

LinCMOS™ 定时器

特性

- 极低功耗
- 可在一个非稳态模式下运行
- 支持轨到轨摆幅的 **CMOS** 输出
- 高输出电流功能
- 输出与 **CMOS**, **TTL**, 和 **MOS** 完全兼容
- 低电源电流减少输出瞬态期间的尖峰
- **2V** 至 **15V** 的单电源运行
- 与 **NE555** 功能可互换; 具有一样的引脚分配
- 静电放电 (**ESD**) 保护性能超过 **2000V** 符合 **MIL-STD-883C**, 方法 **3015.2**
- 在 **Q-Temp** 汽车应用中可用
 - 高可靠性汽车应用
 - 支持配置控制/打印
 - 符合汽车应用标准

说明

TLC555 是一个使用 TI LinCMOS 工艺制造的单片定时电路。定时器与 CMOS, TTL, 和 MOS 逻辑电路完全兼容并且运行在高达 2MHz 的频率上。由于它的高阻抗特性, 这个器件使用的定时电容器比那些 NE555 所使用的电容器要小。因此, 可实现更加准确的时间延迟和振荡。在整个电源电压范围内功耗较低。

与 NE555 类似, TLC555 有一个约等于电源电压三分之一的触发电平以及一个约等于电源电压三分之二的阈值电平。可使用控制电压端子 (CONT) 来改变这些电平。当触发输入 (TRIG) 下降至低于触发电平的时候, 触发器被设定并且输出变为高电平。如果 TRIG 高于触发电平并且阈值输入 (THRES) 在阈值电平之上的话, 触发器被复位并且输出为低电平。复位输入 (RESET) 的优先级高于所有其它输入并且可被用来启动一个新的定时周期。如果 RESET 为低电平, 触发器被复位并且输出为低电平。只要当输出为低电平, 在放电端子 (DISCH) 和接地 (GND) 之间提供一个低阻抗路径。所有未使用的输入应该被接至一个适当的逻辑电平来防止错误触发。

当 CMOS 输出能够吸收超过 100mA 的电流并提供超过 10mA 电流时, TLC555 在输出瞬态期间表现出大大减少的电源电流尖峰。这大大减少了对于较大去耦合电容器的需要, 而 NE555 需要此类电容器。

ORDERING INFORMATION⁽¹⁾

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
TLC555	TD	Bare die in waffle pack ⁽²⁾	TLC555TDF1	210
			TLC555TDF2	10

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.

(2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. Visual Inspection is performed in accordance with MIL-STD-883 Test Method 2010 Condition B at 75X minimum.



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This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

BARE DIE INFORMATION

DIE THICKNESS	BACKSIDE FINISH	BACKSIDE POTENTIAL	BOND PAD METALLIZATION COMPOSITION	BOND PAD THICKNESS
11 mils.	Silicon with backgrind	Floating	TiW/AISI (1%)Cu (0.5%)	760 nm

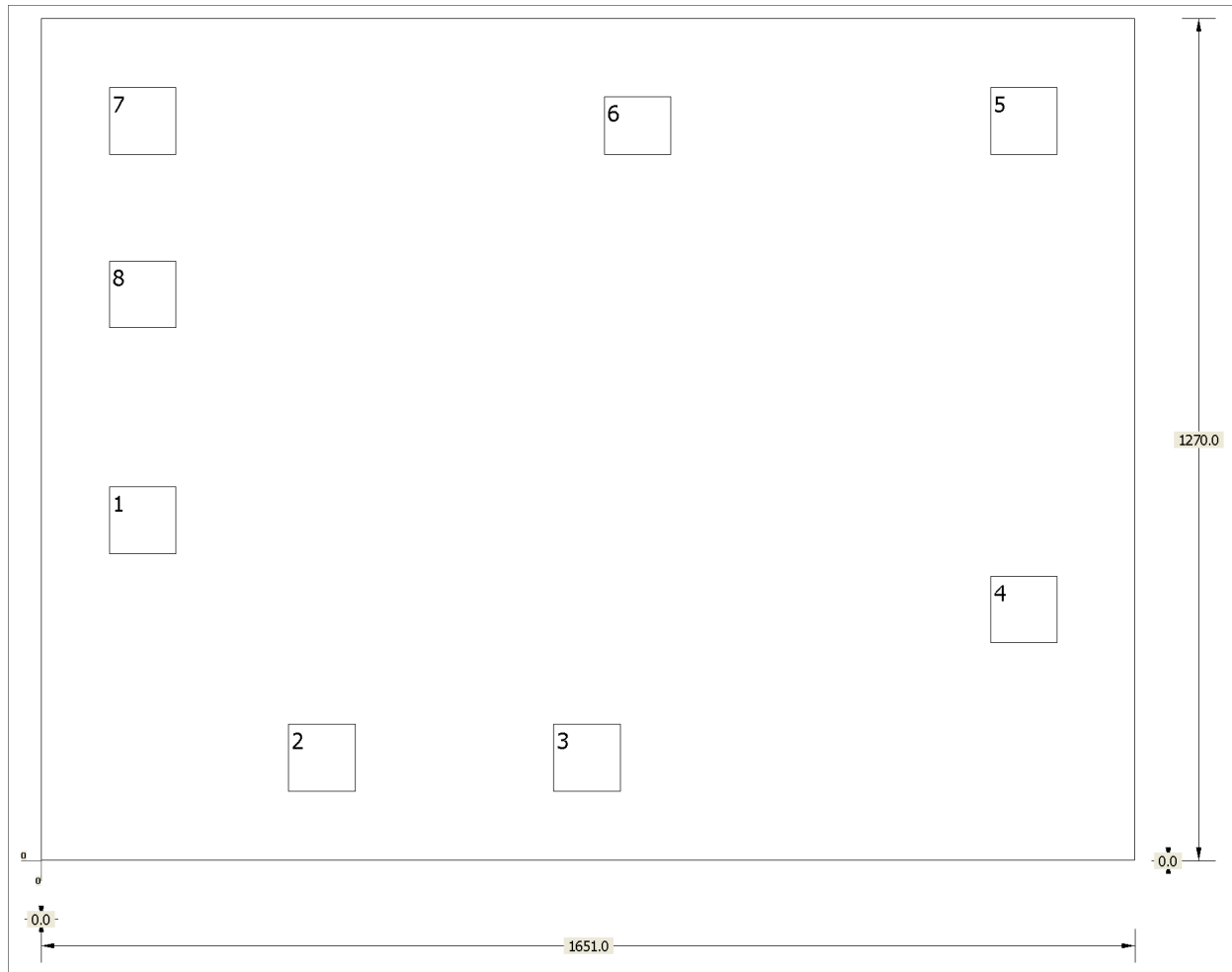


Table 1. Bond Pad Coordinates in Microns⁽¹⁾

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
GND	1	102.87	462.28	204.47	563.88
TRIG	2	373.38	104.14	474.98	205.74
OUT	3	773.43	104.14	875.03	205.74
RESET	4	1432.56	327.66	1534.16	429.26
CONT	5	1432.56	1064.26	1534.16	1165.86
THRES	6	849.63	1064.26	951.23	1151.89
DISCH	7	102.87	1064.26	204.47	1165.86
VDD	8	102.87	802.64	204.47	904.24

(1) Substrate N/C.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLC555TDF1	ACTIVE			0	210	RoHS & Green	Call TI	N / A for Pkg Type			Samples
TLC555TDF2	ACTIVE			0	10	RoHS & Green	Call TI	N / A for Pkg Type			Samples

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSOLETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

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OTHER QUALIFIED VERSIONS OF TLC555-DIE :

- Automotive : [TLC555-Q1](#)

NOTE: Qualified Version Definitions:

- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects

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