APPLICATION NOTE

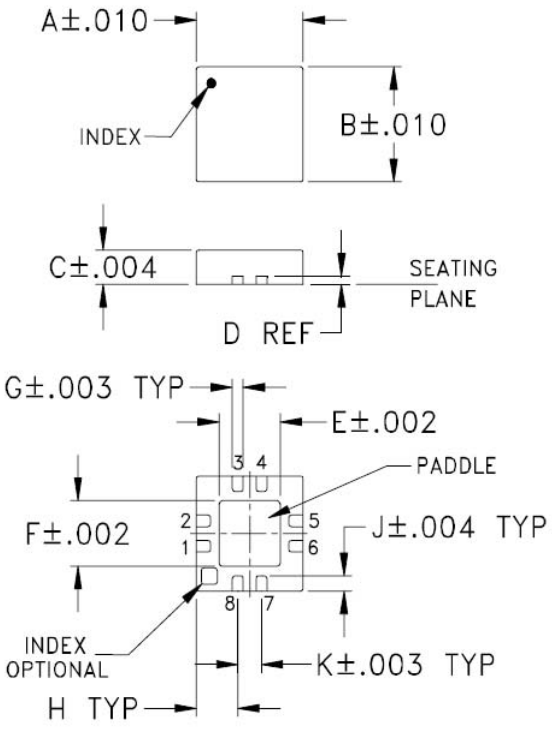
REPLACEMENT PART REFERENCE GUIDE, AVA-183+ AN-60-077

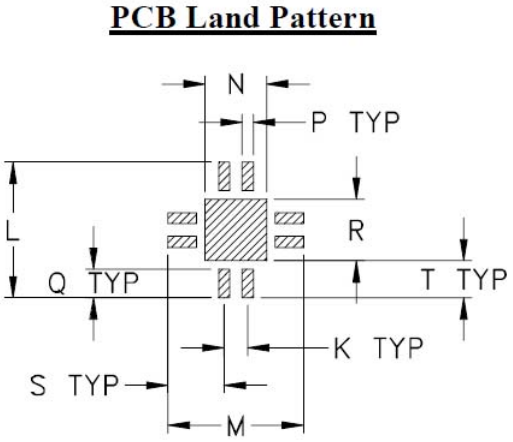
ORIGINAL PART: AVA-183+
REPLACEMENT PART: AVA-24A+

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

MECHANICAL DIMENSIONS & PCB LAND PATTERN

ORIGINAL PART: AVA-183+	REPLACEMENT PART: AVA-24A+
No Change	





Suggested Layout,
Tolerance to be within ±.002

Marking	Marking
AVA	AVA2

Notes:
a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

CONCLUSION:

1) **FORM-FIT-FUNCTIONAL COMPATIBLE**[a]:

Replacement part is Form, Fit compatible. Following is a summary of changes/improvements:

Typical performance: See paragraphs 2 and 3

Min/Max Specifications, Thermal Resistance and Max Tj- see below:

Parameter	Original Part (AVA-183+)	Replacement Part (AVA-24A+)
Gain (dB) 18 GHz	10 min	11.3 typ.
Thermal resistance (°C/W)	47	53
Max Junction Temperature (°C)	160	150

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2) **PERFORMANCE COMPARISON[a] (TYPICAL)**:

		AVA-24A+ Replacement Part 9 Units			AVA-183+ Original part
	GHz	Min	Average	Max	Average
Gain (dB)	6	12.7	12.9	13.0	13.0
	8	12.8	13.0	13.2	13.0
	10	12.4	12.5	12.7	12.5
	12	11.8	11.9	12.1	12.0
	14	11.5	11.7	11.9	11.8
	16	11.6	12.0	12.2	12.2
	18	11.3	11.6	11.8	12.0
Gain Flatness (dB)	6-18 GHz	0.6	0.7	0.9	0.6
Directivity (dB)	6	23.8	24.5	24.8	25.6
	8	21.9	22.7	23.1	25.1
	10	23.1	23.4	23.7	25.6
	12	23.4	23.8	24.2	26.3
	14	22.8	23.4	24.2	26.1
	16	20.9	21.7	23.0	25.3
	18	20.4	21.3	22.4	23.9
RL-IN (dB)	6	13.2	13.8	14.8	17.0
	8	14.5	16.7	19.0	26.9
	10	19.3	23.7	38.8	16.8
	12	15.9	18.1	20.2	11.8
	14	15.7	19.0	23.7	10.9
	16	13.8	16.6	19.7	14.7
	18	9.2	11.1	12.9	13.6
RL-OUT (dB)	6	9.3	9.9	10.5	22.9
	8	10.6	11.9	12.9	27.8
	10	13.1	14.5	16.4	17.1
	12	11.6	13.1	14.7	16.3
	14	11.8	12.5	13.4	20.4
	16	11.3	12.8	14.8	21.9
	18	11.3	12.8	16.7	15.0
OIP3-Min of	6	27.4	27.7	28.2	30.6
LSB & USB (dBm)	8	26.6	26.9	27.4	30.7
Pout=8 dBm/tone	10	25.7	26.0	26.5	30.6
	12	25.0	25.2	25.7	30.3
	14	24.0	24.2	24.7	29.7
	16	22.9	23.2	23.6	29.7
	18	22.0	22.2	22.5	29.1
P1dB (dBm)	6	19.0	19.1	19.2	19.5
	8	19.1	19.4	19.6	19.1
	10	18.9	19.3	19.5	18.5
	12	18.4	18.7	18.9	18.8
	14	19.7	20.0	20.1	19.0
	16	19.4	19.8	20.1	18.8
	18	20.0	20.3	20.5	18.6
NF (dB)	6	6.1	6.2	6.3	6.4
	8	4.8	4.9	5.1	5.8
	10	5.2	5.2	5.3	5.9
	12	5.5	5.6	5.7	6.0
	14	5.8	5.9	6.0	6.0
	16	6.0	6.1	6.3	5.8
	18	6.2	6.4	6.7	5.7
DC Current (mA)		116.3	119.5	122.4	128.8

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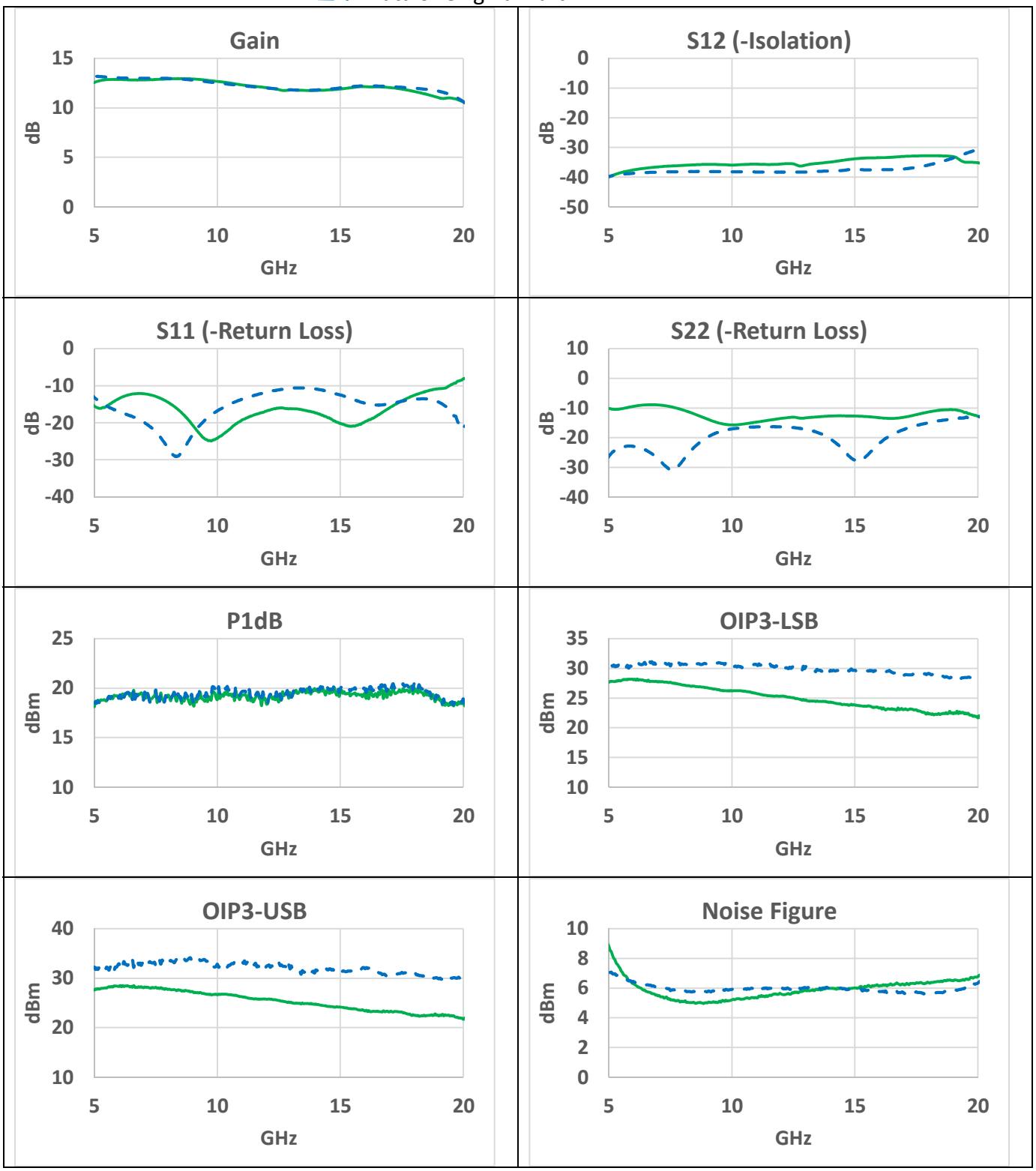
3) PERFORMANCE COMPARISON CURVES[a] (TYPICAL):

Data of Replacement Part
Data of Original Part



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