

TNETA1530

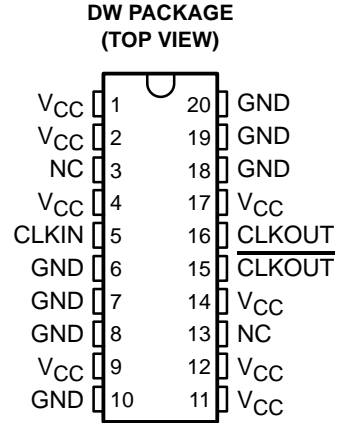
155.52-MHz CLOCK-GENERATION DEVICE

SDNS016E – FEBRUARY 1994 – REVISED APRIL 1996

- Generates a 155.52-MHz Clock From a 19.44-MHz TTL Clock
- Provides Differential Pseudo-ECL (PECL) Outputs
- Operates From a Single 5-V Power Supply
- Packaged in 20-Pin Plastic Small-Outline (DW) Package

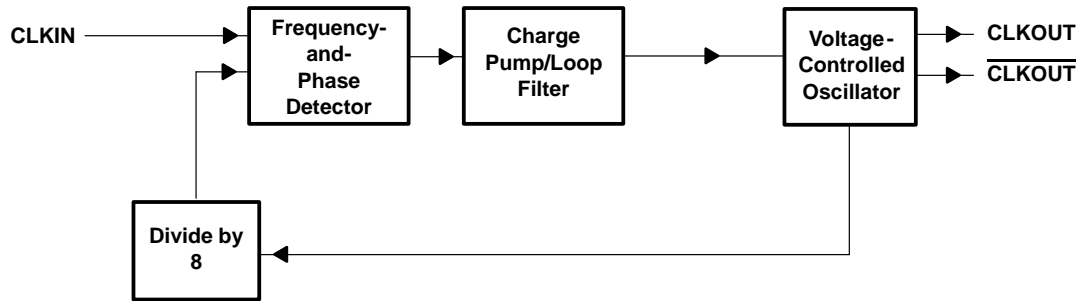
description

The TNETA1530 is a 155.52-MHz clock-generation device that utilizes a TTL-clock input at 19.44 MHz. The 155.52-MHz clock is provided on differential pseudo-ECL (PECL) outputs. The device operates from a single 5-V power supply. An internal second-order low-pass filter is used to reduce jitter.



NC – No internal connection

functional block diagram



Terminal Functions

TERMINAL NAME	NO.	I/O	DESCRIPTION
CLKIN	5	I	19.44-MHz TTL-input clock
CLKOUT	16	O	155.52-MHz PECL-output clock true
CLKOUT	15	O	155.52-MHz PECL-output clock complement
GND	6, 7, 8, 10, 18, 19, 20		Ground (0-V reference)
NC	3, 13		No internal connection. Leave floating.
V _{CC}	1, 2, 4, 9, 11, 12, 14, 17		Supply voltage



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

**TEXAS
INSTRUMENTS**

POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

Copyright © 1996, Texas Instruments Incorporated

TNETA1530

155.52-MHz CLOCK-GENERATION DEVICE

SDNS016E – FEBRUARY 1994 – REVISED APRIL 1996

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)[†]

Supply voltage range, V_{CC} (see Note 1)	–0.5 V to 7 V
Input voltage range, V_I	–1.2 V to 7 V
Operating free-air temperature range, T_A	–40°C to 85°C
Storage temperature range, T_{stg}	–65°C to 150°C

[†] Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTE 1: All voltage values are with respect to the GND terminals.

recommended operating conditions

			MIN	NOM	MAX	UNIT
V_{CC}	Supply voltage		4.75	5	5.25	V
V_{IH}	High-level input voltage	TTL (see Note 2)	2			V
V_{IL}	Low-level input voltage	TTL (see Note 2)			0.8	V
I_{IK}	Input clamp current	TTL			–18	mA
T_A	Operating free-air temperature		–40		85	°C

NOTE 2: The algebraic convention, in which the least positive (most negative) value is designated minimum, is used in this data sheet for logic-level voltages only.

electrical characteristics over recommended ranges of operating free-air temperature and supply voltage (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
V_{OH}	High-level output voltage	$V_{CC} = 5\text{ V}$, See Note 3	$V_{CC} - 0.925$		V
V_{OL}	Low-level output voltage	$V_{CC} = 5\text{ V}$, See Note 3	$V_{CC} - 1.650$		V
$V_{O(PP)}$	Output voltage swing, PECL	$V_{CC} = 4.75\text{ V to } 5.25\text{ V}$, See Note 3	525		mV
V_{IK}	Input clamp voltage	$V_{CC} = 4.75\text{ V}$, $I_L = -18\text{ mA}$		–1.2	V
I_I	Input current, TTL	$V_{CC} = 5.25\text{ V}$, $V_I = V_{CC}$ or GND		± 1	μA
I_{CC}	Supply current	$V_{CC} = 5.25\text{ V}$, Outputs open		50	mA
		$V_{CC} = 5.25\text{ V}$, See Note 3		75	

NOTE 3: These outputs are terminated with a 50- Ω resistor to $V_{CC} - 2\text{ V}$.

operating characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Duty cycle, generated clock	See Note 3	45%	50%	55%	
RMS jitter, generated clock			13	32	ps
Peak-to-peak jitter, generated clock			90	320	ps

NOTE 3: These outputs are terminated with a 50- Ω resistor to $V_{CC} - 2\text{ V}$.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

IMPORTANT NOTICE

Texas Instruments (TI) reserves the right to make changes to its products or to discontinue any semiconductor product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

TI warrants performance of its semiconductor products and related software to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

Certain applications using semiconductor products may involve potential risks of death, personal injury, or severe property or environmental damage ("Critical Applications").

TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS.

Inclusion of TI products in such applications is understood to be fully at the risk of the customer. Use of TI products in such applications requires the written approval of an appropriate TI officer. Questions concerning potential risk applications should be directed to TI through a local SC sales office.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards should be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or services described herein. Nor does TI warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used.