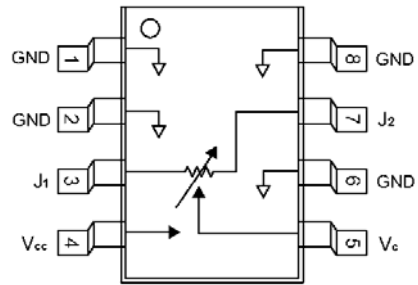


➤ **Features ver2.04**

Positive Voltage Control(0-5V)
 35dB Attenuation @ 900MHz
 High Linearity
 SOIC-8 Package.

➤ **Description**

S102 is a GaAs MMIC voltage variable attenuator in the package of SOIC-8. The volume ofattenuation changes as the voltage linearity (0-5V) . It is adapt to base station, mobile phone and GPS systems.



DC blocking Capacitors (C_{BL}) must be supplied for positive operation.
 $C_{BL}=47pF$ for operation $>500MHz$.

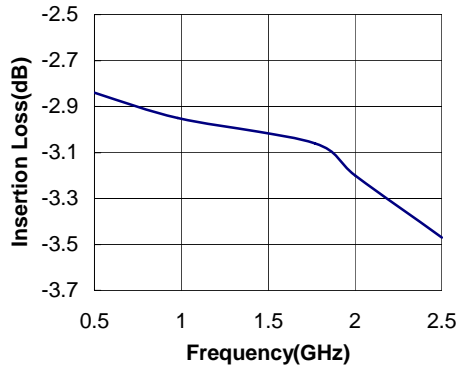
➤ **Typical Electrical Specification at 25°C**

Patameter	Frequency	Min.	Typ.	Max.	Unit
Insertio Loss	0.5-1.0GHz		2.8	3.1	dB
	1.0-2.0GHz		3.2	3.6	dB
	2.0-2.5GHz		3.5	3.8	dB
Maximum Volume of Attenuation	0.5-0.8GHz	25	33		dB
	0.8-1.0GHz	35	37		dB
	1.0-1.7GHz	30	33		dB
	1.7-2.0GHz	25	28		dB
VSWR			1.7:1		
Time of Rise or Fall	10% - 90%RF ot 90% - 10% RF		350		ns
Time of On or Off	50% Control to 90% / 10% RF		250		ns
IP3 ³	Two-tone, input power 0dBm@ 0.9GHz		15		dBm
Control Voltage Vc		0		Vs	V
Power Voltage Vs			5.0		V
Control Current Ic			800		μA
Power Current Is			800		μA

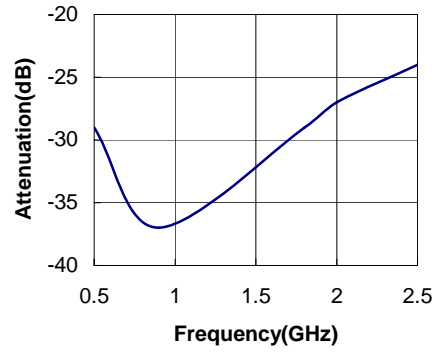
1. All measurements in a 50-Ω system, unless otherwise specified
2. The mximum attenuation volume includes insertion loss.
3. The worst condition.

➤ Typical Performance Curves

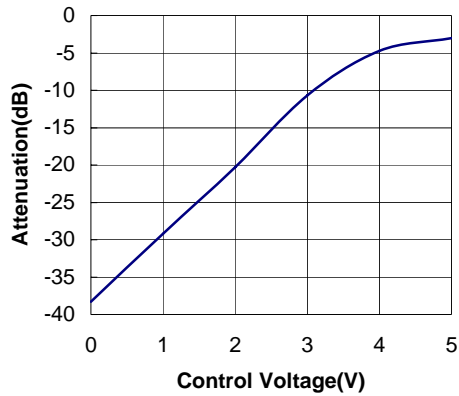
Insertion Loss vs. Frequency



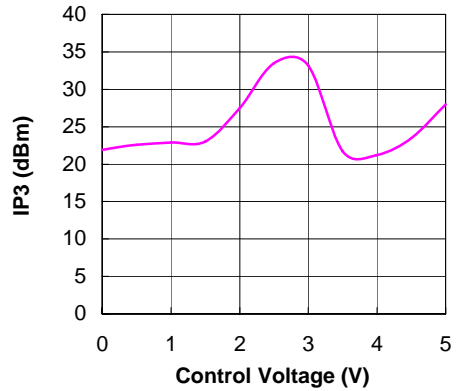
Max Attenuation vs. Frequency



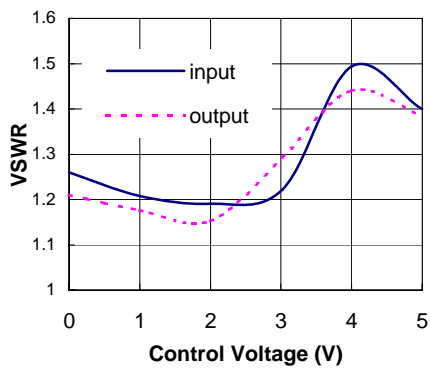
Attenuation vs. Control Voltage
F=900MHz



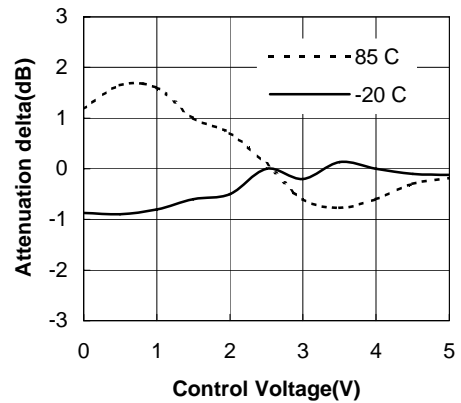
IP3 vs. Control Voltage



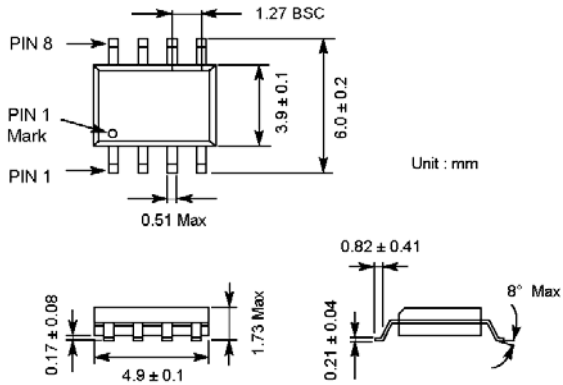
VSWR vs. Control Voltage



Attenuation vs. Temperature
Normalized to 25°C F=900MHz



➤ **SOIC-8 Outline Dimension**



➤ **Absolute Maximum Ratings**

Item	Value
Maximum Rf Input Power	17dBm > 500MHz
Power Voltage VCC	+4V ~ +8V
Control Voltage VC	$-0.2V < VC < V_s < +0.2V$
Operation Temperature	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Storage Temperature	$-65^\circ\text{C} \sim +150^\circ\text{C}$

1. Operation of this device above any one of these parameters may cause permanent damage