REPLACEMENT PART REFERENCE GUIDE, ZASWA2-50DR-FT+ AN-80-022

ORIGINAL PART: ZASWA2-50DR-FT+

REPLACEMENT PART: ZASWA2-50DR-FA+

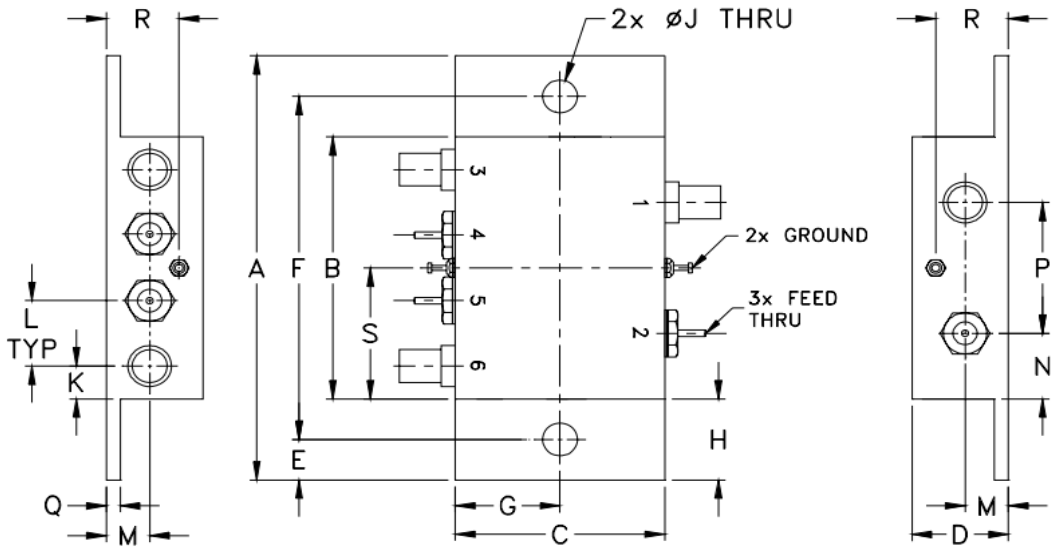
Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part[a]

MECHANICAL DIMENSIONS

ORIGINAL PART: ZASWA2-50DR-FT+	REPLACEMENT PART: ZASWA2-50DR-FA+

Case Style CY1481

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
CY1481	3.24 (82.30)	2.00 (50.80)	1.50 (38.10)	.69 (17.53)	.31 (7.87)	2.620 (66.55)	.75 (19.05)	.62 (15.75)	.250 (6.35)	.25 (6.35)	.50 (12.70)	.31 (7.87)	.50 (12.70)

CASE#	P	Q	R	S	WT. GRAMS
CY1481	1.00 (25.40)	.10 (2.54)	.52 (13.21)	1.00 (25.40)	80.0

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		Current Design			New Design		
	Min.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
Insertion Loss (dB)	DC	100		1.10	1.80		1.30	2.00
	100	1000		1.30	2.00		1.70	2.50
	1000	2000		1.70	2.50		1.80	3.00
	2000	5000		3.00	4.00		3.00	4.50
Isolation (dB) IN-OUT	DC	100	75.00	100.00		68.00	90.00	
	100	1000	70.00	90.00		75.00	90.00	
	1000	2000	60.00	82.00		65.00	82.00	
	2000	5000	48.00	63.00		40.00	65.00	
VSWR (:1) COM PORT	DC	5000		1.30			1.50	
VSWR (:1) OUT PORT (ON)	DC	5000		1.30			1.45	
VSWR (:1) OUT PORT (OFF)	DC	5000		1.30			1.35	
Compression 1 dB	DC	100		17.00			-	
	100	1000		20.00			> 20	
	1000	2000		20.00			> 24	
	2000	5000		19.00			> 23	
Max. Input Power (dBm)	-	-			24			31*
Switching time [ns], 50% of Control to 90% RF(Turn-on) and 10% RF(Turn-off)	-	-		10	20		20	
Rise/Fall time [ns] (10%-90%)	-	-		5	15		5	

* Frequency = 500-5000 MHz.

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2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

RF Parameter	Frequency		Current Design			New Design		
	Low	High	Min.	Ave.	Max.	Min.	Ave.	Max.
Insertion Loss COM-1(ON) (dB)	0.3	100	0.93	1.00	1.09	1.07	1.14	1.22
	100	1000	1.07	1.20	1.30	1.20	1.39	1.56
	1000	2000	1.28	1.38	1.49	1.53	1.62	1.71
	2000	5000	1.46	2.18	3.12	1.67	2.36	3.06
Insertion Loss COM-2(ON) (dB)	0.3	100	0.94	1.02	1.10	1.07	1.14	1.23
	100	1000	1.09	1.21	1.31	1.20	1.39	1.55
	1000	2000	1.28	1.39	1.50	1.52	1.62	1.70
	2000	5000	1.46	2.19	3.00	1.67	2.30	3.07
Return Loss COM Port [1(ON)] (dB)	0.3	5000	14.37	20.67	30.49	9.52	17.48	59.42
Return Loss COM Port [2(ON)] (dB)	0.3	5000	13.78	20.60	34.98	9.78	17.67	54.72
Return Loss Port 1(ON) (dB)	0.3	5000	12.07	21.03	37.34	11.39	20.61	39.51
Return Loss Port 1(OFF) (dB)	0.3	5000	12.07	21.03	37.34	11.24	25.34	33.28
Return Loss Port 2(ON) (dB)	0.3	5000	10.40	20.44	30.67	12.69	21.06	45.81
Return Loss Port 2(OFF) (dB)	0.3	5000	10.40	20.44	30.67	11.74	26.05	34.08
Isolation COM-2 (1-ON) (dB)	0.3	100	95.81	107.17	136.47	74.58	97.23	133.80
	100	1000	93.42	102.28	112.33	91.93	98.62	109.94
	1000	2000	82.39	96.64	114.73	85.00	91.85	101.57
	2000	5000	63.77	77.18	112.89	44.19	69.94	86.87
Isolation COM-1 (2-ON) (dB)	0.3	100	96.63	110.43	130.64	74.56	97.32	133.35
	100	1000	95.59	99.86	109.86	93.06	103.84	131.99
	1000	2000	80.56	89.21	102.43	85.14	92.83	106.13
	2000	5000	59.04	72.21	90.59	47.38	72.33	87.18

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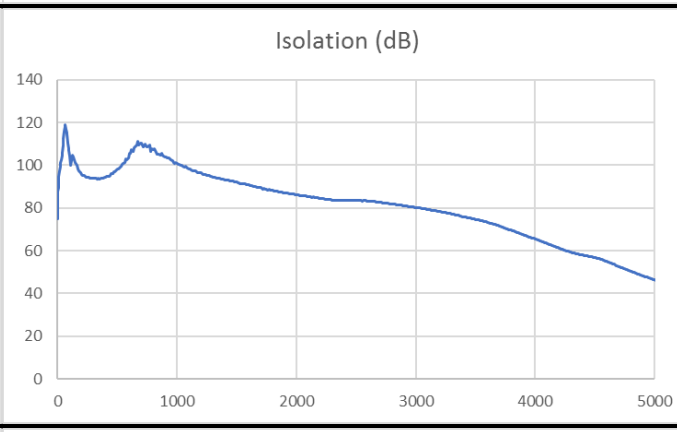
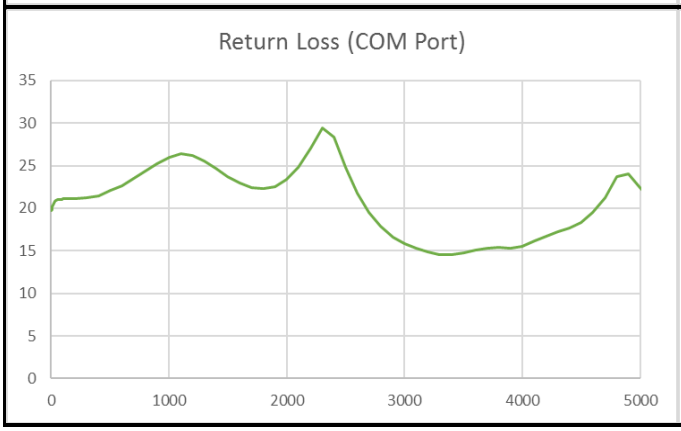
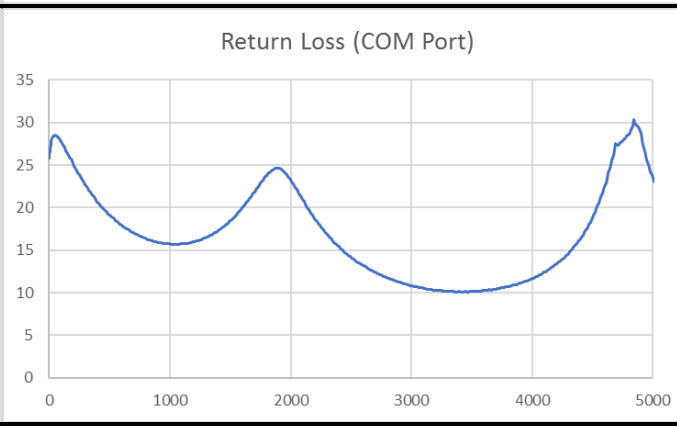
3) **TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE**:

MODEL: ZASWA2-50DR-FT+ (Current Design)	**MODEL**: ZASWA2-50DR-FA+ (New Design)
	
	
	

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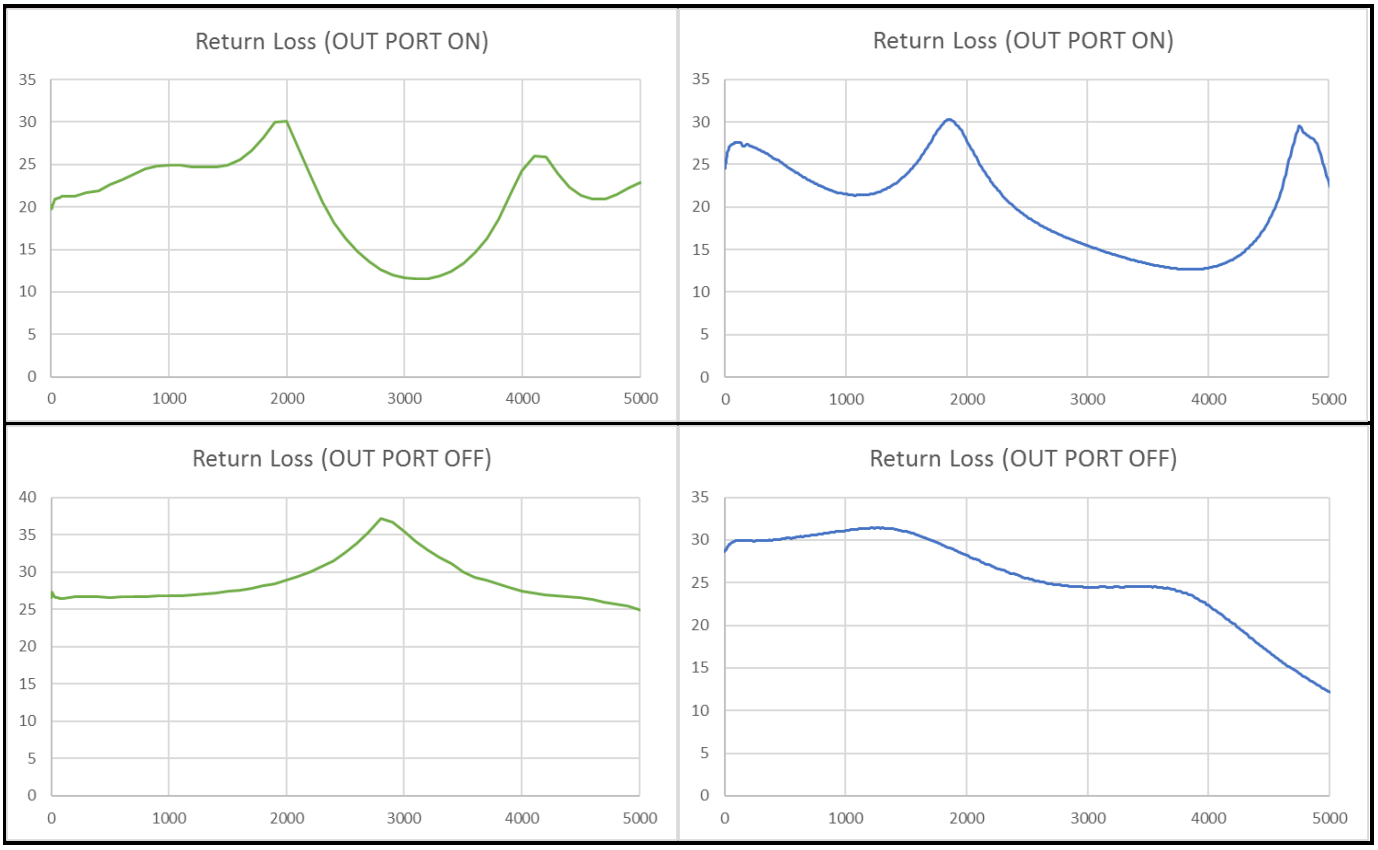

4) SWITCHING TIME CHARACTERISTICS AND VIDEO LEAKAGE

MODEL : ZASWA2-50DR-FA+ (New Design)

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)*	19.22	19.09	19.16	18.94	19.25
	Off time (ns)	16.62	16.41	16.53	16.38	15.59
Port 2	*On time (ns)*	23.44	22.5	24.38	22.50	23.06
	Off time (ns)	13.09	12.66	13.28	12.81	12.31
Port 1	*Rise time (ns)*	4.22	4.16	3.53	4.16	4.28
	Fall time (ns)	4.09	3.94	3.53	3.84	3.38
Port 2	*Rise time (ns)*	4.28	3.34	5.16	3.69	3.78
	Fall time (ns)	3.84	3.44	4.06	3.59	3.22
Port 1	*On Video Leakage (mV p-p)*	20.70	20.10	21.40	21.50	19.40
	Off Video Leakage (mV p-p)	41.00	40.80	44.40	44.60	39.30
Port 2	*On Video Leakage (mV p-p)*	17.90	18.10	21.70	19.70	19.60
	Off Video Leakage (mV p-p)	39.60	41.50	40.50	42.00	36.40

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