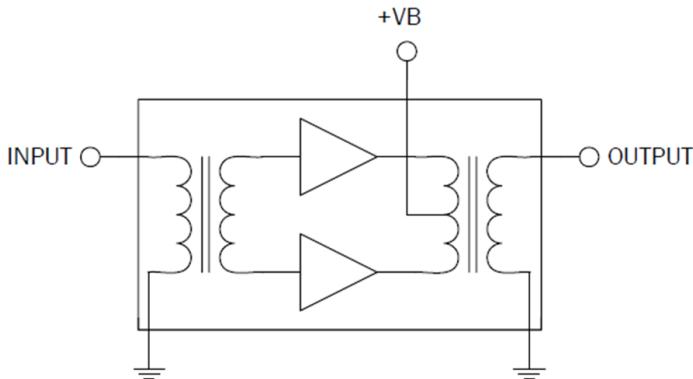


D8740300GTH

GaAs Power Doubler Hybrid
40MHz to 870MHz

The D8740300GTH is a Hybrid Power Doubler amplifier module with high output capability. The D8740300GTH employs GaAs dice and is operated from 40MHz to 870MHz. The part provides excellent linearity and superior return loss performance with low noise and optimal reliability.



Package: SOT-115J

Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 30.5dB Min. Gain at 870MHz
- 440mA Max. at 24VDC

Applications

- 40MHz to 870MHz CATV Amplifier Systems

Ordering Information

D8740300GTH Box with 50 pieces

Absolute Maximum Ratings

Parameter	Rating	Unit
RF Input Voltage (single tone)	75	dBmV
DC Supply Over-Voltage (5 minutes)	30	V
Storage Temperature	-40 to +100	°C
Operating Mounting Base Temperature	-30 to +100	°C



Caution! ESD sensitive device.



RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2011/65/EU.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
General Performance					$V_+ = 24V$; $T_{MB} = 30^\circ C$; $Z_S = Z_L = 75\Omega$
Power Gain	29.5	30.0	30.5	dB	$f = 50MHz$
	30.5		32.0	dB	$f = 870MHz$
Slope ^[1]	0.5		2.0	dB	$f = 40MHz$ to $870MHz$
Flatness of Frequency Response			0.6	dB	$f = 40MHz$ to $870MHz$ (Peak to Valley)
Input Return Loss	20.0			dB	$f = 40MHz$ to $320MHz$
	19.0			dB	$f = 320MHz$ to $640MHz$
	17.0			dB	$f = 640MHz$ to $870MHz$
Output Return Loss	20.0			dB	$f = 40MHz$ to $320MHz$
	19.0			dB	$f = 320MHz$ to $640MHz$
	18.0			dB	$f = 640MHz$ to $870MHz$
Noise Figure		3.5	4.5	dB	$f = 50MHz$ to $870MHz$
Total Current Consumption (DC)		420.0	440.0	mA	
Distortion Data 40MHz to 550MHz					$V_+ = 24V$; $T_{MB} = 30^\circ C$; $Z_S = Z_L = 75\Omega$
CTB		-65	-63	dBc	79 ch. tilted; $V_o = 52dBmV$ at $550MHz$ ^[2]
XMOD		-62	-60	dBc	
CSO		-65	-63	dBc	

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

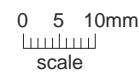
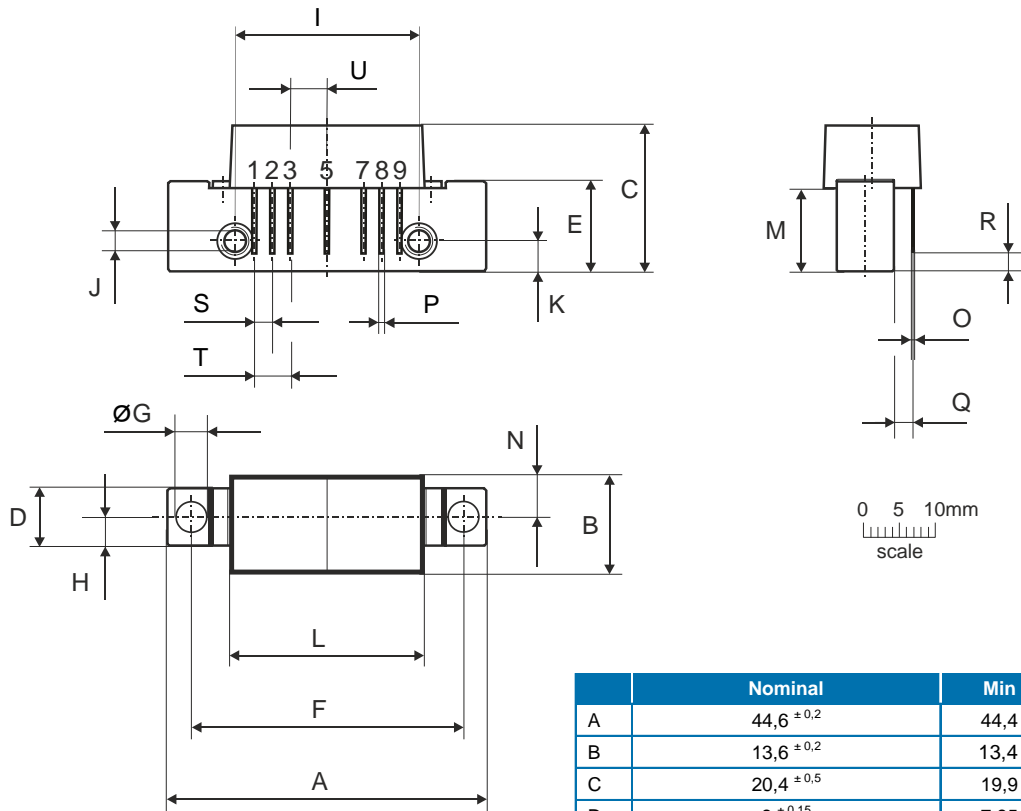
2. 79 channels, NTSC frequency raster; 55.25MHz to 547.25MHz, +45dBmV to +52dBmV tilted output level.

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

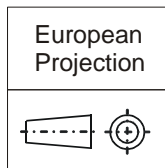
Composite Triple Beat (CTB) - The CTB parameter is defined by the NCTA.

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

Package Drawing (Dimensions in millimeters)



Notes:



Pinning:

Pin	Name
1	Input
2-3	GND
4	
5	+VB
6	
7-8	GND
9	Output

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