

# Coaxial Amplifier

## ZHL-42W+

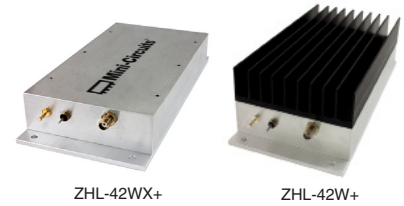
50Ω Medium High Power 10 to 4200 MHz

### Features

- wideband, 10 to 4200 MHz
- high IP3, +38 dBm typ.
- high gain, 30 dB min.

### Applications

- communication systems
- cellular
- instrumentation
- laboratory



ZHL-42WX+

ZHL-42W+

CASE STYLE: U36

Connectors	Model
SMA	ZHL-42W+
SMA	ZHL-42WX+

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications at 25°C

Parameter	Condition (MHz)	ZHL-42W+ ▲ZHL-42WX+			Units
		Min.	Typ.	Max.	
Frequency Range		10	—	4200	MHz
Gain	10-4200	30	34	40	dB
Gain Flatness	10-4200	—	±1.3	±1.8	dB
Output Power at 1dB compression*	10-4200	+28	+30	—	dBm
Output Power at 3dB compression**	10-4200	+29	+31	—	dBm
Noise Figure	10-4200	—	6	—	dB
Output third order intercept point	10-4200	—	+38	—	dBm
Input VSWR	10-4200	—	—	2.5	:1
Output VSWR	10-4200	—	—	2.7	:1
DC Supply Voltage		—	15	—	V
Supply Current		—	—	1.0	A

Open load is not recommended, potentially can cause damage.

With no load derate max. input power by 20 dB.

\* +27 dBm at 3700-4200 MHz

\*\* +28 dBm at 3700-4200 MHz

▲Heat sink not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 65°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 1.3°C/W max.

### Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 65°C
Storage Temperature	-55°C to 100°C
DC Voltage	+20V
Input RF Power (no damage)	+3 dBm

Permanent damage may occur if any of these limits are exceeded.

#### Notes

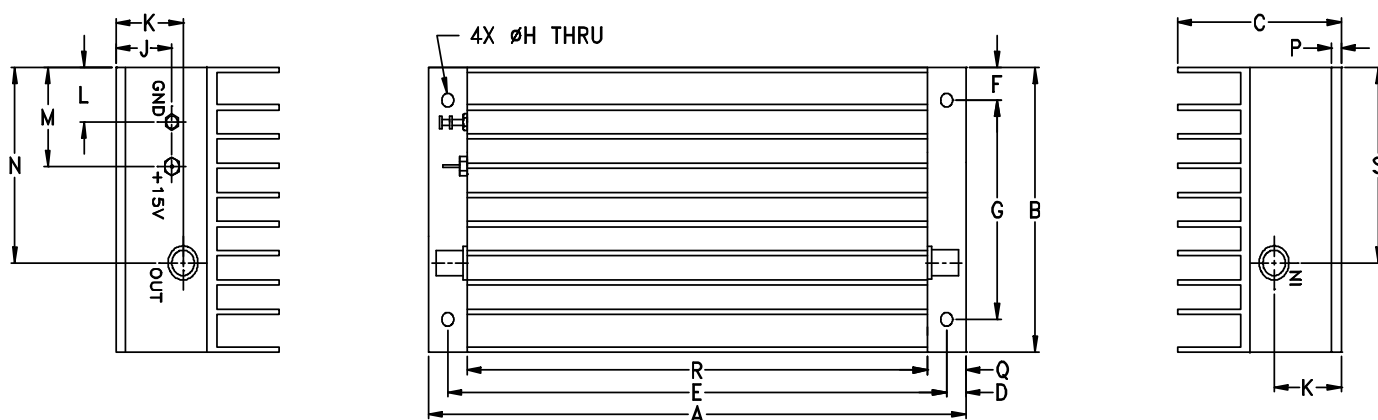
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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

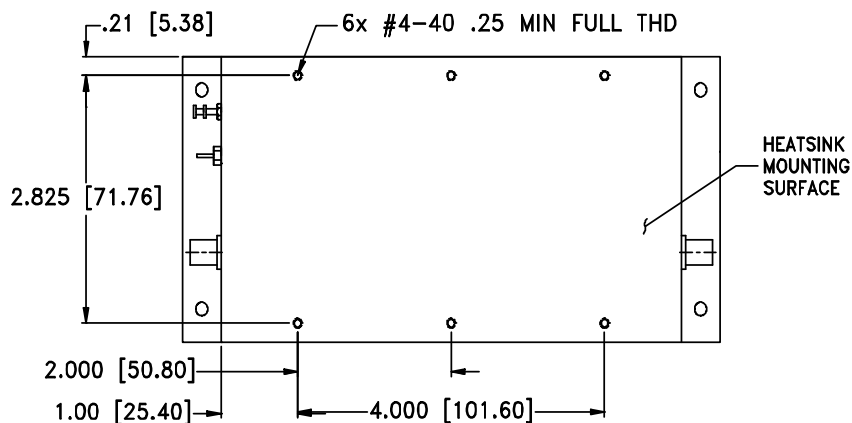
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## Outline Drawing for models with heatsink



### MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt
7.00	3.25	2.13	.25	6.500	.38	2.500	.156	.73	.88	.63	1.13	2.23	.125	.50	6.00	2.23	grams
177.80	82.55	54.10	6.35	165.10	9.65	63.50	3.96	18.54	22.35	16.00	28.70	56.64	3.18	12.70	152.40	56.64	900

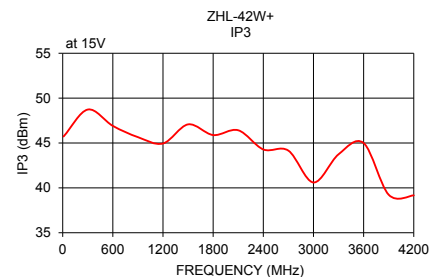
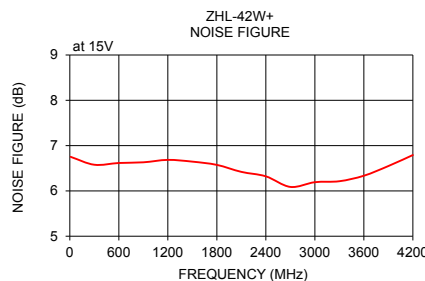
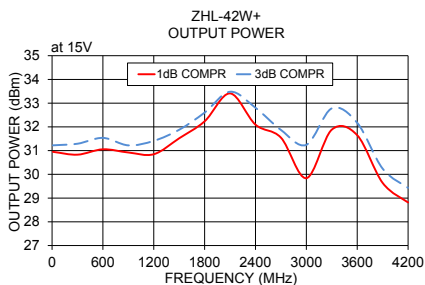
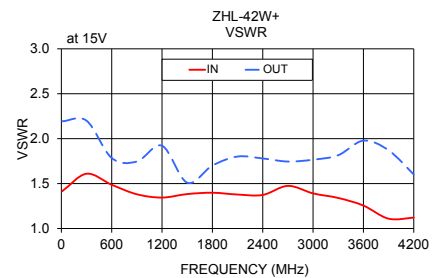
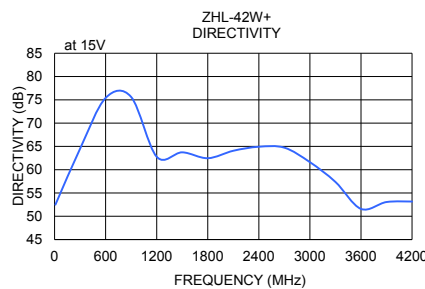
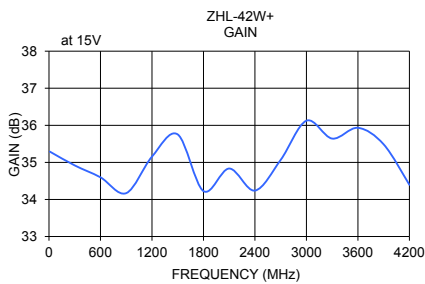
\*600 grams without heatsink

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	15V	15V	IN	OUT	15V	15V	15V
10	35.29	52.49	1.42	2.19	30.95	6.75	45.72
300	34.92	64.51	1.61	2.20	30.83	6.58	48.73
600	34.60	75.41	1.49	1.78	31.06	6.62	46.90
900	34.17	75.61	1.38	1.75	30.92	6.63	45.65
1200	35.15	62.78	1.34	1.92	30.85	6.68	44.95
1500	35.75	63.73	1.38	1.51	31.52	6.65	47.07
1800	34.23	62.47	1.40	1.70	32.24	6.57	45.88
2100	34.83	64.07	1.38	1.80	33.41	6.42	46.42
2400	34.24	64.93	1.37	1.78	32.09	6.32	44.28
2700	35.07	64.73	1.47	1.75	31.55	6.09	44.15
3000	36.12	61.62	1.39	1.77	29.84	6.19	40.60
3300	35.64	57.37	1.34	1.82	31.88	6.21	43.74
3600	35.93	51.58	1.26	1.98	31.65	6.34	45.00
3900	35.49	53.06	1.11	1.87	29.64	6.55	39.23
4200	34.39	53.16	1.12	1.60	28.82	6.79	39.17



**Notes**

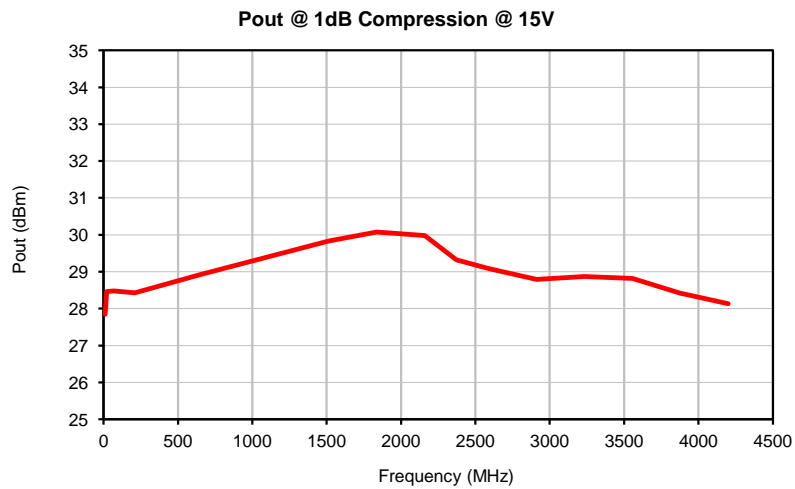
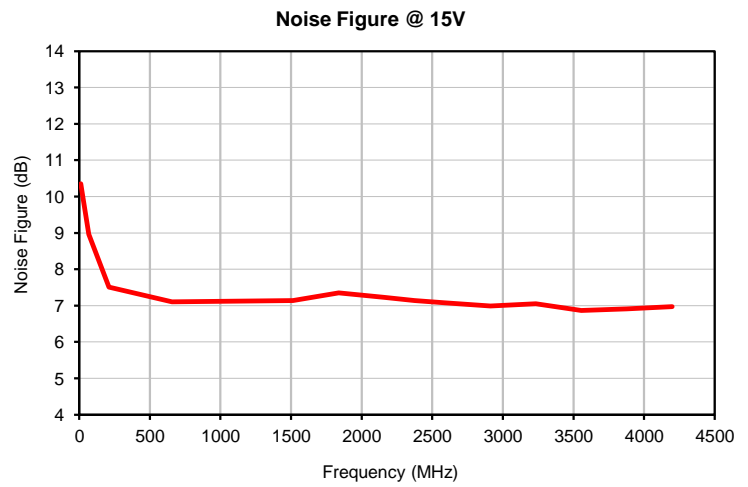
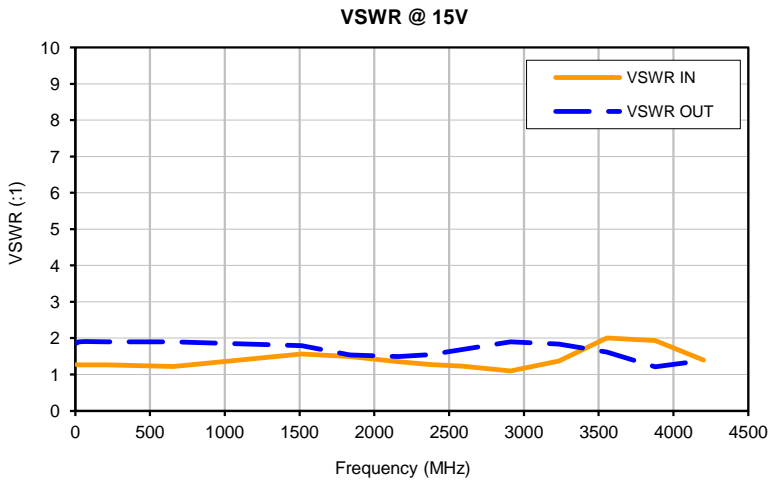
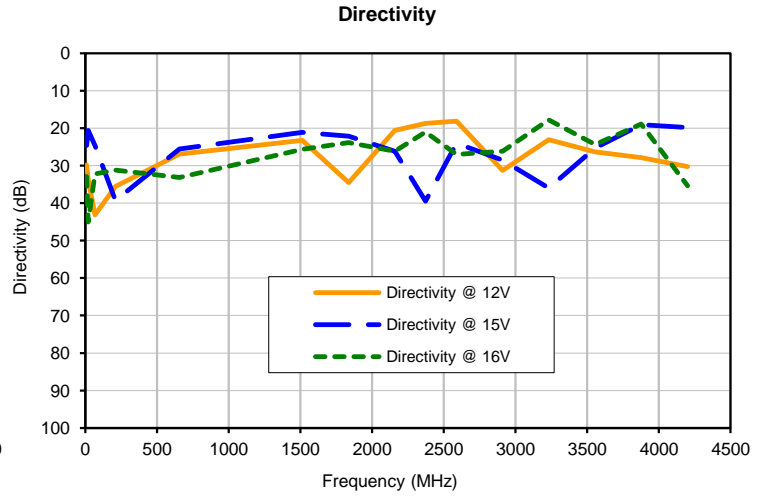
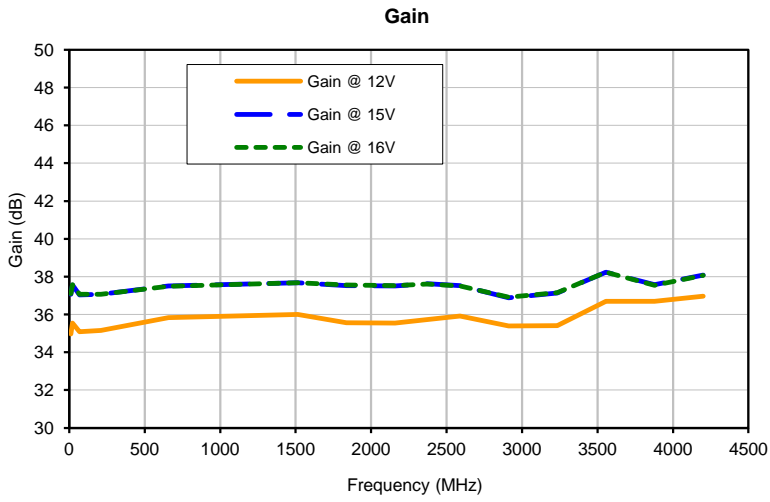
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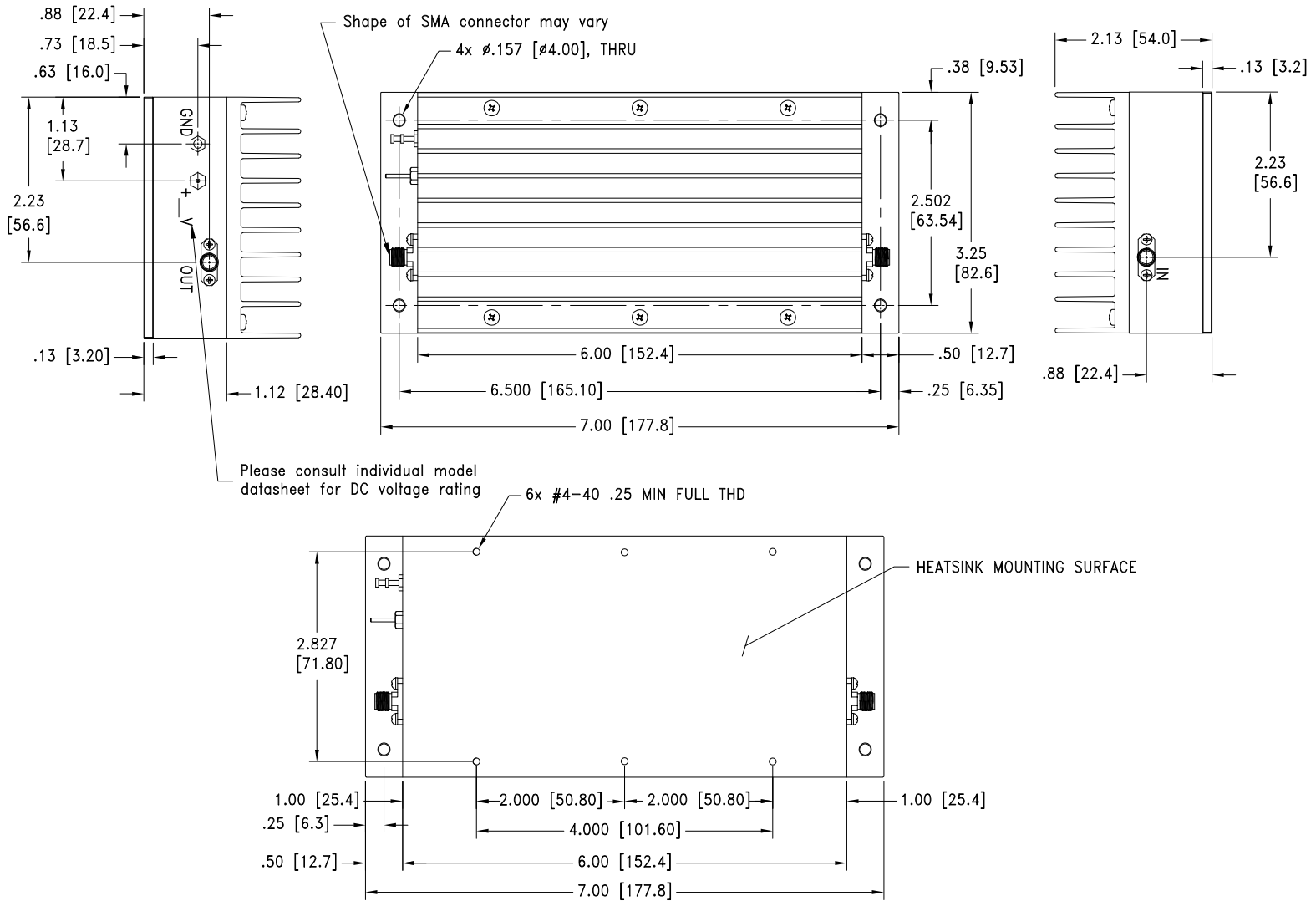


## Typical Performance Data

FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR IN (:1) 15V	VSWR OUT (:1) 15V	NOISE FIGURE (dB) 15V	Pout at 1dB Comp. (dBm) 15V
	12V	15V	16V	12V	15V	16V				
10.0	34.97	37.07	37.10	29.80	24.60	32.90	1.27	1.86	10.35	27.85
21.4	35.54	37.56	37.57	33.70	20.60	45.00	1.26	1.90	10.07	28.46
67.0	35.09	37.04	37.06	43.10	24.60	32.20	1.26	1.91	8.96	28.48
209.9	35.15	37.07	37.06	35.50	39.30	31.20	1.26	1.90	7.51	28.43
657.2	35.83	37.51	37.49	26.90	25.50	33.10	1.22	1.90	7.10	28.93
1514.1	36.00	37.68	37.68	23.20	21.10	25.60	1.56	1.79	7.14	29.83
1836.4	35.56	37.53	37.56	34.50	22.10	23.80	1.49	1.54	7.35	30.08
2158.7	35.54	37.51	37.53	20.60	26.10	26.10	1.35	1.49	7.23	29.98
2373.6	35.73	37.62	37.61	18.70	39.50	21.00	1.27	1.55	7.14	29.32
2588.5	35.92	37.53	37.51	18.10	24.00	27.00	1.23	1.69	7.08	29.09
2910.8	35.39	36.89	36.92	31.30	28.50	26.10	1.10	1.90	6.99	28.79
3233.1	35.41	37.14	37.16	23.10	36.00	17.80	1.37	1.84	7.05	28.87
3555.4	36.69	38.23	38.23	26.30	25.30	24.30	2.00	1.62	6.87	28.82
3877.7	36.70	37.58	37.55	27.80	19.00	18.90	1.93	1.21	6.91	28.42
4200.0	36.96	38.09	38.07	30.20	19.80	35.40	1.40	1.39	6.97	28.13

## Typical Performance Curves





#### MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK

Weight: 900.0 grams      Weight without heatsink: 600.0 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.  $\pm$ 03; ; 3 Pl.  $\pm$ .015 Inch

#### Notes:

1. Case material: Aluminum alloy.
2. Case finish and mounting bracket finish:  
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

For Non-RoHS Case Styles: Yellow hexavalent chrome based conversion coating.  
Due to transition from non-RoHS to RoHS, models will be supplied with either case style finish until the non-RoHS case inventory is depleted.

3. Heat sink finish: Black anodize.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/IF MICROWAVE COMPONENTS

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-20° to 65° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C