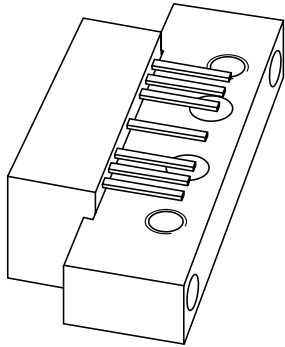


DATA SHEET



CGY887B

**860 MHz, 27.8 dB gain push-pull
amplifier**

Product specification

2001 Nov 27

860 MHz, 27.8 dB gain push-pull amplifier**CGY887B****FEATURES**

- Excellent linearity
- High gain
- Extremely low noise
- Excellent return loss properties
- Rugged construction
- Gold metallization ensures excellent reliability.

APPLICATIONS

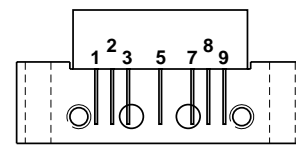
- CATV systems operating in the 40 to 870 MHz frequency range.

DESCRIPTION

Hybrid dynamic range amplifier module in a SOT115J package operating at a voltage supply of 24 V (DC), employing both GaAs and Si dies.

PINNING - SOT115J

PIN	DESCRIPTION
1	input
2, 3	common
5	+V _B
7, 8	common
9	output



Side view

MSA319

Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 45 MHz	27.2	27.8	dB
		f = 870 MHz	28	29	dB
I _{tot}	total current consumption (DC)	V _B = 24 V	295	325	mA

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V _B	supply voltage	–	30	V
V _i	RF input voltage (single tone)	–	70	dBmV
T _{stg}	storage temperature	–40	+100	°C
T _{mb}	operating mounting base temperature	–20	+100	°C

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CHARACTERISTICSBandwidth 45 to 870 MHz; $V_B = 24$ V; $T_{mb} = 35$ °C; $Z_S = Z_L = 75$ Ω .

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G _p	power gain	f = 45 MHz	27.2	27.5	27.8	dB
		f = 870 MHz	28	28.5	29	dB
SL	slope straight line	f = 45 to 870 MHz	0.5	1	1.5	dB
FL	flatness straight line	f = 45 to 100 MHz	-0.25	-	+0.25	dB
		f = 100 to 800 MHz	-0.5	-	+0.5	dB
		f = 800 to 870 MHz	-0.4	-	+0.1	dB
S ₁₁	input return losses	f = 40 to 80 MHz	24	-	-	dB
		f = 80 to 160 MHz	22	-	-	dB
		f = 160 to 320 MHz	19	-	-	dB
		f = 320 to 550 MHz	18	-	-	dB
		f = 550 to 650 MHz	17	-	-	dB
		f = 650 to 750 MHz	16	-	-	dB
		f = 750 to 870 MHz	14	-	-	dB
		f = 870 to 914 MHz	12	-	-	dB
S ₂₂	output return losses	f = 40 to 80 MHz	23	-	-	dB
		f = 80 to 160 MHz	22	-	-	dB
		f = 160 to 320 MHz	18	-	-	dB
		f = 320 to 550 MHz	17	-	-	dB
		f = 550 to 650 MHz	17	-	-	dB
		f = 650 to 750 MHz	17	-	-	dB
		f = 750 to 870 MHz	14	-	-	dB
		f = 870 to 914 MHz	12	-	-	dB
S ₂₁	phase response	f = 50 MHz	-45	-	+45	deg
CTB	composite triple beat	79 chs flat; V _o = 44 dBmV; f _m = 331.25 MHz	-	-	-63.5	dB
		132 chs flat; V _o = 44 dBmV; f _m = 445.25 MHz	-	-	-57.5	dB
X _{mod}	cross modulation	79 chs flat; V _o = 44 dBmV; f _m = 55.25 MHz	-	-	-57	dB
		132 chs flat; V _o = 44 dBmV; f _m = 55.25 MHz	-	-	-51	dB
CSO	composite second order distortion	79 chs flat; V _o = 44 dBmV; f _m = 54.0 MHz	-	-	-64	dB
		132 chs flat; V _o = 44 dBmV; f _m = 860.5 MHz	-	-	-58	dB
NF	noise figure	f = 50 MHz	-	-	5	dB
		f = 550 MHz	-	-	5	dB
		f = 750 MHz	-	-	5	dB
		f = 870 MHz	-	-	5	dB
d ₂	second order distortion	note 1	-	-	-60	dB
		note 2	-	-	-57	dB

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_o	output voltage	$d_{im} = -60$ dB; note 3	66	–	–	dBmV
		$d_{im} = -60$ dB; note 4	64	–	–	dBmV
I_{tot}	total current consumption (DC)	note 5	295	310	325	mA

Notes

- $f_p = 55.25$ MHz; $V_p = 60$ dBmV; $f_q = 493.25$ MHz; $V_q = 60$ dBmV; measured at $f_p + f_q = 548.5$ MHz.
- $f_p = 55.25$ MHz; $V_p = 60$ dBmV; $f_q = 805.25$ MHz; $V_q = 60$ dBmV; measured at $f_p + f_q = 860.5$ MHz.
- Measured according to DIN45004B: $f_p = 540.25$ MHz; $V_p = V_o$; $f_q = 547.25$ MHz; $V_q = V_o - 6$ dB; $f_r = 549.25$ MHz; $V_r = V_o - 6$ dB; measured at $f_p + f_q - f_r = 538.25$ MHz.
- Measured according to DIN45004B: $f_p = 851.25$ MHz; $V_p = V_o$; $f_q = 858.25$ MHz; $V_q = V_o - 6$ dB; $f_r = 860.25$ MHz; $V_r = V_o - 6$ dB; measured at $f_p + f_q - f_r = 849.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

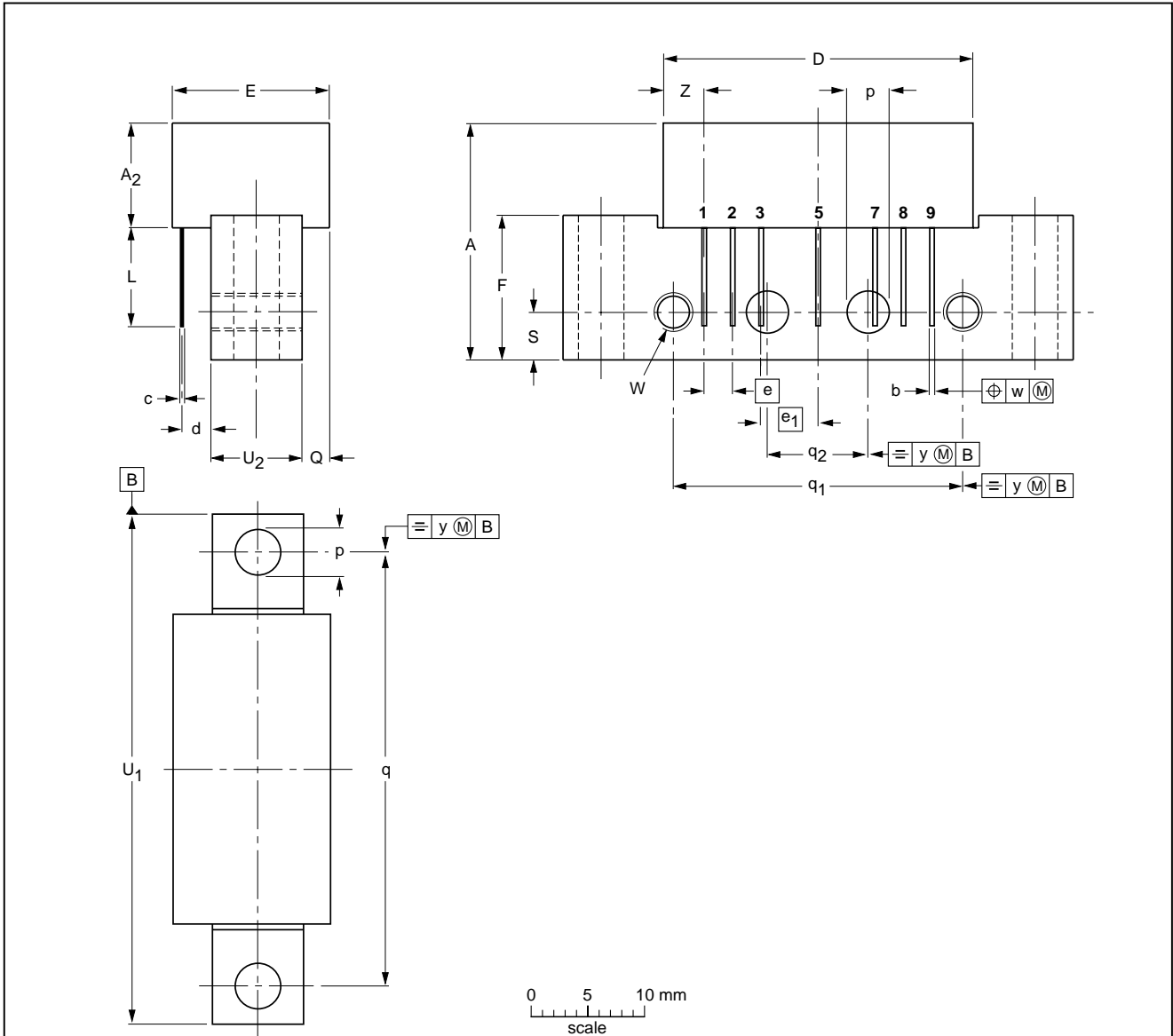
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PACKAGE OUTLINE

Rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads

SOT115J



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A ₂ max.	b	c	D max.	d max.	E max.	e	e ₁	F	L min.	p	Q max.	q	q ₁	q ₂	S	U ₁ max.	U ₂	W	w	y	Z max.
mm	20.8	9.1	0.51 0.38	0.25	27.2	2.54	13.75	2.54	5.08	12.7	8.8	4.15 3.85	2.4	38.1	25.4	10.2	4.2	44.75	8	6-32 UNC	0.25	0.1	3.8

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT115J						99-02-06

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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NOTES

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