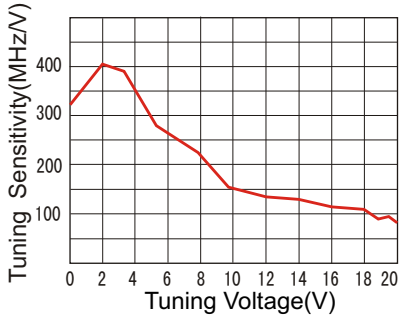
Frequency vs Tuning Voltage




Power Output vs Tuning Voltage




Tuning Sensitivity vs Tuning Voltage




Phase Noise vs Offset Frequency

