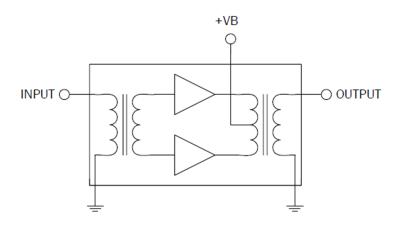


# D10040180GTH

GaAs Power Doubler Hybrid 40MHz to 1000MHz

The D10040180GTH is a Hybrid Power Doubler amplifier module. The part employs GaAs die and is operated from 40MHz to 1000MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.



## **Ordering Information**

D10040180GTH

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



#### Package: SOT-115J

#### **Features**

- Excellent Linearity
- Superior Return Loss Performance
- **Extremely Low Distortion**
- **Optimal Reliability**
- Low Noise
- Unconditionally Stable Under All Terminations
- 19.0dB Min. Gain at 1GHz
- 440mA Max. at 24VDC

## **Applications**

40MHz to 1000MHz CATV Amplifier Systems



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.

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## **Nominal Operating Parameters**

Parameter	Specification		Linit	Condition		
Parameter	Min	Тур	Max	Unit	Condition	
General Performance					V+ = 24V; $T_{MB}$ = 30°C; $Z_{S}$ = $Z_{L}$ = 75Ω	
Power Gain	18.0	18.5	19.0	dB	f = 50MHz	
	19.0	20.0	20.5	dB	f = 1000MHz	
Slope <sup>[1]</sup>	0.5	1.5	2.0	dB	f = 40MHz to 1000MHz	
Flatness of Frequency Response			0.8	dB	f = 40MHz to 1000MHz (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	
	16.0			dB	f = 870MHz to 1000MHz	
Output Return Loss	20.0			dB	f = 40MHz to 320MHz	
	19.0			dB	f = 320MHz to 640MHz	
	18.0			dB	f = 640MHz to 870MHz	
	17.0			dB	f = 870MHz to 1000MHz	
Noise Figure		5.5	6.5	dB	f = 50MHz to 1000MHz	
Total Current Consumption (DC)		420.00	440.00	mA		
Distortion Data 40MHz to 550MHz					$V_{+} = 24V; T_{MB} = 30^{\circ}C; Z_{S} = Z_{L} = 75\Omega$	
СТВ		-65	-63	dBc		
XMOD		-62	-60	dBc	79 ch 7 dB tilted; $V_0 = 52$ dBmV at 550MHz <sup>[2]</sup>	
CSO		-67	-65	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.

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