带有集成 DST80 认证、EEPROM 和 LF 发动机防盗系统的数字签名应答机

查询样品: TMS37145

特性

- 低频 **(LF)** 发动机防盗系统接口
  - **75** 字节 **EEPROM**
  - **80** 位 **DST80** 安全认证协处理器
  - 集成无电池发动机防盗系统接口
  - 半双工 **(HDX)** 发动机防盗系统通信实现高达 **4** 英寸 **(10cm)** 读取范围
  - 特别选择寻址模式支持可靠学习实践队列
  - **80** 位认证密钥长度
  - 高达每秒 **8k** 位上行数据速率
  - **5/3** 字节质询**/**应答算法
  - **42ms** 内的快速认证
  - **65ms** 内的快速相互认证
  - **75** 字节 **EEPROM**
    - **48** 字节可用 **EEPROM** 用户内存
    - **32** 位唯一串号
    - 高 **EEPROM** 安全性和灵活性
    - 只写入认证密钥
    - 页是不可逆可锁定的和可保护的
    - 只通过相互认证，才可对受保护的页编程
  - 每个用户页是可锁定的
  - 谐振频率：**134.2kHz**

描述

这个全新一代安全 RFID 应答机，此应答机借助其集成的 80 位加密算法提供最高的安全级别。 5 字节质询和 3 字节应答算法与现有的 TI 产品向后兼容，并且与突发长度编码一起，提供较短加密电报时间。

DST80 提供 65 字节的空闲可编程用户数据，这些数据存储于九个页内，其中的每个页可针对编程进行锁定。 两个 80 位加密密钥的每一个密钥可使用一个单一电报进行编程。

DST80 有两个版本，使用脉宽调制 (PWM) 或者脉冲位置调制 (PPM) 通信格式进行预编程，这样用户就不必改变这个字段。

订购信息(1)

T_A	封装(2)	通信格式	可订购部件号
-40°C 至 85°C	中插	PWM	TMS37145TEAIE
		PPM	TMS37145TEAIEG

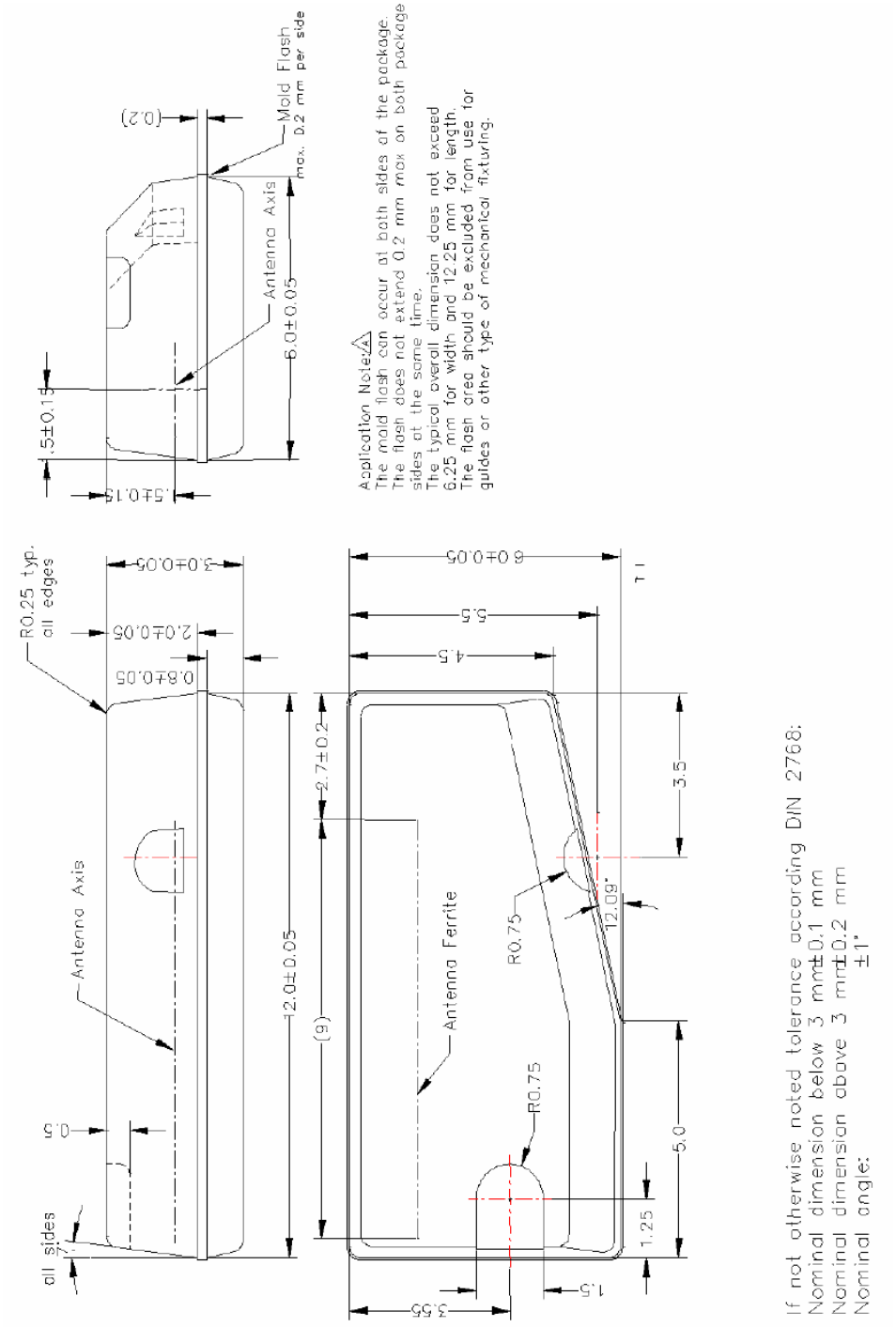
(1) 要获得最新的封装和订货信息，请参阅本文档末尾的封装选项附录，或者登录 TI 的网站 www.ti.com进行查询。
(2) 封装图样、热数据和符号可登录 www.ti.com/packaging获取。

WEDGE PACKAGE

Operating Characteristics

Part Number	**TMS37145TEAIE, TMS37145TEAIEG**	
Features	Immobilizer plus microcontroller with integrated power management	
DST80 authentication logic	80-bit key length, 4-byte or 5-byte challenge, 3-byte signature	
DST80 encryption time	Mutual authentication: 65 ms Fast authentication: 42 ms	
Transponder		
Transmission principle	HDX (half duplex telegram protocol)	
Operating frequency	134.2 kHz Integrated resonant frequency trimming capability via LF or test interface	
Security	Challenge/response, mutual authentication	
Downlink	100% AM, PPM bit coding with 2 kbit/s (typ)	
Uplink	FSK modulation with 7.9 kbit/s (typ)	
Read time for an encryption	PPM: 60 ms (typ) (including 20-ms charge time)	
Read time for mutual authentication	PPM: 85 ms (typ) (including 20-ms charge time)	
Protocol transmission security	16-bit block check character	
Activation field strength	141.5 dBμA/m	
Minimum required operation Q-factor	30	
EEPROM memory	75 bytes	48-byte free available EEPROM user memory
		32-bit unique serial number
		Two 80-bit security keys
EEPROM endurance	200 000 (min) write-erase cycles (T_A = 25°C)	
Key learn-in	Special selective addressing to provide secure learn-in procedure	
Storage temperature	-40°C to 100°C (175°C for 5 minutes)	
Operating temperature	-40°C to 85°C	
Case material	Plastic	
Protection class	IP 68	
EMC	Programmed code is not affected by natural electromagnetic interference or X-rays	
Mechanical shock	IEC 68-2-27, Test Ea; 200 g, half sine, 3 ms, 6 shocks per axis	
Vibration	IEC 68-2-6, Test Fc; 10 to 500 Hz, 1.65 mm peak to peak, 10 g, 4 hours per axis	
Dimensions	12.0 mm ± 0.2 mm x 6.0 mm ± 0.2 mm x 3.0 mm ± 0.05 mm	
Weight	0.4 g	
Packaging	Bulk (2000 units per box)	

MECHANICAL DATA



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
TMS37145TEAIE	ACTIVE	RFIDP	TEA	0	2000	RoHS & Green	Call TI	Level-1-260C-UNLIM	-40 to 85		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.

重要声明和免责声明

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邮寄地址：Texas Instruments, Post Office Box 655303, Dallas, Texas 75265