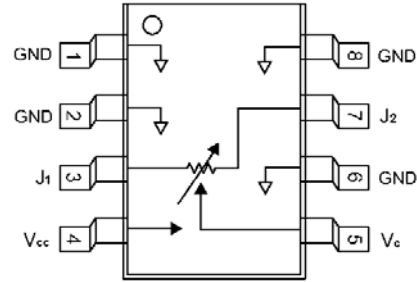


➤ **Features ver6.06**

- Positive Voltage Control (0-5V)
- 25dB Voltage Virable Attenuation @ 900MHz
- High Linearity
- SOIC-8 Package
- Meet RoHS Standard.

➤ **Decription**

S103 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<sub>BL</sub>) must be supplied for positive operation.  
 C<sub>BL</sub>=47p F for operation >500MHz.

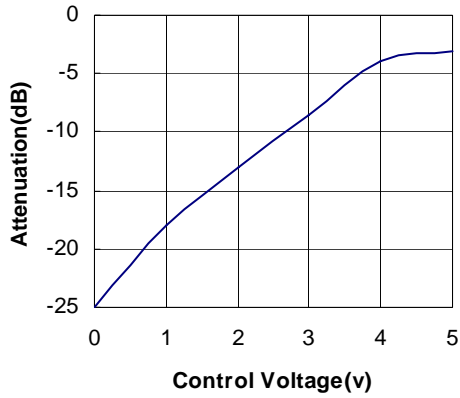
➤ **Typical Electrical Specification at 25°C**

Parameter	Frequency	Min.	Typ.	Max.	Unit
Inseriton Loss (V <sub>c</sub> =5V)	0.5-1.0GHz	2.0	2.5	3.0	dB
	1.0-2.0GHz	2.4	2.8	3.3	dB
	2.0-2.5GHz	2.6	3.1	3.6	dB
Attenuation Volume (V <sub>c</sub> =4.5V)	0.5-1.0GHz	2.4	2.8	3.5	dB
	1.0-2.0GHz	2.9	3.4	4.2	dB
	2.0-2.5GHz	3.6	4.2	5.0	dB
Maximum Volume of Attenuation	0.5-1.0GHz	16	25		dB
	1.0-2.0GHz	17	23		dB
	2.0-2.5GHz	15	20		dB
VSWR	0.5-2.5GHz		1.4:1	1.6:1	
Time of Rise or Fall	10% - 90%RF 或 90% - 10% RF		1.0		μs
Time of On or Off	50% Control to 90% / 10% RF		1.5		μs
IP3 <sup>3</sup>	Two-tone, input power 0dBm@ 0.9GHz		20		dBm
Control Voltage Vc		0		Vs	V
Power Voltage Vs			5.0		V
Control Current Ic			2.5		mA
Power Current Is			2.5		mA

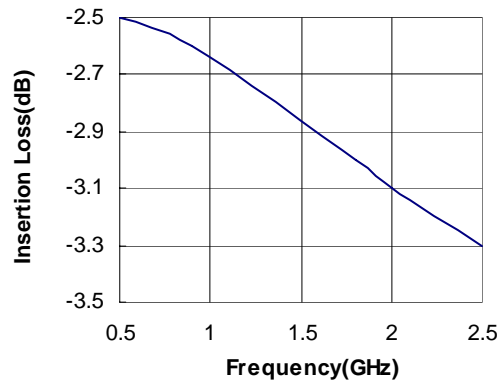
1. All measurements in a 50-Ω system, unless otherwise specified
2. The mximum attenuation volume includes inseriton loss.
3. The worst condition.

➤ **Typical Performance Curves**  
**( 900MHz )**

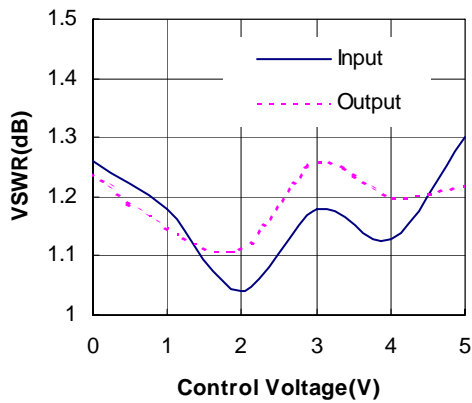
**Attenuation vs. Control Voltage**



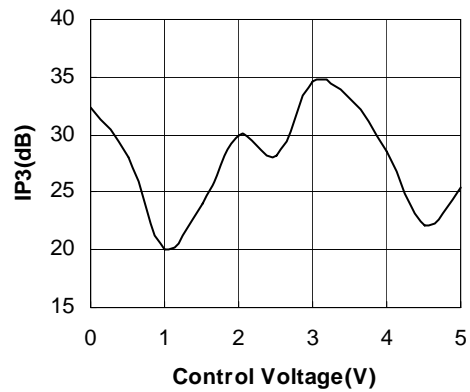
**Insertion Loss vs. Frequency**



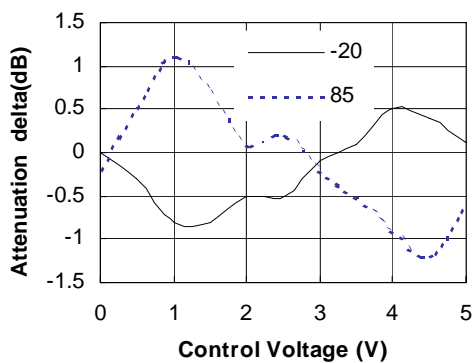
**VSWR vs. Control Voltage**



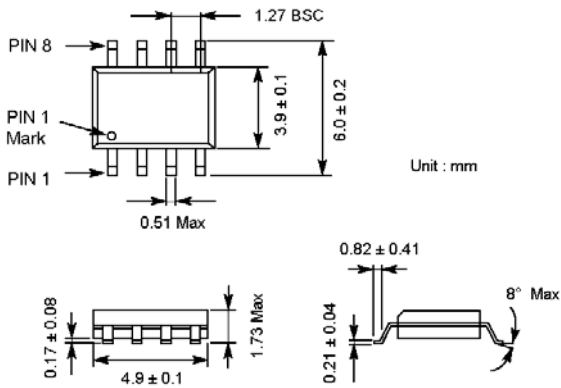
**IP3 vs. Control Voltage**



**Attenuation vs. Control Voltage**  
**Normalized to 25°C**



➤ **SOIC-8 Outline Dimension**



➤ **Absolute Maximum Ratings**

Item	Value
RF Input Power	20dBm > 500MHz
Power Voltage VCC	+4V ~ +8V
Control Voltage VC	-0.2V < VC < V <sub>S</sub> +0.2V
Operation Temperature	-40°C ~ +85°C
Storage Temperature	-65°C ~ +150°C

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