



REPLACEMENT PART REFERENCE GUIDE, DAT-15R5-SP+: AN-70-015

ORIGINAL PART: REPLACEMENT PART:

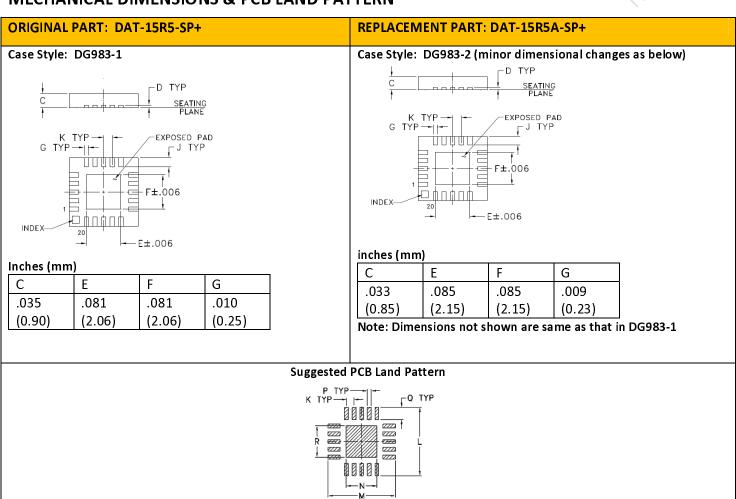
DAT-15R5-SP+

DAT-15R5A-SP+



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

MECHANICAL DIMENSIONS & PCB LAND PATTERN



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.

Ν

.081

(2.06)

Μ

.177

(4.50)

P

.010

(0.25)

Q

.032

(0.81)

R

.081

(2.06)

.020

(0.50)

.177

(4.50)



CONCLUSION:

1) FORM-FIT-FUNCTIONAL COMPATIBLE_a:

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

Parameter			DAT-15R5-SP+	DAT-15R5A-SP+	
			(Original Part)	(Replacement Part)	
VDD(V)			+2.7 to +3.3	+2.3 to +3.6, usable to +5.2V	
Control input High (V)			0.7 Vdd to Vdd	+1.17 to +3.6	
Control input Low (V)			0 to 0.3VDD	-0.3 to +0.6	
IDD (μA)			100 μA max.	200 μA max.	
			During turn-on and transition		
			between attenuation states, device		
			may draw up to 2mA.		
Control Current (μA)			1 max	1 max, except 30μA typ for C0.5 & 2 μA	
				typ. for LE at +3.6V	
Attenuation	Step	<u>Freq</u>	Spec max	Spec max	
accuracy	<u>(dB)</u>	<u>(GHz)</u>			
	0.5	2.2-2.4	0.3	0.15	
		2.4-4.0	0.3	0.2	
	1.0	2.2-2.4	0.3	0.15	
		2.4-4.0	0.3	0.25	
	2.0	2.2-2.4	0.45	0.25	
		2.4-4.0	0.45	0.35	
	4.0	2.2-2.4	0.45	0.25	
		2.4-4.0	0.45	0.5	
	8.0	1-2.2	0.25	0.5	
		2.2-2.4	0.8	0.5	
Attenuation (dB) 1-2.2 2.2-2.4 2.2-4		1-2.2	2.5	2.4	
		2.2-2.4	4.7	2.4	
		2.2-4	4.7	3.0	
VSWR (:1) (1-2.4 GHz)			1.5 max	1.6 Max	
Operating Temperature (°C)			-40 to 85	-40 to 105	
Storage Temperature(°C)			-55 to 100	-65 to 150	
ESD (HBM)			Pass 500V	Pass 1500V	
Max Operating Power			Not Specified	From 10 kHz to 50 MHz per Figure 1 (in	
				Model Data Sheet) and +24 dBm above	
				50 MHz	
Absolute Max input Power			+24	+30	
(dBm)					

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APPLICATION NOTE

2) PERFORMANCE COMPARISON_a(TYPICAL)_a:

Parameter	Frequency	DAT-15R5+ (Original Part)	DAT-15R5A+ (Replacement Part)
raiailletei	(GHz)	Average	Average
I.Loss(dB)	0.01 to 1	1.43	1.20
, ,	1 to 2.2	1.74	1.43
	1 to 2.4	1.76	1.46
	2.2 to 4	2.62	2.09
Step Accuracy	0.01 to 1	0.02	0.03
0.5 dB Step (dB)	1 to 2.2	0.01	0.04
,	1 to 2.4	0.02	0.04
	2.2 to 4	0.06	0.04
Step Accuracy	0.01 to 1	0.00	0.03
1.0 dB Step (dB)	1 to 2.2	0.00	0.04
	1 to 2.4	0.01	0.04
	2.2 to 4	0.03	0.04
Step Accuracy	0.01 to 1	0.03	0.03
2.0 dB Step (dB)	1 to 2.2	0.06	0.04
	1 to 2.4	0.06	0.05
	2.2 to 4	0.12	0.07
Step Accuracy	0.01 to 1	0.02	0.03
4.0 dB Step (dB)	1 to 2.2	0.02	0.06
	1 to 2.4	0.03	0.07
	2.2 to 4	0.02	0.10
Step Accuracy	0.01 to 1	0.04	0.02
8.0 dB Step (dB)	1 to 2.2	0.06	0.11
	1 to 2.4	0.05	0.13
	2.2 to 4	0.08	0.35
Input R.Loss (dB)	0.01 to 1	16.9	18.2
	1 to 2.2	18.3	18.2
	1 to 2.4	18.9	18.5
	2.2 to 4	22.5	18.2
Output R.Loss	0.01 to 1	17.4	18.7
	1 to 2.2	18.4	18.8
	1 to 2.4	18.7	18.7
	2.2 to 4	22.7	17.8



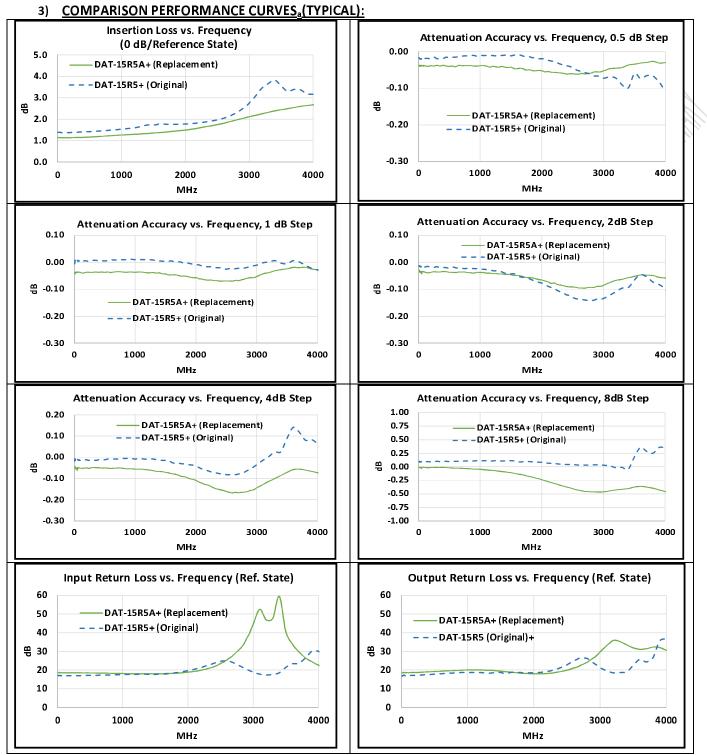
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APPLICATION NOTE



Note: DAT-15R5+ is same as DAT-15R5-SP+ and DAT-15R5A+is same as DAT-15R5A-SP+

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