GaAs IC 30 dB Voltage Variable Attenuator Single Positive 3 V Control 1.7–2.5 GHz

Alpha

AV110-73

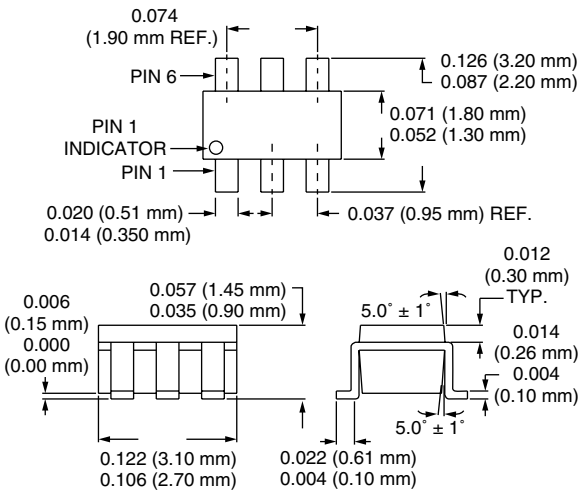
Features

- Single Positive 3 V Control Voltage
- 33 dB Attenuation Range @ 1.9 GHz
- Excellent Linearity Performance

Description

The AV110-73 GaAs IC FET voltage variable attenuator provides 33 dB attenuation range at 1900 MHz controlled by a single positive voltage. The VVA has a linear transfer curve of 12 dB/V slope, with input and output VSWR better than 2:1 over all states. It operates with supply voltage of +3 V and control voltage of 0 V to +3 V in a low cost SOT-6 package. The RF ports require 25 pF DC blocking capacitors.

SOT-6



Electrical Specifications at 25°C (V_S = 3 V)

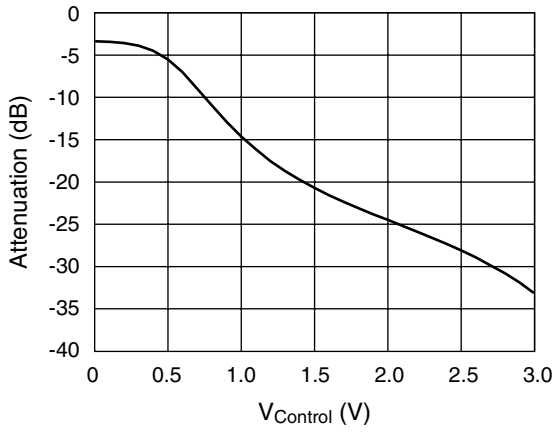
Parameter[1]	Frequency	Min.	Typ.	Max.	Unit
Insertion Loss (V_C = 0 V)	1.7–2.0 GHz 2.0–2.5 GHz		3.5 3.8		dB dB
Maximum Attenuation (V_C = 3 V)[2]	1.7–2.0 GHz 2.0–2.5 GHz		33 28		dB dB
VSWR (I/O)[3]	1.7–2.5 GHz		2.0:1		

Operating Characteristics at 25°C (V_S = 3 V)

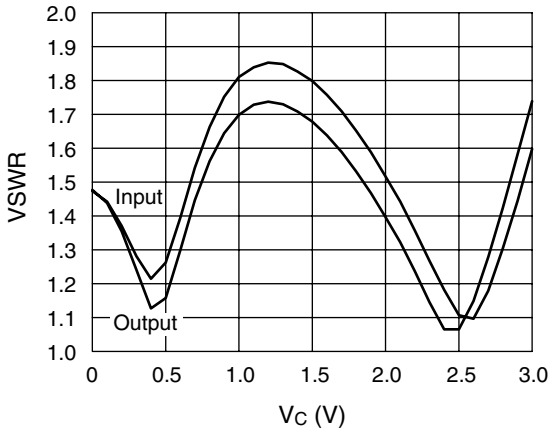
Parameter[1]	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics	Rise, On (10/90% or 50% CTL to 90% RF) Fall, Off (90/10% RF or 50% CTL to 10% RF)			1.0 0.3		µS µS
Intermodulation Intercept Point (IIP3)[3]	For Two-tone Input Power +0 dBm	0.9 GHz		12		dBm
Control Voltage (V_C)			0.0		V_S	V
Supply Voltage (V_S)				3		
Control Current (I_C)				0.2 x V_C		mA
Supply Current (I_S)				150		µA

1. All measurements made in a 50 Ω system, unless otherwise specified.
2. Maximum attenuation includes insertion loss.
3. For worst case state.

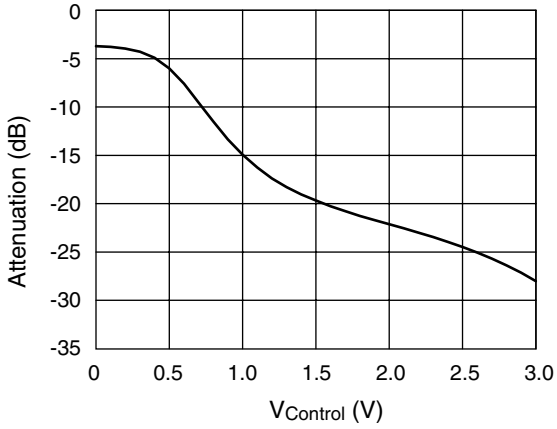
Typical Performance Data @ 1.9 GHz
(Unless Otherwise Specified)



Attenuation vs. Control Voltage @ 1900 MHz



VSWR vs. Control Voltage



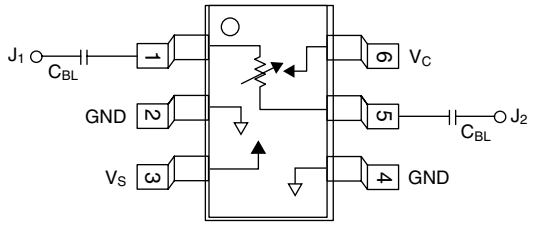
Attenuation vs. Control Voltage @ 2400 MHz

Absolute Maximum Ratings

Characteristic	Value
RF Input Power	50 mW > 500 MHz
Supply Voltage	+7 V
Control Voltage	+3.3 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Θ_{JC}	25°C/W

Note: Exceeding these parameters may cause irreversible damage.

Pin Out



DC blocking capacitors (C_{BL}) supplied externally.
C_{BL} = 25 pF for 1900 MHz operation.