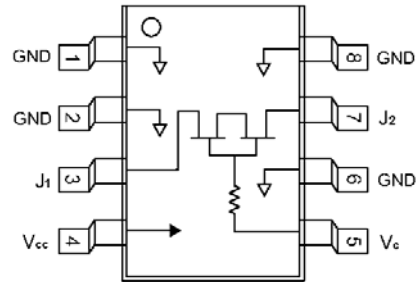


➤ **Features ver4.06**

- Positive Voltage Control
- 33dB Voltage Variable Attenuation
- Low Direct Current Power Loss
- High Reliability, Excellent Static Protection
- SOIC—8 Package
- Meet RoHS Standard



➤ **Description**

S101 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 $>500MHz$.

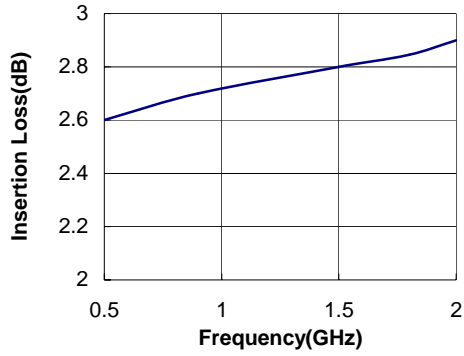
➤ **Typical Electrical Specification at 25°C**

Parameter	Frequency	Min.	Typ.	Max.	Unit
Insertion Loss	0.5-1.0GHz		2.8	3.0	dB
	1.0-2.0GHz		3.3	3.6	dB
Maximum Attenuation Volume	0.5-1.0GHz	28	33		dB
	1.0-2.0GHz	28	30		dB
VSWR				2.2:1	
Time of Rise or Fal	10% - 90%RF or 90% - 10% RF		0.2		μs
Time of On or Off	50% Control to 90% / 10% RF		0.2		μs
Instant State	In-band		70		mV
IP3 ²	Two-tone, input power 0dBm@ 0.9GHz		15		dBm
Control Voltage Vc		0		Vs	V
Power Voltage Vs		4.5	5.0	5.5	V
Control Current Ic				6	mA
Power Current Is				300	μA

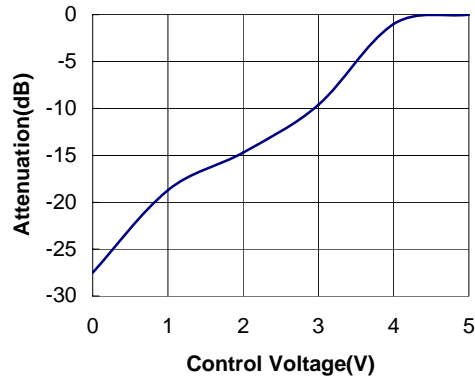
1. All measurements in a 50-Ω system, unless otherwise specified
2. The worst condition

➤ Typical Performance Curves

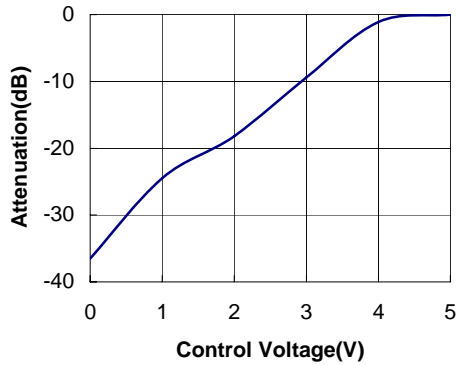
Insertion Loss vs. Frequency



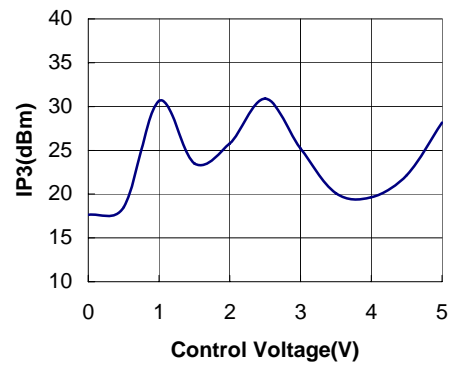
Attenuation vs. Control Voltage
F=1800MHz



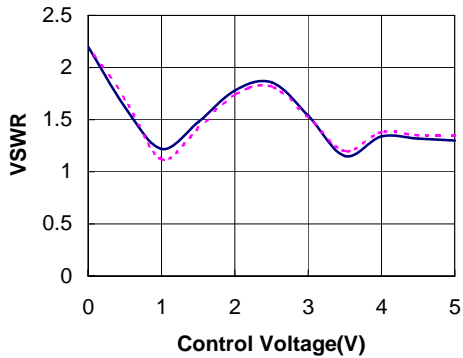
Attenuation vs. Control Voltage
F=900MHz



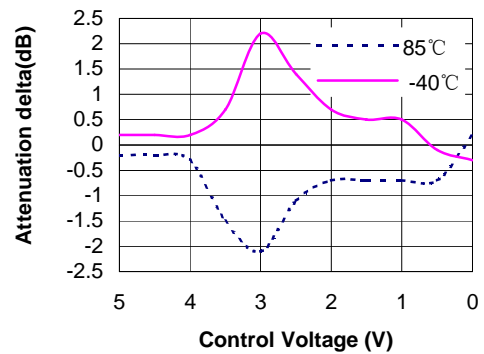
IP3 vs. Control Voltage



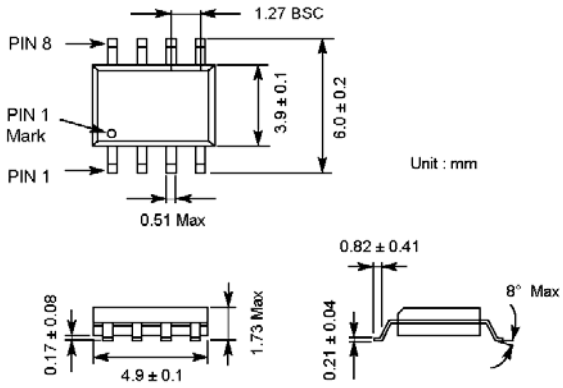
VSWR vs. Control Voltage(V)
F=900MHz



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



➤ SOIC-8 Outline Dimension



Absolute Maximum Ratings

Item	Value
Maximum RF Input Power	24dBm
Power Voltage V_{CC}	-1V, +8V
Control Voltage V_C	-1V, $V_{CC}+0.5V$
Operation Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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