

DATA SHEET

AV109-73, AV109-73LF: GaAs IC 35 dB Voltage Variable Attenuator Single Positive 3 V Control 0.8–1 GHz

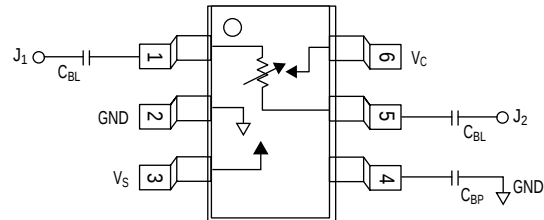
Features

- Single positive 3 V control voltage
- 35 dB attenuation range @ 0.9 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 AV109-73 GaAs IC FET voltage variable attenuator provides 35 dB attenuation range at 900 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. In addition, an external grounding capacitor is required.

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


Pin Out


DC blocking capacitors (C_{BL}) and RF bypass capacitors (C_{BP}) supplied externally.
 $C_{BL} = 25$ pF for 900 MHz operation. $C_{BP} = 38$ pF for 900 MHz operation.

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

Parameter ⁽¹⁾	Frequency	Min.	Typ.	Max.	Unit
Insertion loss ($V_C = 0$ V)	0.8–1.0 GHz		3.3		dB
Maximum attenuation ($V_C = 3$ V) ⁽²⁾	0.8–1.0 GHz		35		dB
VSWR (I/O) ⁽³⁾	0.5–2.5 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			1.0		μs
Fall, off	90/10% RF or 50% CTL to 10% RF			0.3		μs
Intermodulation intercept point (IIP3) ⁽³⁾	For two-tone input power 0 dBm	0.9 GHz		14		dBm
Thermal resistance				25		°C/W
Control voltage (V_C)			0		V_S	V
Supply voltage (V_S)				3		V
Control current (I_C)				$0.2 \times V_C$		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.

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