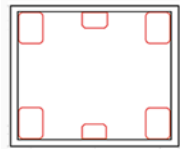
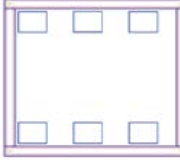


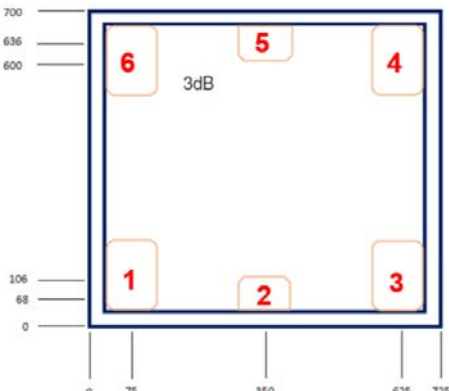
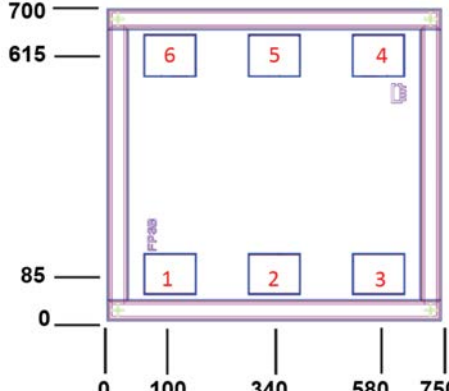
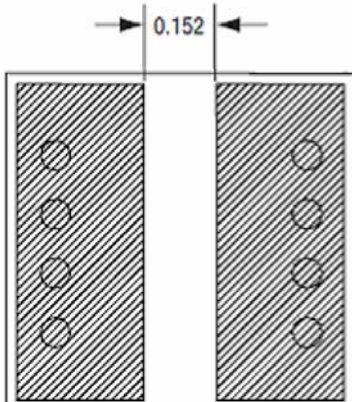
# REPLACEMENT PART REFERENCE GUIDE, YAT-3-DG+

AN-70-052

ORIGINAL PART:	YAT-3-DG+	
REPLACEMENT PART:	YAT-3A-DG+	

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

## MECHANICAL DIMENSIONS

Original Part YAT-3-DG+	Replacement Part YAT-3A-DG+
<p style="text-align: center;"><b>Top View</b> Die dimensions are in <math>\mu\text{m}</math></p>  <p style="text-align: center;">Note: Alternate Die ID: ATN3590_03</p>	<p style="text-align: center;"><b>Top View</b> Die dimensions are in <math>\mu\text{m}</math></p> 
<p style="text-align: center;"><b>Bottom View</b> Split Ground - Hatched Area (can be joined together) Dimension is in mm</p> 	<p style="text-align: center;"><b>Bottom View</b> Full Ground</p>

Dimensions			Pin-Out		
Parameter	Original Part YAT-3-DG+	Replacement Part YAT-3A-DG+	Pad#	Original Part YAT-3-DG+	Replacement Part YAT-3A-DG+
Die Width, $\mu\text{m}$	725	750		Function	
Die Length, $\mu\text{m}$	700	700	2	RF-IN	RF-IN
Die Thickness, $\mu\text{m}$	100	100	5	RF-OUT	RF-OUT
RF-IN & RF-OUT Bond Pad Size, $\mu\text{m}$	110 x 75	125 x 100	1,3,4,6	Ground	Ground
Ground Bond Pad Size, $\mu\text{m}$	110 x 150	125 x 100	Bottom of Die	Split Ground	Full Ground

## 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 (GHz)	Original Part	Replacement Part
Attenuation Typ. (dB)	DC-5	3.0	2.9±0.1
VSWR Typ. (:1)		1.1	1.1
Attenuation Typ. (dB)	5-15	3.2	3.0±0.1
VSWR Typ. (:1)		1.3	1.1
Attenuation Typ. (dB)	15-18	3.3	3.0±0.1
VSWR Typ. (:1)		1.4	1.1
Attenuation Typ. (dB)	18-26.5	3.6	3.0±0.1
VSWR Typ. (:1)		1.5	1.1

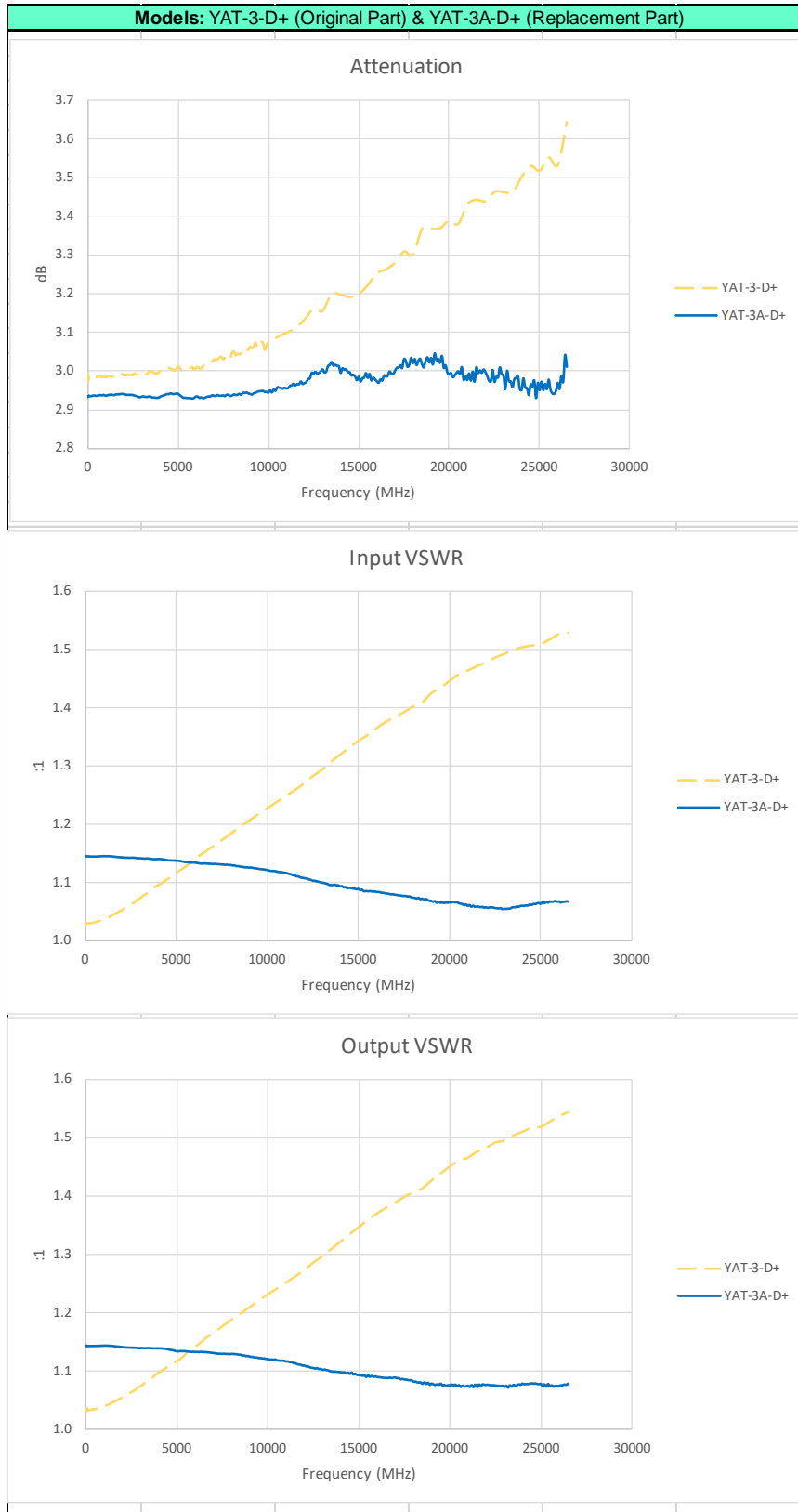
For typical performance and Graphs: See paragraphs 2 and 3

### 2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

**MODEL:** YAT-3-DG+, YAT-3A-DG+ (RF Parameters)

Parameter	Freq (MHz)		5 Units of Original Part YAT-3-D+			3 Units of Replacement Part YAT-3A-D+		
	From	To	Min.	Avg.	Max.	Min.	Avg.	Max.
Insertion Loss (dB)	10	5000	2.98	2.99	3.03	2.93	2.95	2.96
	5000	15000	3.00	3.06	3.21	2.93	2.97	3.07
	15000	18000	3.18	3.25	3.31	2.97	3.01	3.08
	18000	26500	3.28	3.46	3.64	2.92	2.99	3.07
VSWR (:1)	10	5000	1.03	1.06	1.12	1.14	1.15	1.16
	5000	15000	1.11	1.18	1.35	1.09	1.13	1.15
	15000	18000	1.31	1.36	1.41	1.08	1.10	1.12
	18000	26500	1.37	1.46	1.55	1.07	1.09	1.12

### 3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:





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