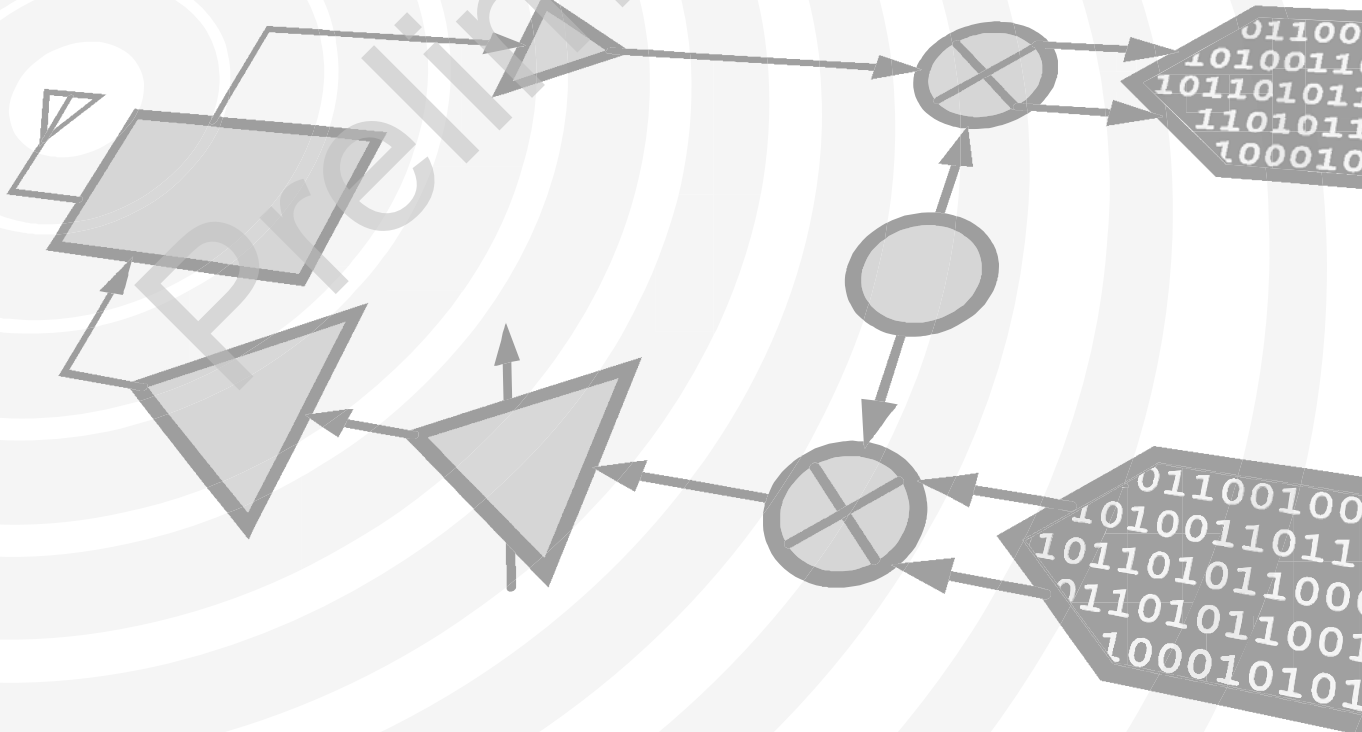


Analog Devices Welcomes Hittite Microwave Corporation



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Preliminary

GaAs MMIC VOLTAGE-VARIABLE ATTENUATOR, DC - 18 GHz

Typical Applications

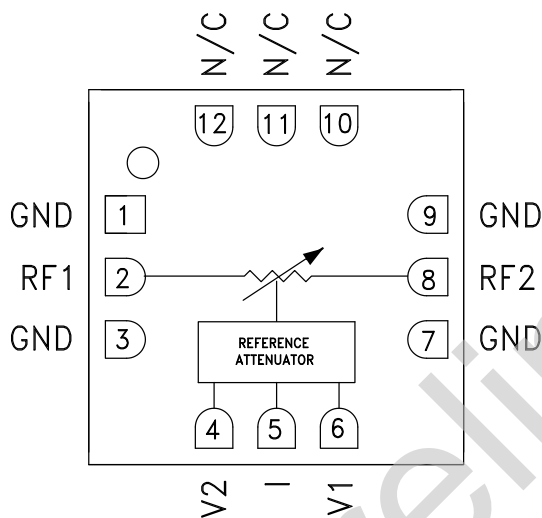
The HMC346ALC3B is ideal for:

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

Features

- Wide Bandwidth: DC - 18 GHz
- Low Phase Shift vs. Attenuation
- 30 dB Attenuation Range
- Simplified Voltage Control
- RoHS Compliant 3 x 3 mm SMT Package

Functional Diagram



General Description

The HMC346ALC3B is an absorptive Voltage Variable Attenuator (VVA) in a leadless “Pb free” RoHS compliant SMT mount ceramic package operating from DC - 18 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. The HMC346ALC3B allows the use of surface mount manufacturing techniques.

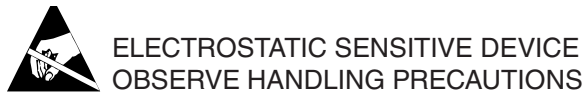
Electrical Specifications, $T_A = +25^\circ\text{C}$, 50 Ohm system

Parameter	Min	Typical	Max	Units
Insertion Loss	DC - 10 GHz	1.5	2.0	dB
	DC - 14 GHz	2.2	2.7	dB
	DC - 18 GHz	2.8	3.5	dB
Attenuation Range	DC - 12 GHz	26	30	dB
	DC - 18 GHz	22	26	dB
Return Loss	DC - 18 GHz	10		dB
Input Power for 0.25 dB Compression (0.5 - 18 GHz)	Min. Atten:	+8		dBm
	Atten. >2 dB:	-4		dBm
Input Third Order Intercept (0.5 - 18 GHz) (Two-tone Input Power = -8 dBm Each Tone)	Min. Atten:	+25		dBm
	Atten. >2 dB:	+10		dBm
Switching Characteristics	tRISE, tFALL (10/90% RF):	2		ns
	tON, tOFF (50% CTL to 10/90% RF):	8		ns

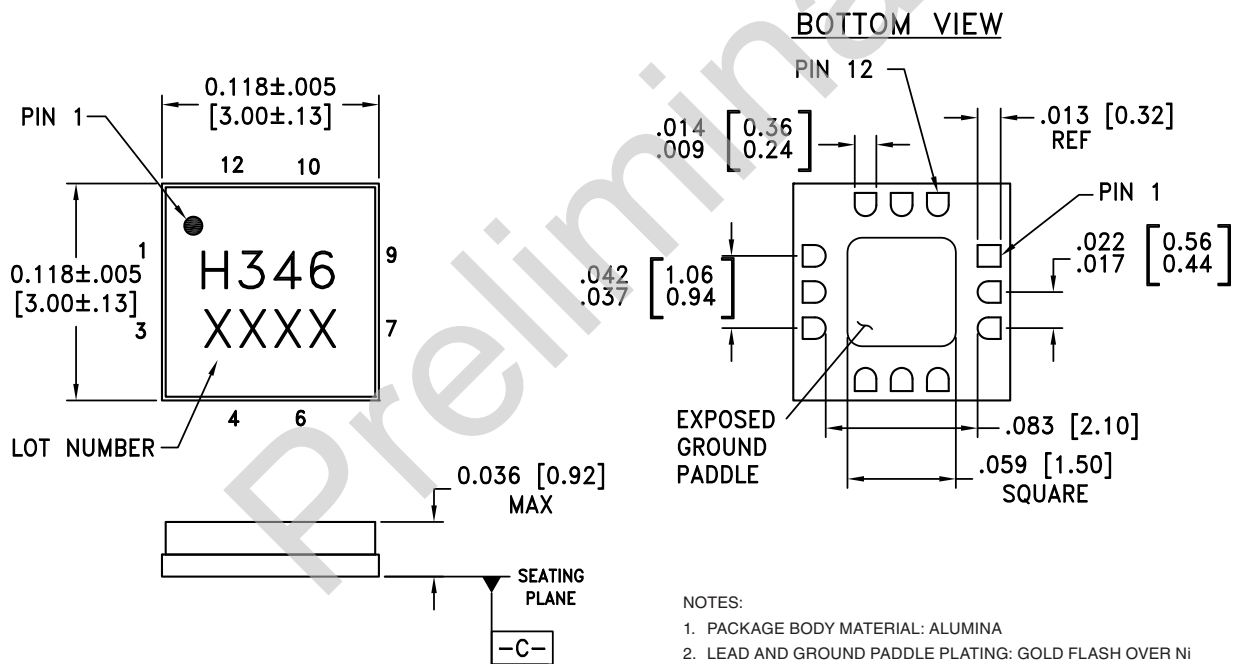
**GaAs MMIC VOLTAGE-VARIABLE
ATTENUATOR, DC - 18 GHz**

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



Outline Drawing



- NOTES:
1. PACKAGE BODY MATERIAL: ALUMINA
 2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER Ni
 3. DIMENSIONS ARE IN INCHES [MILLIMETERS]
 4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE
 5. PACKAGE WARP SHALL NOT EXCEED 0.05mm
 6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND