COAXIAL

Medium High Power Amplifier ZHL-4240W+ ZHL-4240WX+

50Ω 10 to 4200 MHz

FEATURES

- Wideband, 10 to 4200 MHz
- High Gain, 39 dB Min.
- High IP3, +38 dBm typ.

Generic photo used for illustration purposes only

Model No.	ZHL-4240W+	ZHL-4240WX+▲
Case Style	U36	
Connectors	SMA	

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- Communication Systems
- Cellular
- Instrumentation
- Laboratory

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	ZHL-4240W+ ZHL-4240WX+ ▲ Min.	Typ.	Max.	Units
Frequency Range	10	—	4200	MHz
Gain	39	42	47	dB
Gain Flatness	—	±1.3	±1.8	dB
Output Power at 1dB compression[1]	+28	+30	—	dBm
Output Power at 3dB compression[2]	+29	+31	—	dBm
Noise Figure	—	6.0	—	dB
Output third order intercept point	—	+38	—	dBm
Input VSWR	—	—	2.5	:1
Output VSWR	—	—	2.5	: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.
1. +27 dBm at 3700-4200 MHz
2. +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.

ABSOLUTE 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)	-5 dBm

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

REV. A
ECO-017731
ZHL-4240W+
MCL NY
230504

Medium High Power Amplifier ZHL-4240W+ ZHL-4240WX+

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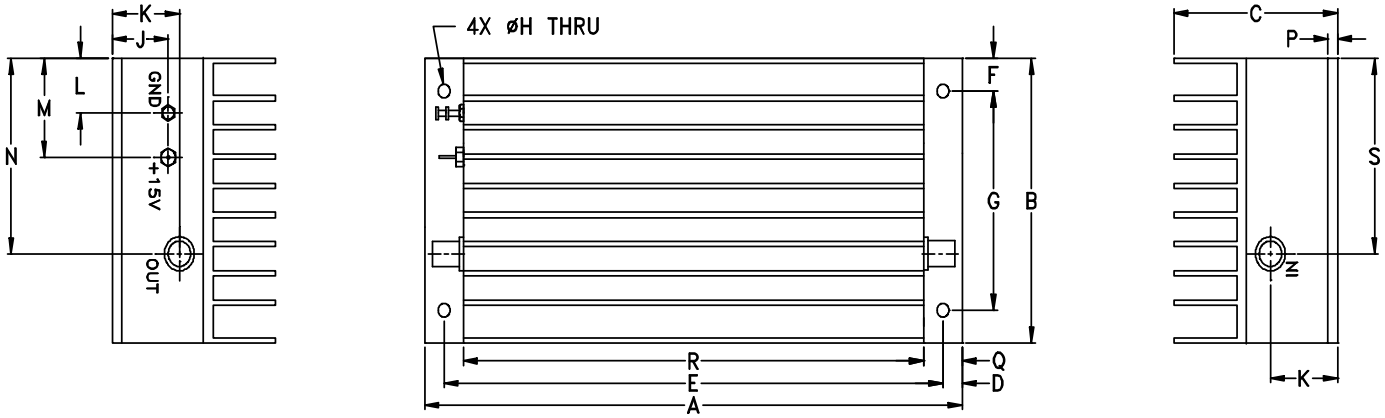
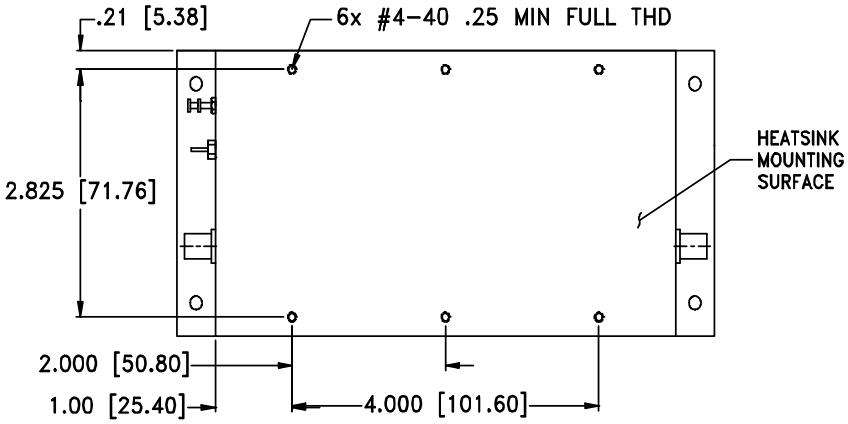
OUTLINE DRAWING FOR MODELS WITH HEATSINK



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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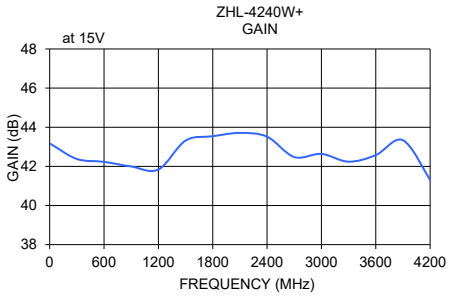
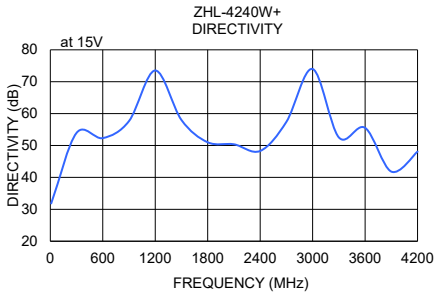
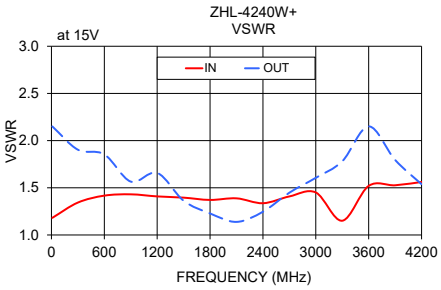
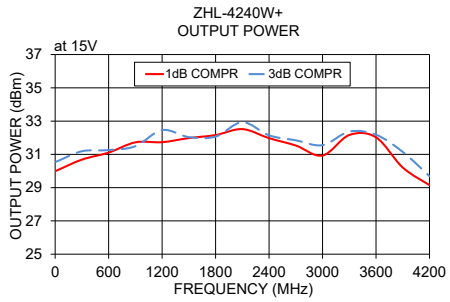
TYPICAL PERFORMANCE DATA / GRAPHS

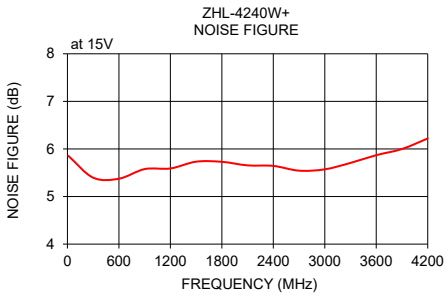
FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	15V	15V	IN	OUT	15V	15V	15V
10	43.15	31.85	1.18	2.15	30.01	5.85	45.17
300	42.38	53.96	1.34	1.90	30.69	5.40	51.40
600	42.23	52.31	1.42	1.85	31.11	5.37	49.71
900	41.99	57.66	1.43	1.57	31.72	5.58	48.03
1200	41.84	73.51	1.41	1.66	31.73	5.59	48.59
1500	43.32	57.99	1.40	1.36	31.98	5.73	48.05
1800	43.54	51.00	1.37	1.23	32.16	5.73	49.30
2100	43.71	50.38	1.39	1.14	32.52	5.65	44.92
2400	43.52	48.29	1.34	1.25	31.97	5.64	40.93
2700	42.48	57.42	1.41	1.45	31.53	5.54	39.37
3000	42.64	73.99	1.45	1.61	30.93	5.57	42.05
3300	42.24	52.54	1.15	1.78	32.17	5.71	41.91
3600	42.57	55.54	1.52	2.15	32.02	5.87	44.47
3900	43.34	41.82	1.53	1.80	30.21	6.00	42.03
4200	41.30	48.10	1.56	1.54	29.15	6.22	39.84

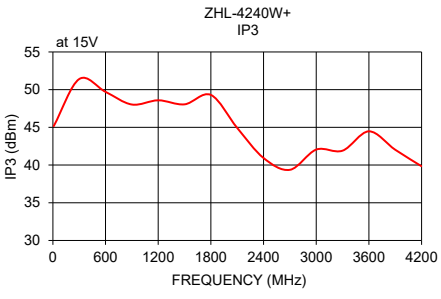












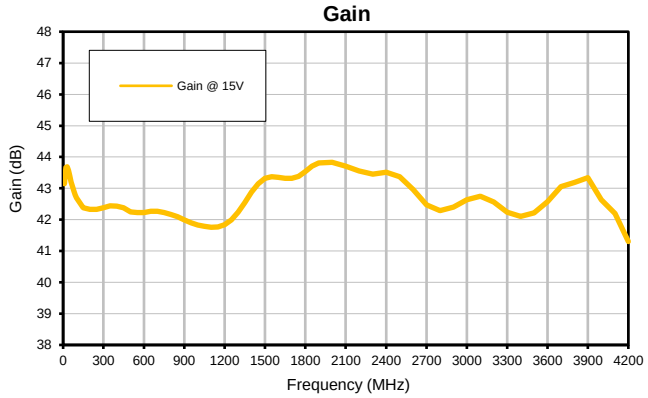
NOTES

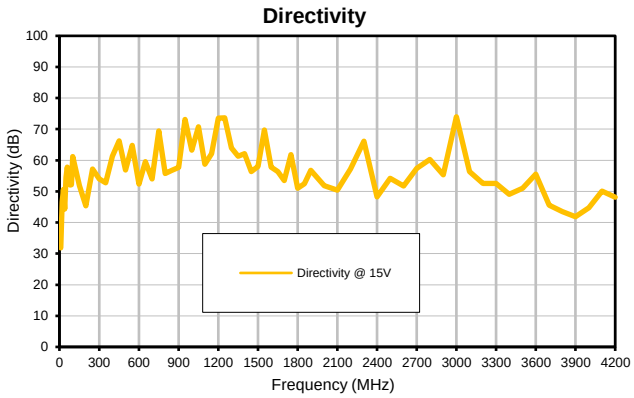
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

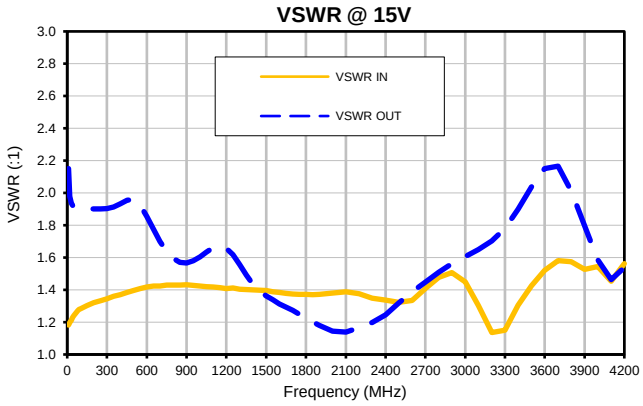
Typical Performance Data

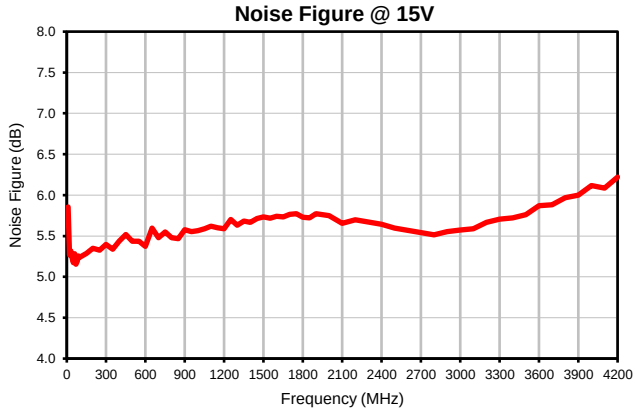
FREQUENCY (MHz)	GAIN (dB) 15V	DIRECTIVITY (dB) 15V	VSWR (:1) IN 15V	VSWR (:1) OUT 15V	NOISE FIGURE (dB) 15V	POUT @ 1 dB COMPRESSION (dBm) 15V	POUT @ 3 dB COMPRESSION (dBm) 15V	OUTPUT IP3 (dBm) 15V
10	43.15	31.85	1.18	2.15	5.85	30.01	30.56	45.17
20	43.67	46.63	1.20	1.98	5.27	30.43	30.66	46.28
30	43.68	50.56	1.21	1.94	5.32	30.81	30.71	47.21
40	43.58	44.35	1.23	1.92	5.23	30.68	30.86	48.34
50	43.40	54.52	1.24	1.91	5.17	30.37	30.83	49.19
60	43.21	57.77	1.25	1.91	5.28	30.55	30.83	49.77
70	43.05	54.37	1.26	1.91	5.15	30.60	30.90	50.09
80	42.92	52.02	1.27	1.91	5.19	30.37	30.76	50.40
90	42.79	52.13	1.28	1.90	5.25	30.39	30.76	50.54
100	42.70	61.16	1.28	1.91	5.24	30.40	30.81	50.50
150	42.38	51.80	1.30	1.90	5.29	30.47	30.77	52.15
200	42.33	45.40	1.32	1.90	5.35	30.60	30.90	52.57
250	42.33	57.20	1.33	1.90	5.32	30.50	30.89	51.81
300	42.38	53.96	1.34	1.90	5.40	30.69	31.19	51.40
350	42.44	52.74	1.36	1.91	5.34	30.55	31.22	50.87
400	42.43	61.29	1.37	1.93	5.43	30.84	31.25	50.36
450	42.38	66.29	1.38	1.96	5.52	30.71	31.13	49.53
500	42.25	56.90	1.40	1.96	5.44	30.94	31.38	50.16
550	42.22	64.82	1.41	1.93	5.44	30.99	31.24	50.11
600	42.23	52.31	1.42	1.85	5.37	31.11	31.26	49.71
650	42.27	59.55	1.42	1.77	5.60	31.09	31.21	49.45
700	42.26	54.01	1.42	1.70	5.48	31.15	31.12	48.65
750	42.22	69.47	1.43	1.64	5.55	31.35	31.34	48.91
800	42.16	55.76	1.43	1.59	5.48	31.43	31.38	48.27
850	42.09	56.77	1.43	1.57	5.47	31.73	31.54	48.62
900	41.99	57.66	1.43	1.57	5.58	31.72	31.49	48.03
950	41.90	73.18	1.43	1.58	5.55	31.84	31.55	48.26
1000	41.83	63.24	1.42	1.60	5.57	31.66	31.74	49.69
1050	41.78	70.82	1.42	1.63	5.59	31.97	32.18	48.85
1100	41.76	58.72	1.42	1.66	5.62	31.99	32.28	48.36
1150	41.77	62.08	1.41	1.67	5.60	32.00	32.38	48.21
1200	41.84	73.51	1.41	1.66	5.59	31.73	32.46	48.59
1250	41.99	73.63	1.41	1.62	5.70	31.71	32.30	48.15
1300	42.24	63.94	1.40	1.56	5.63	31.75	32.14	48.27
1350	42.55	61.33	1.40	1.49	5.68	31.58	32.03	47.38
1400	42.89	62.17	1.40	1.44	5.67	31.79	31.77	47.62
1450	43.15	56.41	1.40	1.39	5.71	31.99	32.10	47.39
1500	43.32	57.99	1.40	1.36	5.73	31.98	32.04	48.05
1550	43.37	69.71	1.39	1.34	5.72	32.34	32.39	47.82
1600	43.35	57.81	1.38	1.31	5.74	31.91	32.39	48.59
1650	43.32	56.38	1.38	1.29	5.73	32.08	32.53	44.92
1700	43.32	53.44	1.37	1.27	5.77	32.16	32.22	48.98
1750	43.38	61.82	1.37	1.25	5.77	32.01	32.21	48.89
1800	43.54	51.00	1.37	1.23	5.73	32.16	32.07	49.30
1850	43.71	52.41	1.37	1.20	5.72	32.24	32.22	48.53
1900	43.81	56.82	1.37	1.18	5.77	32.13	32.07	48.26
2000	43.83	51.88	1.38	1.15	5.75	32.37	32.76	46.66
2100	43.71	50.38	1.39	1.14	5.65	32.52	32.93	44.92
2200	43.55	57.22	1.38	1.17	5.70	32.56	32.71	43.55
2300	43.46	66.19	1.35	1.20	5.67	32.03	32.48	42.25
2400	43.52	48.29	1.34	1.25	5.64	31.97	32.14	40.93
2500	43.37	54.25	1.32	1.32	5.60	31.87	32.10	39.90
2600	42.96	51.75	1.33	1.39	5.57	31.94	31.86	39.34
2700	42.48	57.42	1.41	1.45	5.54	31.53	31.85	39.37
2800	42.29	60.28	1.48	1.51	5.51	31.45	31.68	39.75
2900	42.40	55.36	1.51	1.56	5.55	31.31	31.66	40.50
3000	42.64	73.99	1.45	1.61	5.57	30.93	31.55	42.05
3100	42.75	56.34	1.30	1.65	5.59	30.21	31.32	47.47
3200	42.56	52.57	1.14	1.70	5.67	31.38	31.91	43.76
3300	42.24	52.54	1.15	1.78	5.71	32.17	32.37	41.91
3400	42.11	49.02	1.30	1.90	5.72	32.24	32.71	42.35
3500	42.21	51.04	1.43	2.04	5.76	32.13	32.51	43.47
3600	42.57	55.54	1.52	2.15	5.87	32.02	32.18	44.47
3700	43.05	45.57	1.58	2.17	5.88	31.38	31.78	44.54
3800	43.18	43.46	1.57	2.01	5.97	30.73	31.52	43.47
3900	43.34	41.82	1.53	1.80	6.00	30.21	31.15	42.03
4000	42.64	44.71	1.54	1.59	6.12	29.93	30.72	40.52
4100	42.20	50.13	1.45	1.46	6.09	29.84	30.36	38.83
4200	41.30	48.10	1.56	1.54	6.22	29.15	29.69	39.84

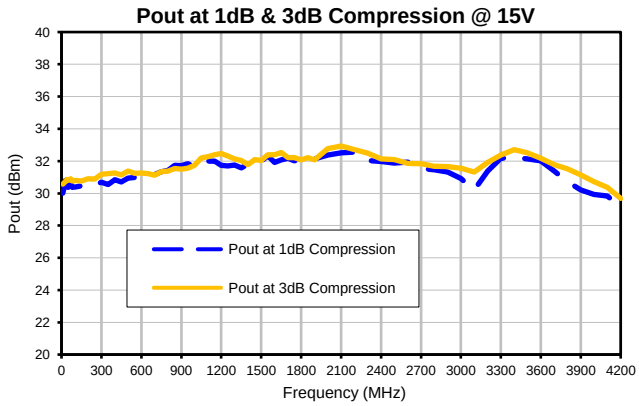
Typical Performance Curves

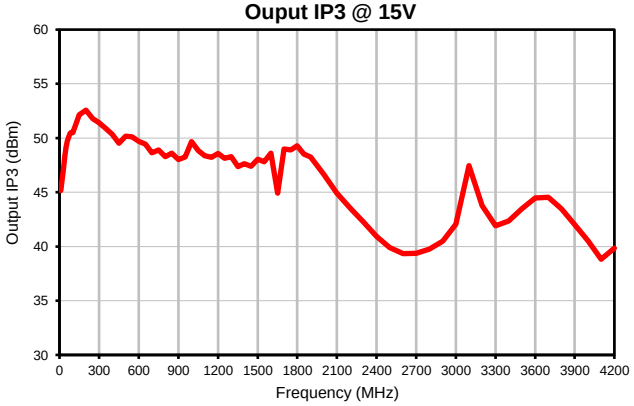






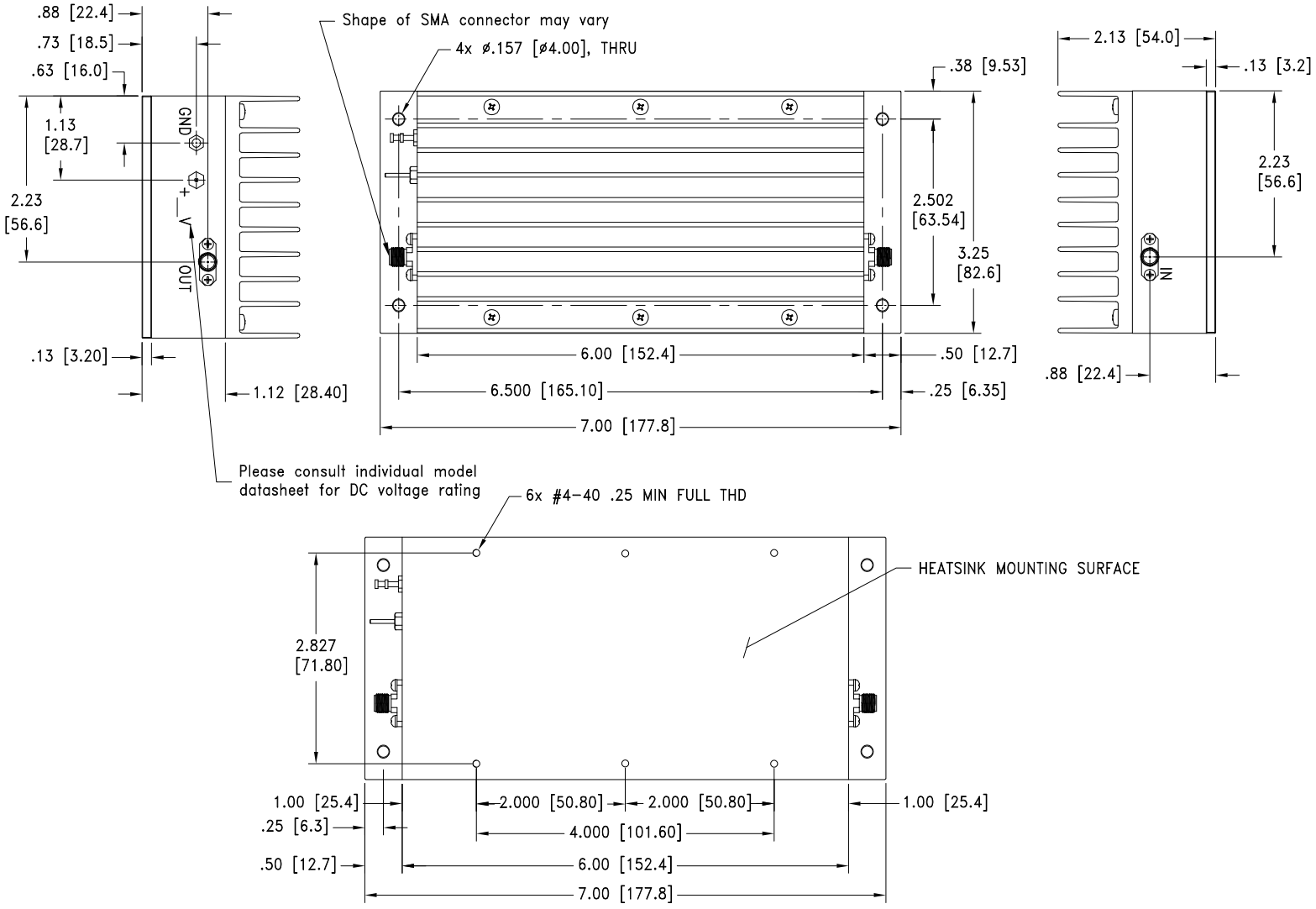






Case Style U

Outline Dimensions U36



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK

Weight: 900.0 grams Weight without heatsink: 600.0 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±03; ; 3 Pl. ±.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.

Mini-Circuits

Environmental Specifications **ENV23T3**

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