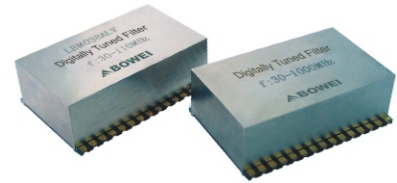


### Features

- High “Q” varactor tuning circuit
- Tuning control: 8 bit parallel (TTL compatible)
- Input P<sub>-1</sub>: +10dBm( $f_c \geq 90\text{MHz}$ ),  
0dBm( $f_c < 90\text{MHz}$ )
- DC Power: 3~3.6V/10~15mA
- Double tuned 0.1dB Chebyshev response
- Tuning Speed  $\leq 50\mu\text{s}$ ( $f_c > 30\text{MHz}$ )
- Up to 251 tuning step
- Typical 2~3 octave band cover the frequency band 30~1000MHz
- SMT Package (non-hermetic)
- Operating Temperature Range: -40°C~+85°C



### Selection Guide:

DVT30-90 (30~90MHz), DVT30-110 (30~110MHz)  
 DVT90-200(90~200MHz),  
 DVT200-400(200~400MHz)  
 DVT400-700(400~700MHz),  
 DVT550-865(550~865MHz)

Note: Custom frequency bands available

### Specification

#### Electrical

| Parameter  |   |
|--|---|
| 3dB Bandwidth(%)                                 | 3~10%   |
| % 3dB Bandwidth flatness <sup>1)</sup>           | $\leq 1\%$  |
| Insertion Loss at center frequency <sup>2)</sup> | 2~6dB   |
| IL variance <sup>3)</sup>                        | $\leq 2\text{dB}$   |
| Shape factor ( $BW_{30}/BW_3$ )                  | $\leq 7:1$  |
| Impedance  | 50Ω   |
| Maximum VSWR                                     | 2.0:1max  |
| Input P <sub>-1</sub>                            | +10dBm(TYP, $f_c \geq 90\text{MHz}$ )<br>0dBm(TYP, $f_c < 90\text{MHz}$ ) |
| DC Power( $V_{CC}$ ):                            | +3.3V/15mA  |

**Example:** DVT30-90-5 means DVT30-90 series with 5% 3dB bandwidth.



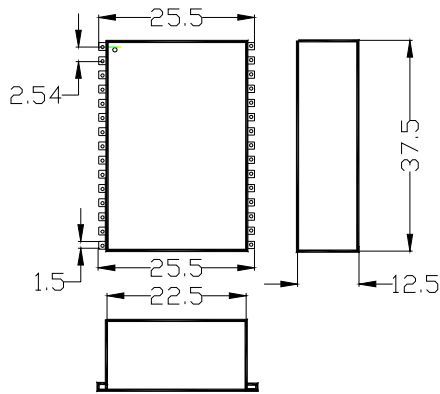
**Note:** 1) difference of % 3dB bandwidth within the frequency band, see Page60-61 for typical curves

2) Insertion loss at center frequency is typical one, the wider passband the lower IL. Following method used to calculate insertion loss:  $IL \times BW_{3dB}\% = 20\sim 25$ , For example % BW is 5% then IL is 4~5dB

3) See Page 60-61 for the typical curves

| Environmental       | Standard |         | Special               |            |            |
|---------------------|----------|---------|-----------------------|------------|------------|
|                     | Standard | Special | Standard              | Special    |            |
| Vibration(5~2000Hz) | 10G      | 20G     | Operating Temperature | -40~+60°C  | -40~+85°C  |
| Shock(11 mSec)      | 30G      | 50G     | Storage Temperature   | -40~+100°C | -55~+125°C |
| Humidity            | 0~90%    | 95%     |                       |            |            |

**Package Outline**



DVT30-90~DVT550-865

Outline tolerance 0.5mm;

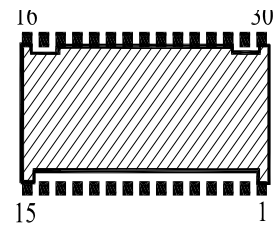
Orientation dot pin 1

**Pinout**

DVT30-90~DVT550-865

|         |     |       |       |    |                 |     |     |
|---------|-----|-------|-------|----|-----------------|-----|-----|
| Pin     | 1   | 2     | 3     | 4  | 5               | 6   | 7   |
| Descrip | Gnd | A7    | A6    | A5 | A4              | A3  | A2  |
| Pin     | 8   | 9     | 10-13 |    | 14              | 15  | 16  |
| Descrip | A1  | A0    | N/C   |    | V <sub>cc</sub> | GND | GND |
| Pin     | 17  | 18-28 |       | 29 | 30              |     |     |
| Descrip | RF  | GND   |       | RF | GND             |     |     |

V<sub>cc</sub>=+2.7~3.3V



Bottom

A<sub>0</sub>~A<sub>7</sub> are 8 control bit lines. Tune words from 00000000 to 11111010 results in the tuned frequency from lowest to highest. The binary tuning word is determined by the following relationship:

$$\text{Tuneword} = \left( \frac{f_{desired} - f_{low}}{f_{high} - f_{low}} \right) \times 250$$

Example: If you wish to tune to 50MHz using a 30 to 90 MHz filter, the tune word is:

$$\left( \frac{50 - 30}{90 - 30} \right) \times 250 = 83D = 53H$$

**Notes**

- 1) The relationship between tuneword and frequency is only an approximate one.
- 2) Replacement alternative for MICRO-POLE series of POLE/ZERO
- 3) Zero DC resistance at both I/O port, additional DC blocking capacitance needed if necessary
- 4) RF input and output ports are interchangeable
- 5) Special frequency bands are available

**Typical Plots**

