



## ASNT8132-MOD DC-54GHz Broadband Clock Divider by 2

- High speed broadband clock divider by 2
- Exhibits low jitter and limited temperature variation over industrial temperature range
- Fully differential CML input interface
- Fully differential CML output interface with 400mV single-ended swing
- Single -3.3V power supply
- Power consumption: 630mW
- Fabricated in SiGe for high performance, yield, and reliability
- Custom module solution from Marki Microwave





## DESCRIPTION

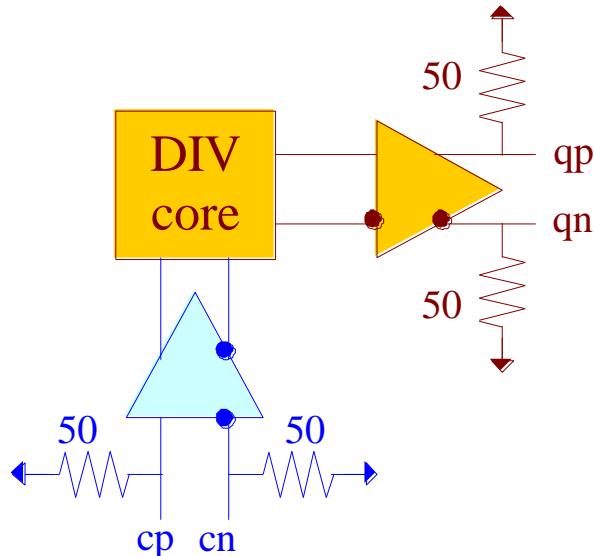


Fig. 1. Functional Block Diagram

The temperature stable ASNT8132-MOD SiGe IC provides broadband clock divide-by-2 functionality, and is intended for use in high-speed measurement / test equipment. The IC shown in Fig. 1 can process a high-speed clock input signal **cp/cn** and deliver a half rate clock output signal **qp/qn** with 50% duty cycle.

The part's I/O's support the CML logic interface with on chip  $50\text{Ohm}$  termination to **vcc** and may be used differentially, AC/DC coupled, single-ended, or in any combination (see also POWER SUPPLY CONFIGURATION). In the DC-coupling mode, the input signal's common mode voltage should comply with the specifications shown in ELECTRICAL CHARACTERISTICS. In the AC-coupling mode, the input termination provides the required common mode voltage automatically. The differential DC signaling mode is recommended for optimal performance.

## POWER SUPPLY CONFIGURATION

The part operates from a single negative supply (**vcc** = 0.0V = ground and **vee** =  $-3.3\text{V}$ ) configuration.



## ABSOLUTE MAXIMUM RATINGS

Caution: Exceeding the absolute maximum ratings shown in Table 1 may cause damage to this product and/or lead to reduced reliability. Functional performance is specified over the recommended operating conditions for power supply and temperature only. AC and DC device characteristics at or beyond the absolute maximum ratings are not assumed or implied. All min and max voltage limits are referenced to ground.

Table 1. Absolute Maximum Ratings

Parameter	Min	Max	Units
Supply Voltage (vee)		-3.6	V
Power Consumption		0.7	W
RF Input Voltage Swing (SE)		1.0	V
Case Temperature		+90	°C
Storage Temperature	-40	+100	°C
Operational Humidity	10	98	%
Storage Humidity	10	98	%

## TERMINAL FUNCTIONS

TERMINAL			DESCRIPTION
Name	No.	Type	
<b>High-Speed I/Os</b>			
cp	2	CML input	Differential clock inputs with internal SE 50Ω termination to VCC
cn	3		
qp	6	CML output	Differential clock outputs with internal SE 50Ω termination to VCC.
qn	5		
<b>Supply and Termination Voltages</b>			
Name	Description		Pin Number
vcc	Positive power supply (0V)		1, 8
vee	Negative power supply (-3.3V)		4, 7



## ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
<b>General Parameters</b>					
<i>v<sub>ee</sub></i>	-3.1	-3.3	-3.5	V	±6%
<i>v<sub>cc</sub></i>		0.0		V	External ground
<i>I<sub>vee</sub></i>		190		mA	
Power consumption		630		µW	
Junction temperature	-40	25	125	°C	
<b>HS Input Clock (cp/cn)</b>					
Frequency	DC	54		GHz	
Swing	0.2	1.0		V	Differential or SE, p-p
CM Voltage Level	<i>v<sub>cc</sub></i> -0.8		<i>v<sub>cc</sub></i>	V	Must match for both inputs
<b>HS Output Clock (qp/qn)</b>					
Frequency	DC	27		GHz	
Logic "1" level		<i>v<sub>cc</sub></i>		V	
Logic "0" level		<i>v<sub>cc</sub></i> -0.4		V	With external 50Ω DC termination
Rise/Fall times	4	5	7	ps	20%-80%
Output Jitter			1	ps	Peak-to-peak
Duty cycle	45	50	55	%	



## PACKAGE INFORMATION

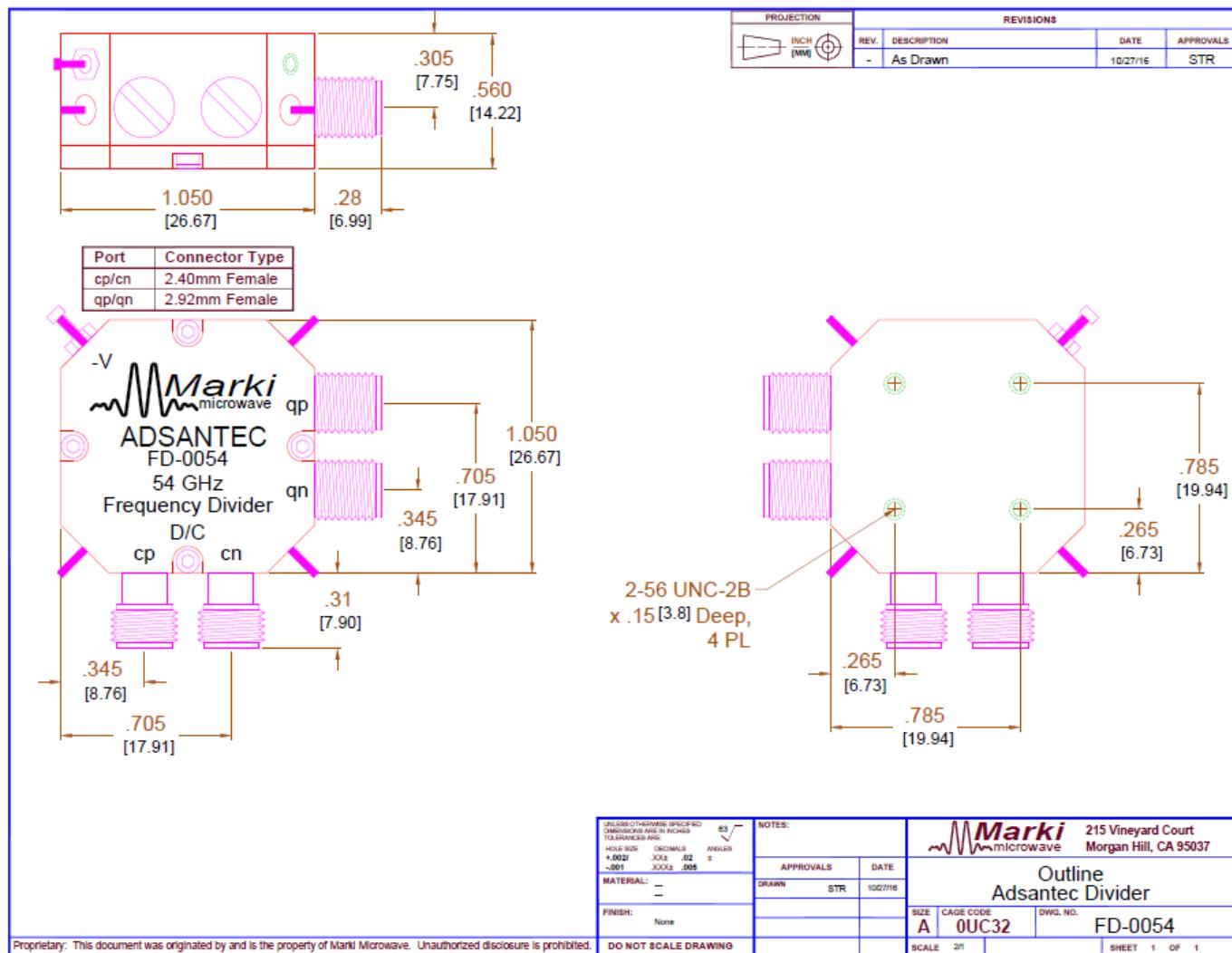


Fig. 2. Module Mechanical Dimensions mm [inches]

## REVISION HISTORY

Revision	Date	Changes
1.0.1	02-2019	First release