Thin Film Surface Mount Chip Attenuators

The **ims** A-Series thin film surface mount chip attenuator line is ideal for applications requiring precision attenuation in a small form factor packages. The attenuators are provided in the “π” configuration. Thin film technology insures a low noise, precise attenuator at a very affordable price. The wraparound terminations include a nickel barrier layer which affords excellent solderability and mechanical integrity. This chip attenuator line has the following features:

- Precision thin film attenuator element
- 99.5% Al₂O₃ substrate material
- Nickel barrier layer for excellent solderability and mechanical integrity
- Ultra low noise attenuator element
- Excellent high frequency performance
- Low inductance and parasitic capacitance
- Stable characteristics over temperature and time
- Polyimide passivation of attenuator element
- Available in bulk or on tape and reel

**Terminations**

- Full wraparound

**Attenuation Ranges**

The A-Series is available in values from 0 dB to 10 dB in 1 dB increments. Standard impedance is 50Ω.

**Frequency Characteristics (A-0805)**

![Graph showing frequency characteristics](image)

- VSWR 1.5:1 max. (A-0402), 1.3:1 all others

*Performs within spec to 20 GHz when mounted face down.*
Dimensions

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-0402WA &amp; IMS2652</td>
<td>0.039 ± .004</td>
<td>0.020 ± .004</td>
<td>0.014 max.</td>
<td>0.009 ± .002</td>
</tr>
<tr>
<td>A-0603 &amp; IMS2533</td>
<td>0.063 ± .004</td>
<td>0.032 ± .004</td>
<td>0.020 max.</td>
<td>0.016 ± .006</td>
</tr>
<tr>
<td>A-0805 &amp; IMS1141</td>
<td>0.079 ± .008</td>
<td>0.049 ± .008</td>
<td>0.020 max.</td>
<td>0.020 ± .008</td>
</tr>
<tr>
<td>A-1206</td>
<td>0.126 ± .008</td>
<td>0.063 ± .008</td>
<td>0.020 max.</td>
<td>0.039 ± .010</td>
</tr>
<tr>
<td>A-1612</td>
<td>0.165 ± .008</td>
<td>0.118 ± .008</td>
<td>0.020 max.</td>
<td>0.037 ± .008</td>
</tr>
</tbody>
</table>

Characteristics

Operating Temperature  -55° to 125°C
Impedance  50 Ω

VSQR  1.3:1 maximum (except A-0402WA = 1.5:1)
Attenuation  0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16*, 20** dB

Attenuation tolerance
A-0402WA & IMS2652  ±0.3dB (0-3dB) ±0.5dB (4-7dB) ±1.0dB (8-10dB)
A-0603 & IMS2533   ±0.3dB (0-3dB) ±0.5dB (4-7dB) ±1.0dB (8-10dB)
A-0805 & IMS1141   ±0.3dB (0-10dB) ±0.5dB (16dB)
A-1206            ±0.3dB (0-10dB) ±0.5dB (16dB) ±1.0dB (20dB)
A-1612            ±0.3dB (0-10dB) ±0.5dB (16dB) ±1.0dB (20dB)

* A-1206, A-1612 only  **A-1612 only

Power Specifications

Rated Power (70°C)
A-0402WA & IMS2652  32mW
A-0603 & IMS2533   63mW
A-0805 & IMS1141   100mW
A-1206            125mW
A-1612            250mW

Ordering Information

Face Up Example: 3 dB, 100 mW, SMT 0805 attenuator.

Prefix for Face Up Attenuator
A-0805

Form factor
0402WA, 0603, 0805, 1206, 1612

Face Down Example: 3 dB, 100 mW, SMT 0805 attenuator.

IMS1141
IMS2533 = Face Down 0603
IMS1141 = Face Down 0805
IMS2652-C = Face Down
A-0402WA

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For higher dB values, higher power ratings or lead content attenuators see our IAX Series

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