High Precision Chip Attenuator

PAT Series W type

Features
- Single attenuating element realizes excellent attenuating characteristics
- Wide frequency range makes it possible to handle circuits with different frequency with ease
- The distribution of the terminals, signal terminals in the middle and ground terminal at ends, are designed for easy integration to coaxial connectors

Applications
- Attenuator for coaxial lines/circuit
- Attenuator for measuring instrumentation

Part numbering system

```
PAT 3042 - C - 3dB - A - T1
```

Electrical Specification

<table>
<thead>
<tr>
<th>Type</th>
<th>PAT3042</th>
<th>PAT4556</th>
<th>PAT3060H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>0~10dB</td>
<td>0~10dB</td>
<td>1-3,5,6,10dB</td>
</tr>
<tr>
<td><strong>Attenuation tolerance</strong></td>
<td>Refer table</td>
<td>±0.5dB</td>
<td></td>
</tr>
<tr>
<td><strong>Impedance</strong></td>
<td>50Ω</td>
<td>50Ω</td>
<td>50Ω</td>
</tr>
<tr>
<td><strong>VSWR</strong></td>
<td>&lt;1.1 (DC-2GHz)</td>
<td>&lt;1.2 (2-5GHz), &lt;1.3 (5-10GHz)</td>
<td>&lt;1.2</td>
</tr>
<tr>
<td><strong>Operating frequency</strong></td>
<td>DC ~ 10GHz</td>
<td>DC ~ 6GHz</td>
<td></td>
</tr>
<tr>
<td><strong>Rated power</strong></td>
<td>250mW</td>
<td>500mW</td>
<td>5W</td>
</tr>
<tr>
<td><strong>Rated operating temperature</strong></td>
<td>70°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>–55°C ~ 125°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Packaging quantity</strong></td>
<td>500pcs/bag (B)</td>
<td>500pcs/bag (B)</td>
<td>1000pcs/bag (B)</td>
</tr>
<tr>
<td></td>
<td>1,000pcs/reel (T1)</td>
<td>1,000pcs/reel (T1)</td>
<td>1,000pcs/reel (T1)</td>
</tr>
</tbody>
</table>

Attenuation tolerance

<table>
<thead>
<tr>
<th>Attenuation</th>
<th>Rank</th>
<th>DC ~ 2GHz</th>
<th>2 ~ 5GHz</th>
<th>5 ~ 10GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>0~10dB</td>
<td>A</td>
<td>±0.1dB</td>
<td>±0.2dB</td>
<td>±0.4dB</td>
</tr>
<tr>
<td>0~10dB</td>
<td>B</td>
<td>±0.2dB</td>
<td>±0.3dB</td>
<td>±0.5dB</td>
</tr>
<tr>
<td>16.20dB (13dB) **</td>
<td>B</td>
<td>±0.2dB</td>
<td>±0.3dB</td>
<td>±0.5dB</td>
</tr>
</tbody>
</table>

* : Applicable products: PAT3042 and PAT4556
** : Applicable product is only PAT4556

Equivalent Circuit and pin arrangement

```
Equivalent circuit

Top side
```
Dimensions

**Type** | **PAT3042** | **PAT4556** | **PAT3060H**
---|---|---|---
Size (inch) | 1612 (unit: mm) | 2218 (unit: mm) | 2412 (unit: mm)
Symbol | 0dB | 1dB | 2.3dB | 4, 5.6dB | 7, 8, 9, 10dB | 16.20dB
---|---|---|---|---|---|---
L | 4.2±0.20 | | | | | |
W | 3.0±0.20 | | | | | |
| 0.8±0.15 | | | | | |
W1 | 0.40±0.15 | 0.30±0.15 | 0.40±0.15 | | | |
W2 | 0.66±0.10 | 0.66±0.10 | 0.90±0.10 | | | |
W3 | 0.77±0.10 | 0.85±0.10 | 0.65±0.10 | | | |
L1 | — | 1.90±0.20 | 1.90±0.20 | 1.75±0.20 | 1.60±0.20 | 1.15±0.20 |
L2 | 4.20±0.20 | 0.30±0.20 | 0.30±0.20 | 0.60±0.20 | 0.90±0.20 | 1.80±0.20 |

**Recommended land patterns (soldering footprints)**

- Refer to the information on the next page on how to use PAT3042/PAT 4556
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**High frequency characteristics (measured value)**

![VSWR and Attenuation Graphs](image)

**Mounting example**

The shape of this attenuator chip is designed to match coaxial connectors’ shape so that it can be integrated easily. In this case, the center conductor should be soldered to the signal terminals (the middle terminals) and metallic shield should be soldered to the ground terminals (the end terminals.)

**Derating Curve**

![Derating Curve Graph](image)