

DATA SHEET

AV110-73, AV110-73LF: GaAs IC 30 dB Voltage Variable Attenuator Single Positive 3 V Control 1.7–2.5 GHz

Applications

- General-purpose telecommunication systems

Features

- Single positive 3 V control voltage
- 33 dB attenuation range @ 1.9 GHz
- Excellent linearity performance
- Negative transfer slope
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020

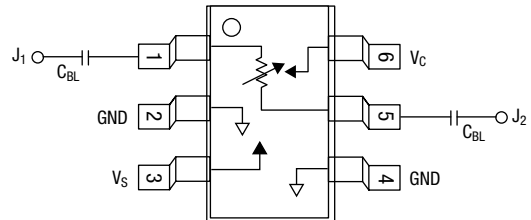
Description

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.

NEW Skyworks offers lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant packaging.



Pin Out



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

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		3.5	3.8	dB
	2.0–2.5 GHz		3.8	4.2	dB
Maximum attenuation ($V_C = 3$ V) ⁽²⁾	1.7–2.0 GHz	28	33		dB
	2.0–2.5 GHz	23	28		dB
VSWR (I/O) ⁽³⁾	1.7–2.5 GHz		2:1	2.5:1	

1. All measurements made in a 50 Ω system, unless otherwise specified.

2. Maximum attenuation includes insertion loss.

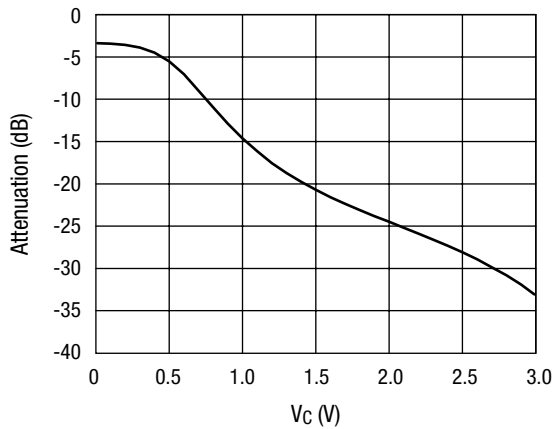
3. For worst-case state.

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

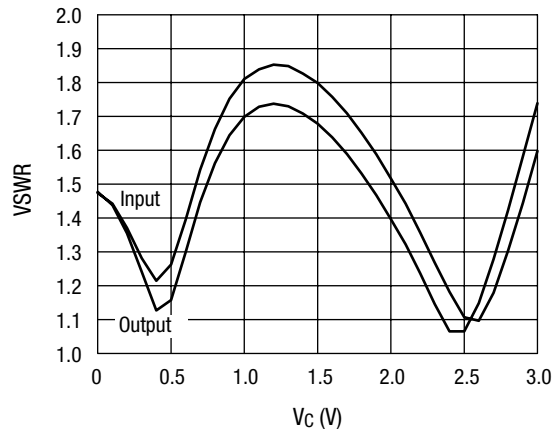
Parameter ⁽¹⁾	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics						
Rise, on	10/90% or 50% CTL to 90% RF			1.0		μs
Fall, off	90/10% RF or 50% CTL to 10% RF			0.3		μs
Intermodulation intercept point (IIP3) ⁽²⁾	For two-tone input power +0 dBm	1.9 GHz		12		dBm
Thermal resistance				25		°C/W
Control voltage (V _C)			0		V _S	V
Supply voltage (V _S)			3			V
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. For worst-case state.

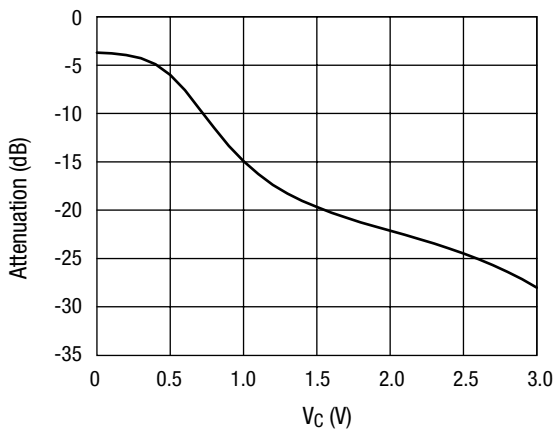
**Typical Performance Data @ 1.9 GHz
 (Unless Otherwise Specified)**



**Attenuation vs. Control Voltage
 @ 1900 MHz**



VSWR vs. Control Voltage



**Attenuation vs. Control Voltage
 @ 2400 MHz**

Copyright © 2002, 2003, 2004, 2005, 2006, 2007, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of stated published specifications or parameters.

Skyworks, the Skyworks symbol, and "Breakthrough Simplicity" are trademarks or registered trademarks of Skyworks Solutions, Inc., in the United States and other countries. Third-party brands and names are for identification purposes only, and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.