

REPLACEMENT PART REFERENCE GUIDE, ZYSWA-2-50DR

AN-80-019

ORIGINAL PART: ZYSWA-2-50DR

REPLACEMENT PART: ZYSWA-2-50DR+ (RoHS version)



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

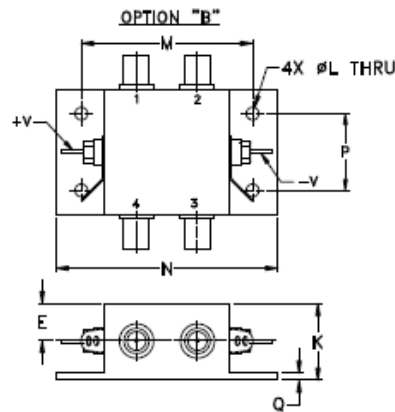
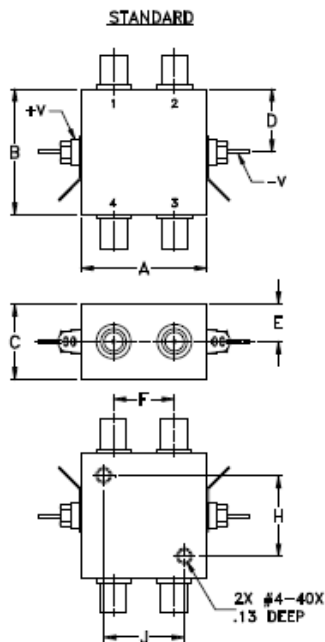
MECHANICAL DIMENSIONS

ORIGINAL PART: ZYSWA-2-50DR	REPLACEMENT PART: ZYSWA-2-50DR+
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Case Style ZZ121 (No Change)

Outline Dimensions

ZZ121



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
ZZ121	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.00)	.38 (9.65)	.61 (15.49)	--	.800 (20.32)	.800 (20.32)	.76 (19.30)	.125 (3.18)	1.688 (42.88)	2.18 (55.37)

CASE#	P	Q	WT.GRAMS
ZZ121	.75 (19.05)	.07 (1.78)	85.0

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

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 ANALYSIS_a:**

The Replacement part is Form, Fit compatible.

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

For typical performance and Graphs: See paragraphs 2 and 3

Parameter	Frequency (MHz)		Current Design			New Design		
	Min.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
Insertion Loss (dB)	0.1	500		1.10	1.50		0.80	1.50
	500	2000		1.40	1.90		1.30	1.90
	2000	5000		1.90	-		1.90	-
Isolation (dB) IN-OUT	0.1	500	38.00	42.00		38.00	50.00	
	500	2000	27.00	31.00		27.00	45.00	
	2000	5000	19.00	20.00		17.00	20.00	
VSWR (:1) IN PORT	0.1	3000		1.40	2.00		1.45	
	3000	5000			2.50		1.65	
VSWR (:1) OUT PORT (ON)	0.1	3000		1.40	2.00		1.30	
	3000	5000			2.50		1.45	
VSWR (:1) OUT PORT (OFF)	0.1	3000		1.40	2.00		1.20	
	3000	5000			2.50		1.55	
Compression 1 dB	10	500	13.00	18.00		>	20	
	500	2000	17.00	20.00		>	24	
	2000	5000	20.00	22.50		>	23	
Max. Input Power (dBm)	-	-			24			31*
Switching time [ns], 50% of Control to 90% RF(Turn-on) and 10% RF(Turn-off)	-	-		20	40		20	
Rise/Fall time [ns] (10%-90%)	-	-		6	12		6	

* Frequency = 500-5000 MHz.

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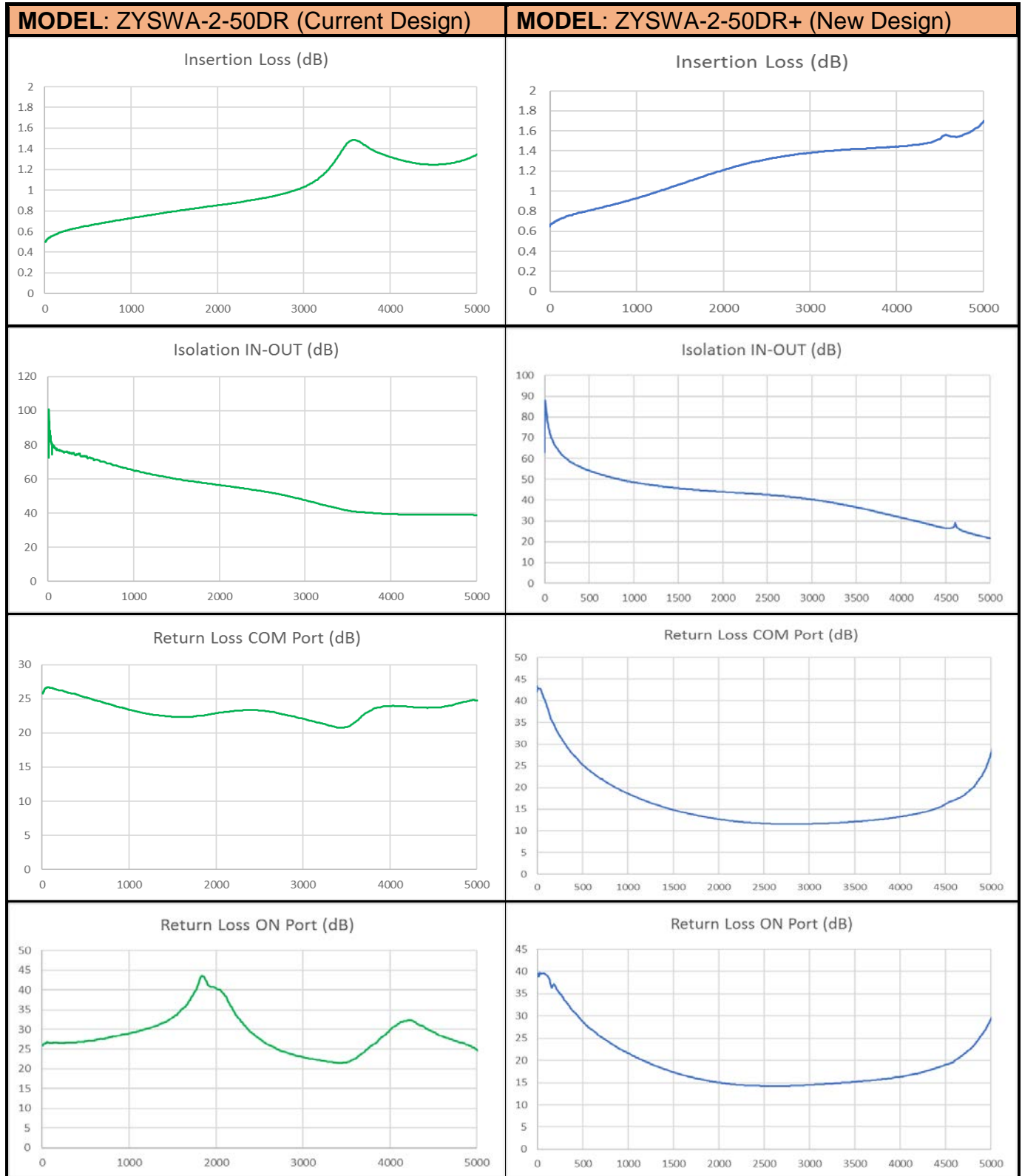
2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

MODEL: ZYSWA-2-50DR+ (RF Parameters)

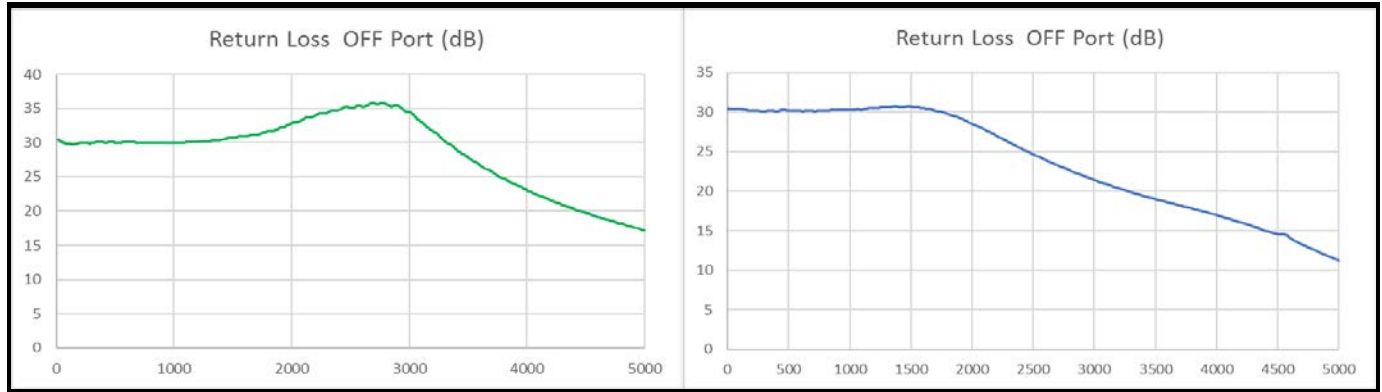
RF Parameters	Frequency		Current Design @ 1 Unit			New Design @ 5 Units		
	Low	High	Min.	Ave.	Max.	Min.	Ave.	Max.
Insertion Loss S-1(ON) (dB)	10	500	0.51	0.60	0.68	0.65	0.74	0.83
	500	2000	0.68	0.77	0.88	0.81	1.01	1.23
	2000	5000	0.88	1.19	1.48	1.21	1.42	1.83
Insertion Loss S-2(ON) (dB)	10	500	0.49	0.55	0.63	0.64	0.73	0.82
	500	2000	0.63	0.72	0.83	0.80	1.00	1.21
	2000	5000	0.83	1.15	1.49	1.18	1.41	1.80
Isolation S-2 (1-ON) (dB)	10	500	71.36	77.62	94.16	54.17	65.00	88.94
	500	2000	56.64	64.19	71.51	43.85	47.64	54.33
	2000	5000	39.38	45.44	56.64	20.86	34.79	44.03
Isolation S-1 (2-ON) (dB)	10	500	70.48	78.58	109.02	54.04	65.05	89.59
	500	2000	56.25	64.63	73.40	43.90	47.67	54.31
	2000	5000	38.15	43.93	56.25	20.59	35.61	61.08
Return Loss SUM Port [1(ON)] (dB)	10	3000	21.03	23.92	26.28	11.17	19.49	44.55
	3000	5000	19.70	21.99	24.51	11.32	14.74	35.88
Return Loss SUM Port [2(ON)] (dB)	10	3000	22.50	24.82	27.14	11.18	19.61	43.43
	3000	5000	21.77	24.10	25.38	11.31	14.65	33.86
Return Loss Port 1(ON) (dB)	10	3000	22.44	29.03	50.95	13.63	21.65	39.54
	3000	5000	21.31	26.84	32.45	14.05	17.88	36.96
Return Loss Port 1(OFF) (dB)	10	3000	29.63	31.25	35.88	21.76	29.63	38.00
	3000	5000	17.00	22.53	30.51	11.65	17.44	22.69
Return Loss Port 2(ON) (dB)	10	3000	23.52	29.23	43.60	13.67	21.84	40.22
	3000	5000	21.40	25.91	32.24	13.96	17.55	31.80
Return Loss Port 2(OFF) (dB)	10	3000	29.68	31.21	39.32	19.53	27.40	31.28
	3000	5000	17.32	25.56	38.33	9.92	15.99	22.13

Notes:
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3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:



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4) SWITCHING TIME CHARACTERISTICS AND VIDEO LEAKAGE

MODEL: ZYSWA-2-50DR+ (Redesigned Model)

Supply Voltage (V)		5, -5	5, -5	5, -5	5, -5	5, -5
Control voltage (V)		5,0	5,0	5,0	5,0	5,0
Measurement Port	Parameter	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Port 1	On time (ns)	16.88	17.22	16.94	17.31	17.19
	Off time (ns)	18.53	18.72	18.62	19.06	18.53
Port 2	On time (ns)	20.25	20.41	20.22	20.84	21.47
	Off time (ns)	14.72	15.03	14.78	15.47	15.28
Port 1	Rise time (ns)	4.50	4.28	4.66	4.06	4.47
	Fall time (ns)	5.50	5.78	5.44	5.97	5.31
Port 2	Rise time (ns)	3.91	4.25	4.12	4.69	5.22
	Fall time (ns)	5.03	5.34	5.12	5.78	5.66
Port 1	On Video Leakage (mV p-p)	21.20	19.20	19.20	20.80	18.40
	Off Video Leakage (mV p-p)	33.80	30.80	28.60	31.10	30.50
Port 2	On Video Leakage (mV p-p)	18.40	15.60	20.00	18.20	18.40
	Off Video Leakage (mV p-p)	30.70	28.10	28.30	27.80	28.10

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