

<b>Product Specification</b> <b>D8740220GT</b> <small>GaAs Power Doubler, 40 – 870MHz, 22.0dB min. Gain @ 870MHz, 375mA max. @ 24VDC</small>	
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**FEATURES**

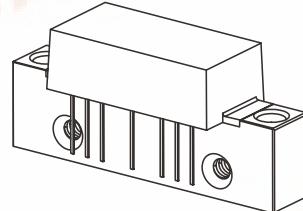
- Excellent linearity
- Superior return loss performance
- Extremely low distortion
- Optimal reliability
- Low noise
- Unconditionally stable under all terminations

**APPLICATION**

- 40 to 870 MHz CATV amplifier systems

**DESCRIPTION**

- Hybrid Power Doubler amplifier module employing GaAs dice

**D8740220GT****GaAs Power Doubler Hybrid**

40 – 870MHz  
 22.0dB min. Gain @ 870MHz  
 375mA max. @ 24VDC

**LIMITING VALUES**

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

SYMBOL	PARAMETER		MIN.	MAX.	UNIT
$V_i$	RF input voltage (single tone)		-	75	dBmV
$V_{ov}$	DC supply over-voltage (5 minutes)		-	30	V
$T_{stg}$	storage temperature		- 40	+ 100	°C
$T_{mb}$	operating mounting base temperature		- 30	+ 100	°C

**CHARACTERISTICS**

Table 1: S-Parameter, Noise Figure, DC Current;  $V_B = 24V$ ;  $T_{mb} = 30^\circ C$ ;  $Z_S = Z_L = 75 \Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$G_p$	power gain	$f = 870 \text{ MHz}$	22.0		23.0	dB
$SL$	slope <sup>1)</sup>	$f = 40 \text{ to } 870 \text{ MHz}$	0.6	1.0	1.4	dB
$FL$	flatness of frequency response	$f = 40 \text{ to } 870 \text{ MHz}$ (Peak to Valley)	-		0.6	dB
$S_{11}$	input return loss	$f = 40 \text{ to } 320 \text{ MHz}$	20.0		-	dB
		$f = 320 \text{ to } 640 \text{ MHz}$	19.0		-	dB
		$f = 640 \text{ to } 870 \text{ MHz}$	17.0		-	dB
$S_{22}$	output return loss	$f = 40 \text{ to } 320 \text{ MHz}$	20.0		-	dB
		$f = 320 \text{ to } 640 \text{ MHz}$	19.0		-	dB
		$f = 640 \text{ to } 870 \text{ MHz}$	18.0		-	dB
$F$	noise figure	$f = 50 \text{ to } 870 \text{ MHz}$	-		6.5	dB
$I_{tot}$	total current consumption (DC)			350.0	375.0	mA

Notes:

1) The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.

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**CHARACTERISTICS**

Table 2: Distortion data 40 – 750 MHz;  $V_B = 24V$ ;  $T_{mb} = 30^\circ C$ ;  $Z_S = Z_L = 75 \Omega$

<b>SYMBOL</b>	<b>CONDITIONS</b>	<b>MIN.</b>	<b>TYP.</b>	<b>MAX.</b>	<b>UNIT</b>
CTB	112 ch. 10 dB tilted; $V_o = 50 \text{ dBmV} @ 750 \text{ MHz}$ ; <sup>1)</sup>	-		- 60	dBc
XMOD	112 ch. 10 dB tilted; $V_o = 50 \text{ dBmV} @ 750 \text{ MHz}$ ; <sup>1)</sup>	-		- 55	dBc
CSO	112 ch. 10 dB tilted; $V_o = 50 \text{ dBmV} @ 750 \text{ MHz}$ ; <sup>1)</sup>	-		- 63	dBc

Notes:

1) 112 channels, NTSC frequency raster: 55.25 MHz to 745.25 MHz, +40 dBmV to +50 dBmV tilted output level.

**Composite Second Order (CSO)**

The CSO parameter (both sum and difference products) is defined by the NCTA.

**Composite Triple Beat (CTB)**

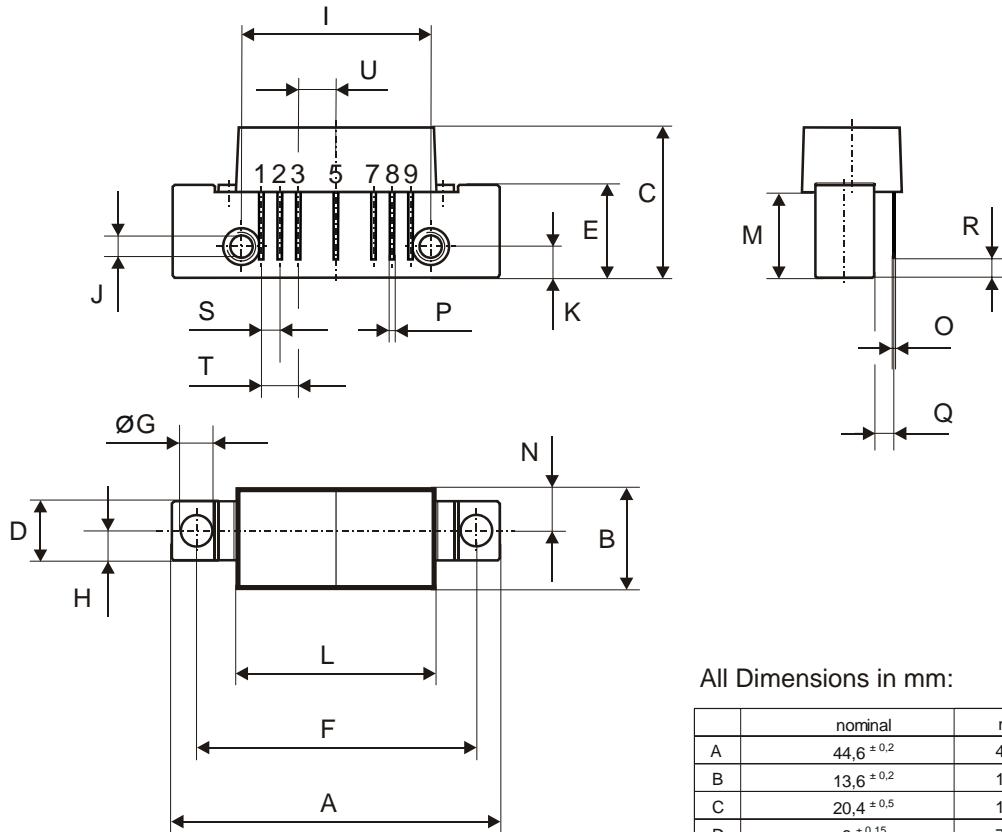
The CTB parameter is defined by the NCTA.

**Cross Modulation (XMOD)**

Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

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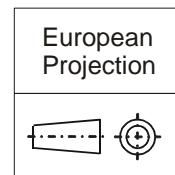


**Pinning:**

0 5 10mm  
 scale

1	2	3	4	5	6	7	8	9
INPUT								OUTPUT
	GND	GND		+VB		GND	GND	

**Notes:**



All Dimensions in mm:

	nominal	min	max
A	44,6 $\pm$ 0,2	44,4	44,8
B	13,6 $\pm$ 0,2	13,4	13,8
C	20,4 $\pm$ 0,5	19,9	20,9
D	8 $\pm$ 0,15	7,85	8,15
E	12,6 $\pm$ 0,15	12,45	12,75
F	38,1 $\pm$ 0,2	37,9	38,3
G	4 $\pm$ 0,2 / -0,05	3,95	4,2
H	4 $\pm$ 0,2	3,8	4,2
I	25,4 $\pm$ 0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 $\pm$ 0,2	4,0	4,4
L	27,2 $\pm$ 0,2	27,0	27,4
M	11,6 $\pm$ 0,5	11,1	12,1
N	5,8 $\pm$ 0,4	5,4	6,2
O	0,25 $\pm$ 0,02	0,23	0,27
P	0,45 $\pm$ 0,03	0,42	0,48
Q	2,54 $\pm$ 0,3	2,24	2,84
R	2,54 $\pm$ 0,5	2,04	3,04
S	2,54 $\pm$ 0,25	2,29	2,79
T	5,08 $\pm$ 0,25	4,83	5,33
U	5,08 $\pm$ 0,25	4,83	5,33

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## **DEFINITIONS**

<b>Data Sheet Status</b>	
Objective Product Specification	This data sheet contains target or goal specifications for product development.
Preliminary Product Specification	This data sheet contains preliminary data; supplementary data may be published later.
Product Specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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