

Typical Applications

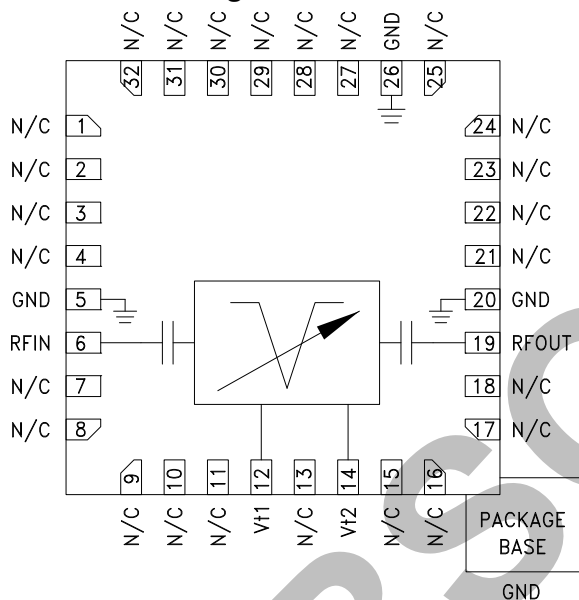
The HMC1000LP5E is ideal for:

- Test & Measurement Equipment
- Military RADAR & EW/ECM
- SATCOM & Space
- Industrial & Medical Equipment

Features

- Tunable Stopband Frequency: 3.6-12.2 GHz
- Tunable Stopband Rejection: 25 dB Typical
- Four Frequency Control Modes
- Single Chip Replacement For Mechanically Tuned Designs
- 32 Lead 5 x 5 mm SMT Package

Functional Diagram



General Description

The HMC1000LP5E is a MMIC band reject filter which features a user selectable band rejection frequency. The -20 dB filter bandwidth is < 10%. The rejection frequency can be varied between 3.6 and 12.2 GHz by applying an analog tune voltage between 0 and 14V. This tunable filter can be used as a much smaller SMT alternative to physically large switched filter banks and cavity tuned filters. The HMC1000LP5E has excellent microphonics due to the monolithic design, and provides a dynamically adjustable solution in advanced communications applications.

Electrical Specifications, $T_A = +25\text{ }^\circ\text{C}$

Parameter	Min.	Typ.	Max.	Units
Rejection Band Tuning Range	3.6		12.2	GHz
Passband Frequency Range		0.1-25		GHz
Stopband Rejection		25		dB
Passband Insertion Loss		3		dB
Return Loss (passband and rejection band)		15		dB
Rejection Band Input IP3 (Pin = + 10 dBm)		23.5		dBm
Passband Input IP3 (Pin = + 10 dBm)		35		dBm
Input Power @ 5° Shift In Insertion Phase (Vt1 = Vt2 = 0V)		10		dBm
Input Power @ 5° Shift In Insertion Phase (Vt1 = Vt2 = 7V)		13		dBm
Input Power @ 5° Shift In Insertion Phase (Vt1 = Vt2 = 14V)		>18		dBm
Frequency Control Voltage (V _{fctl})	0		14	V
Source/Sink Current (I _{fctl})			±1	mA
Residual Phase Noise [1] (100 kHz Offset)		-162		dBc/Hz
Rejection Band, F _{center} Drift Rate		-0.3		MHz/°C
Tuning Speed, Phase Settling to within 10° [2]		< 200		ns

[1] Optimum residual phase noise performance requires the use of a low noise driver circuit.

[2] Tuning speed includes 40 ns typical tuning voltage ramp from driver.

