

# 12GHz Dual-Modulus Divide-by-4/5 DV45D

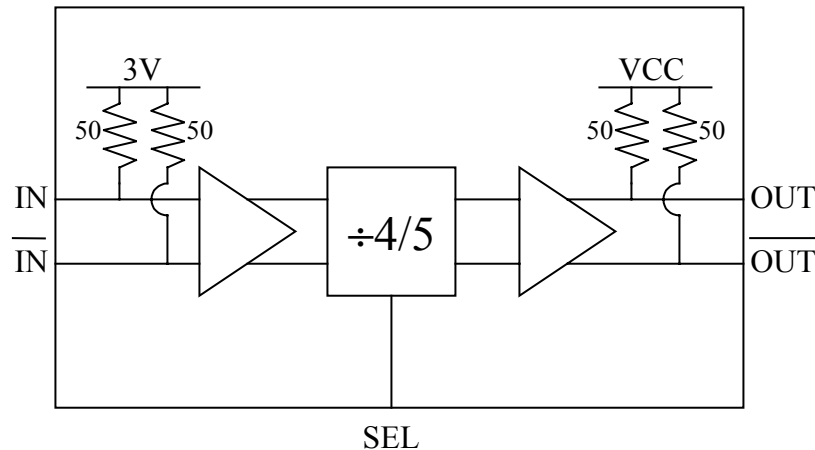
## PRODUCT DESCRIPTION

DV45D is a high-speed dual-modulus divide-by-4/5 static divider in 16-pin 3x3mm plastic QFN package. Due to its high input sensitivity, low output phase noise, and small size, DV45D is well suited for wide-range of applications from communications, instrumentation, radios/radar, to medical etc. It has differential input and output and accepts input frequency from 0.2GHz (sine wave, DC for square wave) to 14GHz. A TTL/LVTTL-compatible pin is provided to select modulus. A single power supply of +5V is required.

## KEY FEATURES

- 0.2-12GHz Bandwidth
- Selectable divide-by-4 or divide-by-5 operation
- Low phase noise: -140 dBc/Hz
- High input sensitivity: -25 dBm
- Output amplitude: 800 mVp-p (differential)
- Differential input and output
- 50Ω input/output impedance
- Single power supply: +5V
- Current consumption: 87mA
- 16-pin 3x3mm plastic QFN package

## BLOCK DIAGRAM



## ELECTRICAL SPECIFICATIONS

Room temperature,  $Z_0=50\Omega$ ,  $V_{cc}=+5V$ 

Parameter	Conditions	Min	Typical	Max	Units
Ambient Temperature		-40	25	85	°C
Max input frequency	Sine wave input		12		GHz
Min input frequency <sup>1</sup>	Sine wave input		0.2		GHz
Input power <sup>2</sup>	$f_{in}=0.2-10GHz$ , single ended	-25		10	dBm
Output amplitude 1	$f_{in}=10GHz$ , single ended		400		mVp-p
Output amplitude 2	$f_{in}=10GHz$ , differential		800		mVp-p
Feedthrough	Input frequency at output		-25		dB
Reverse isolation	< 10GHz		30		dB
Phase noise	SSB 100kHz offset		-140		dBc/Hz
Output rise/fall time	20% to 80%		50		ps
Input/output return loss	< 10GHz		12		dB
Output Impedance	DC, output pin to $V_{cc}$	45	50	55	$\Omega$
Control Low Level <sup>3</sup>	DC, control pin to GND	-0.3	0	0.3	V
Control High Level <sup>3</sup>	DC, control pin to GND	1.0	2.0	3.5	V
Current Consumption			87		mA

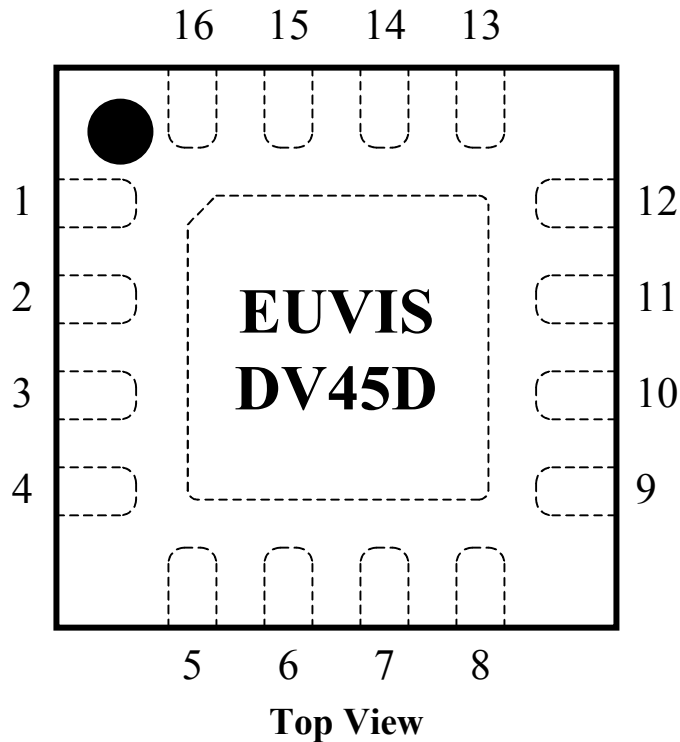
<sup>1</sup> Minimum input frequency is DC with square-wave input signal.<sup>2</sup> AC coupling is recommended for input signals. Common mode voltage of 3V is required for DC-coupled input signals in order to match internal input bias of 3V.<sup>3</sup> SEL modulus selection pin.

**PIN DESCRIPTION**

Pin No.	Name	Signal
1, 5, 7, 9, 12	GND	Ground
2	IN	Input
3	IN_	Complimentary input
4, 13, 14, 15, 16	VCC	Positive power supply (+5V)
6	SEL	TTL/LVTTL-compatible modulus selection (low: ÷4; high: ÷5)
8	N/C	No connection
10	OUT	Divided output
11	OUT_	Divided complimentary output

**PIN ASSIGNMENT**

- Package type: 16-pin 3mm x 3mm plastic QFN
- Thickness: 1mm



**ORDERING INFORMATION**

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