


## REPLACEMENT PART REFERENCE GUIDE, VAT-5+

AN-70-068

|                   |         |   |
|-------------------|---------|---|
| ORIGINAL PART:    | VAT-5+  |  |
| REPLACEMENT PART: | VAT-5A+ |   |

*Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part.*

### MECHANICAL DIMENSIONS

|   |
|---|
| <b>Case Style: FF704</b>                                |
| Replacement part uses same case style as original part. |

### CONCLUSION:

1) **FORM-FIT-FUNCTIONAL ANALYSIS<sub>a</sub>:**

The Replacement Part is Form, Fit compatible.

Following is a summary of changes/improvements in the Specification:

| Parameter             | Frequency (MHz) | VAT-5+ | VAT-5A+ |
|-----------------------|-----------------|--------|---------|
| Attenuation (dB)(Nom) | 10              | 5±0.3  | 5±0.3   |
| Flatness (dB)(Typ)    | DC-3000         | 0.10   | 0.25    |
| Flatness (dB)(Typ)    | 3000-5000       | 0.10   | 0.10    |
| Flatness (dB)(Typ)    | 5000-6000       | 0.10   | 0.10    |
| Flatness (dB)(Typ)    | DC-6000         | 0.25   | 0.30    |
| VSWR(:1) (Typ)        | DC-3000         | 1.05   | 1.20    |
| VSWR(:1) (Typ)        | 3000-5000       | 1.15   | 1.20    |
| VSWR(:1) (Typ)        | 5000-6000       | 1.40   | 1.40    |
| Input Power           | DC-6000         | 1W     | 1.4W *  |

\* RF power at 25°C is 1.4W; De-rate linearly to 1.0W at 85°C

For typical performance: See paragraph 2

## 2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

**MODEL:** VAT-5+, VAT-5A+ (RF Parameters); Data of 7 samples

| Parameter        | Frequency (MHz) |      | VAT-5+ |       |       | VAT-5A+ |       |       |
|------------------|-----------------|------|--------|-------|-------|---------|-------|-------|
|                  | Low             | High | Min    | Avg   | Max.  | Min     | Avg   | Max.  |
| Attenuation (dB) | 10              |      | 5.00   | 5.01  | 5.02  | 4.91    | 4.91  | 4.91  |
| Flatness (dB)    | 10              | 3000 | 0.08   | 0.09  | 0.11  | 0.11    | 0.11  | 0.12  |
|                  | 3000            | 5000 | 0.04   | 0.05  | 0.06  | 0.03    | 0.04  | 0.04  |
|                  | 5000            | 6000 | 0.04   | 0.05  | 0.06  | 0.02    | 0.02  | 0.02  |
| Return Loss (dB) | 10              | 3000 | 24.06  | 26.66 | 28.60 | 22.22   | 23.55 | 24.98 |
|                  | 3000            | 5000 | 21.76  | 24.40 | 26.61 | 20.71   | 22.30 | 23.82 |
|                  | 5000            | 6000 | 23.07  | 25.88 | 28.84 | 21.02   | 22.74 | 24.51 |
| VSWR (:1)        | 10              | 3000 | 1.08   | 1.10  | 1.13  | 1.12    | 1.14  | 1.17  |
|                  | 3000            | 5000 | 1.10   | 1.13  | 1.18  | 1.14    | 1.17  | 1.20  |
|                  | 5000            | 6000 | 1.07   | 1.11  | 1.15  | 1.13    | 1.16  | 1.20  |

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