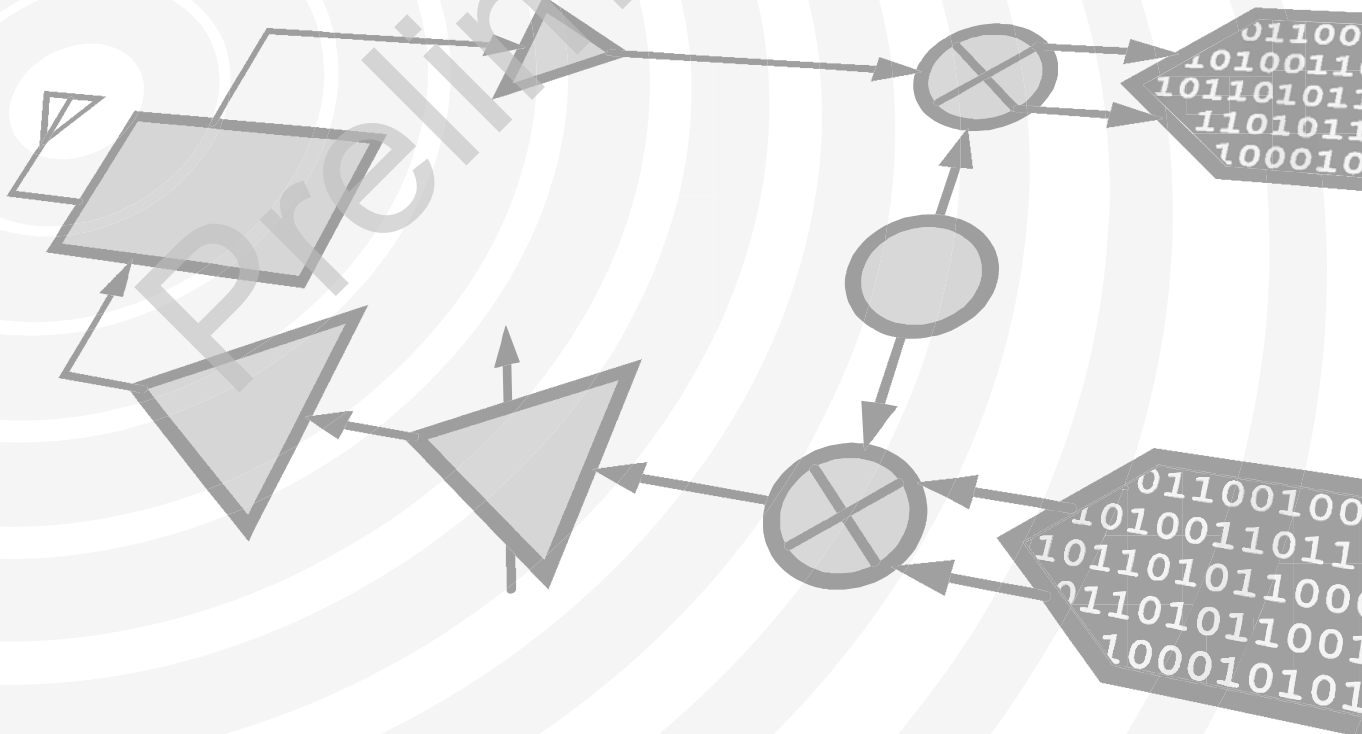


# Analog Devices Welcomes Hittite Microwave Corporation



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Preliminary

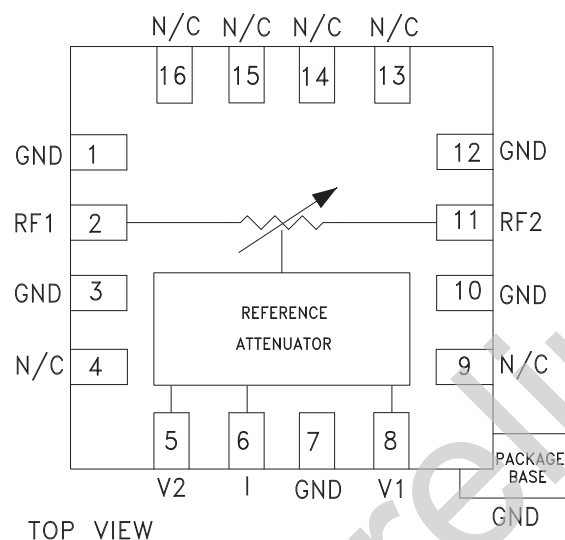
## GaAs MMIC VOLTAGE-VARIABLE ATTENUATOR, DC - 14 GHz

### Typical Applications

The HMC346ALP3 / HMC346ALP3E is ideal for:

- Basestation Infrastructure
- Fiber Optics & Broadband Telecom
- Microwave Radio & VSAT
- Military Radios, Radar, & ECM
- Test Instrumentation

### Functional Diagram



### Features

- Wide Bandwidth: DC - 14 GHz
- Low Phase Shift vs. Attenuation
- 30 dB Attenuation Range
- Simplified Voltage Control
- 3 x 3 x 1 mm SMT Package

### General Description

The HMC346ALP3 & HMC346ALP3E are pabsorptive Voltage Variable Attenuators (VVA) in low cost leadless surface mount plastic packages operating from DC - 14 GHz. It features an on-chip reference attenuator for use with an external op-amp to provide simple single voltage attenuation control, 0 to -3V. The device is ideal in designs where an analog DC control signal must control RF signal levels over a 30 dB amplitude range. This VVA is an excellent alternative to the HMC121C8.

### Electrical Specifications, $T_A = +25^\circ \text{C}$ , 50 ohm system

Parameter	Min	Typical	Max	Units
Insertion Loss	DC - 10 GHz DC - 14 GHz	1.7 2.8	2.2 3.3	dB dB
Attenuation Range	DC - 10 GHz DC - 14 GHz	27 22	30 27	dB dB
Return Loss	DC - 14 GHz	5	10	dB
Switching Characteristics	tRISE, tFALL (10/90% RF): tON, tOFF (50% CTL to 10/90% RF):	2 8		ns ns
Input Power for 0.25 dB Compression (0.5 - 8 GHz)	Min. Atten: Atten. >2 dB:	+8 -4		dBm dBm
Input Third Order Intercept (0.5 - 8 GHz) (Two-tone Input Power = -8 dBm Each Tone)	Min. Atten: Atten. >2 dB:	+25 +10		dBm dBm

## GaAs MMIC VOLTAGE-VARIABLE ATTENUATOR, DC - 14 GHz

### Absolute Maximum Ratings

RF Input Power	+18 dBm
Control Voltage Range	+1 to -5V
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS

### Outline Drawing

