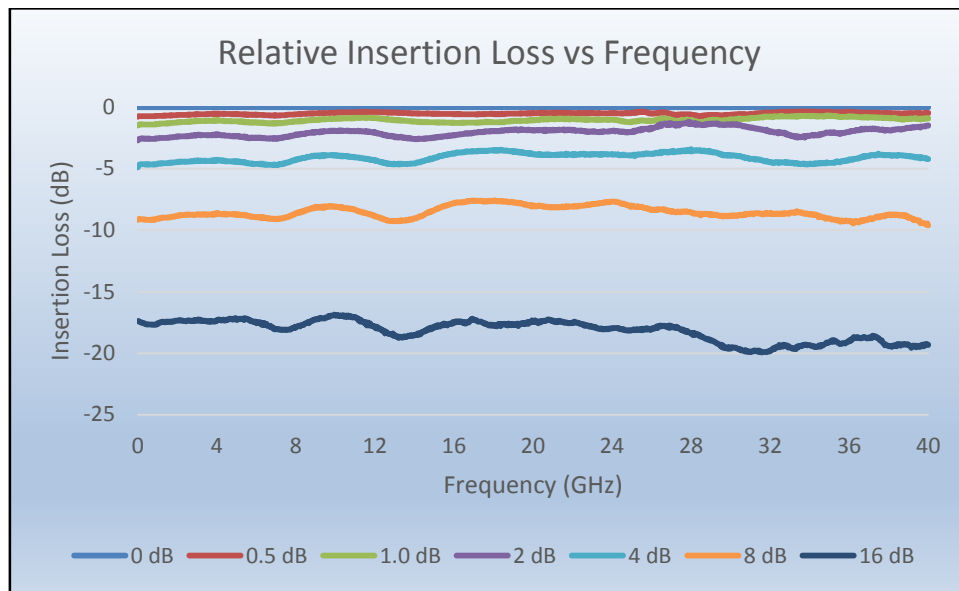


## DESCRIPTION

The HDA040-069 Digital Attenuator covers the range from DC to 40 GHz in 6-bit operation. Attenuation bit values are 0.5 dB (LSB), 1, 2, 4, 8 and 16 dB for total attenuation of 31.5 dB above the attenuator insertion loss. Low bit errors and RMS phase errors are characteristics of this attenuator. The attenuator is useful for communication systems, radars and in test equipment.



Attenuator Bias Voltage = +5 volts

| Parameter                                  | Test Conditions        | Units | Typical     |
|--|------------------------|-------|-------------|
| Insertion Loss<br>(at minimum attenuation) | DC                     | dB    | 4.0         |
|  | 1 GHz                  |       | 5.1         |
|  | 3 GHz                  |       | 6.0         |
|  | 10 GHz                 |       | 7.3         |
|  | 20 GHz                 |       | 8.4         |
|  | 30 GHz                 |       | 9.2         |
|  | 40 GHz                 |       | 11.5        |
| Return Loss                                | DC-40 GHz              | dB    | 10          |
| Attenuation Bits @ 20 GHz                  | LSB: 0.5 dB            | dB    | 0.4         |
|  | Bit 2: 1 dB            | dB    | 0.9         |
|  | Bit 3: 2 dB            | dB    | 1.8         |
|  | Bit 4: 4 dB            | dB    | 3.8         |
|  | Bit 5: 8 dB            | dB    | 8.0         |
|  | Bit 6: 16 dB           | dB    | 17.4        |
| Input P1dB                                 | DC-40 GHz              | dBm   | 23          |
| Input IP3                                  | DC-40 GHz              | dBm   | 37          |
| Switching Time                             | DC-40 GHz              | nS    | 45          |
| Control Logic                              | DC-40 GHz              | V     | 0/+5        |
| Control Current                            | Each control bit @ +5V | mA    | 6           |
| Supply Current                             | DC-40 GHz              | mA    | 17 (45 max) |
| Absolute Maximum Input Power               | DC-40 GHz              | dBm   | 35          |

Operating Temperature Range (absolute maximum): -40°C to +85°C

Storage Temperature Range (absolute maximum): -65°C to +150°C