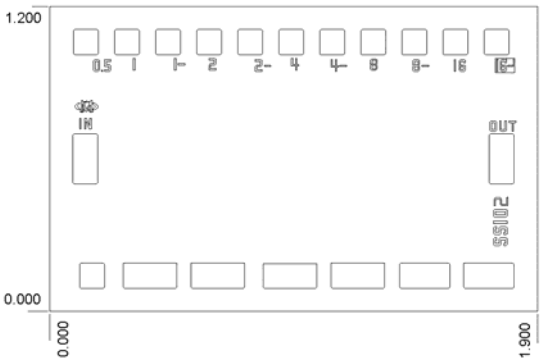
➢ Features ver1.04

6 Bits Digital Control Attenuator
0.5dB Steps, Maximum attenuation 31.5 dB
Low Power Loss
Passivation Protection

➢ Description

SS102 is a GaAs MMIC 6 bits digital attenuation chip. 0.5dB steps, maximum attenuation 31.5 dB， With the features of low power loss, low insertion loss, in the voltage of 0/-5V, easy to use. It is adapt to various telecommunication systems including GSM/CDMA mobile phone, base station etc.



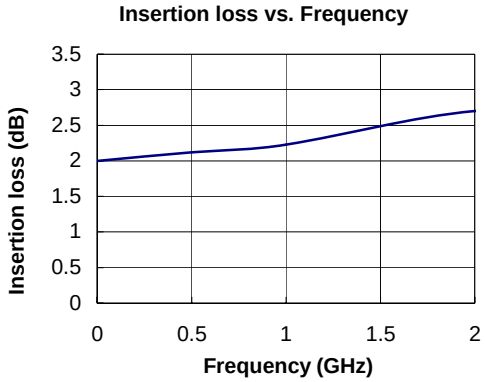
Unit： mm
Dimension：0.1mm×0.1mm，Height of Chip：0.25mm。

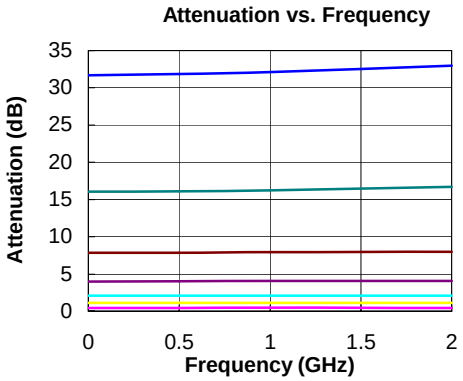
➢ Typical Electrical Specification at 25℃

Characteristic		Frequency	Min.	Typ.	Max.	Unit
Insertion Loss		DC-1.0GHz		2.8	3.0	dB
		DC-2.0GHz		3	3.2	dB
Attenuation range		DC-2.0GHz		31.5		dB
Attenuation precision		DC-2.0GHz	±(0.3+4% Attenuation in dB)			dB
VSWR		DC-2.0GHz		1.8:1	2:1	
Switch Characteristic	Rise or Fall (10/90% or90/10 %RF)			20		ns
	On or Off(50%CTLto90/10% RF)			20		ns
IP_3	Two-tone，input power +5dBm	0.5-2.0GHz		45		dBm
P_{-1}	0/-5V(0/-8V)	0.5-2.0GHz		29		dBm
Control Voltage	V_{Low}=0-0.2V@20μA Max. V_{HIGH}=-5V@20μA Max. to -8V@100μA Max.					

1. All measurements in a 50-Ω system, unless otherwise specified.
2. Insertion Loss changes 0.3dB at 85℃.

➢ Typical Performance Curves





➢ Truth Table

J1-J2	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}
	0.5	1 dB		2 dB		4 dB		8 dB		16 dB	
Refrence	-5	-5	0	-5	0	-5	0	-5	0	-5	0
0.5dB	0	-5	0	-5	0	-5	0	-5	0	-5	0
1 dB	-5	0	-5	-5	0	-5	0	-5	0	-5	0
2 dB	-5	-5	0	0	-5	-5	0	-5	0	-5	0
4 dB	-5	-5	0	-5	0	0	-5	-5	0	-5	0
8 dB	-5	-5	0	-5	0	-5	0	0	-5	-5	0
16 dB	-5	-5	0	-5	0	-5	0	-5	0	0	-5
31.5 dB	0	0	-5	0	-5	0	-5	0	-5	0	-5

➢ Absolute Maximum Ratings

Item`	Value
RF Input Power	2W, >500MHz，0/-8V
Control Voltage	-0.2V，-10V
Operation Temperature	-40℃ to 85℃
Storage Temperature	-65℃ to 150℃
θ_{JC}	25℃/W

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

➢ Chip Picture