23-mm Low-Frequency Glass-Encapsulated Transponder, Read Only

Check for Samples: **TRPGR30ATGA**

FEATURES

- **Best-in-Class Performance Through Half-Duplex (HDX) Technology**
- **Patented Transponder Tuning Provides Stable and High Read Performance**
- **80-Bit Read-Only Type**
- **64-Bit Chip ID**
- **Insensitive to Almost All Nonmetallic Materials**

APPLICATIONS

- **Vehicle Identification**
- **Container Tracking**
- **Asset Management**

DESCRIPTION

Texas Instruments 23-mm low-frequency (LF) glass transponders provide superior performance and operate at a resonance frequency of 134.2 kHz. The products are compliant to ISO/IEC 11784/11785 global open standards. Texas Instruments LF glass transponders are manufactured with TI's patented tuning process to provide consistent read performance. Prior to delivery, the transponders undergo complete functional and parametric testing, to provide the high quality customers have come to expect from TI.

Absolute Maximum Ratings[1]

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

		TRPGR30ATGA
T_A	Operating temperature	−25°C to 70°C
T_{STG}	Storage temperature	−40°C to 85°C

(1) 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 *Specifications* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Specifications

PARAMETER	TRPGR30ATGA
Functionality	Read only
Memory (bits)	80 (64-bit unique ID + 16-bit BCC)
Memory (pages)	1
Resonance frequency	134.6 kHz
Modulation	FSK (frequency shift keying) 134.2 kHz and 124.2 kHz
Transmission principle	HDX (half duplex)
Power source	Powered from the reader signal (battery-less)
Typical reading range	≤110 cm[1]
Typical reading time	70 ms
Case material	Glass
Protection glass	Hermetically sealed
EMC	Programmed code is not affected by natural electromagnetic interference or x-rays
Signal penetration	Transponder can be read through almost all nonmetallic material
Mechanical shock	IEC 60068-2-32 free-fall drop test, 20 times from 1.5-m height
Dimensions	Ø 3.85 ± 0.05 mm x 23.1 ± 0.5 mm
Weight	0.8 g

(1) Depends on RF regulation in country of use, the reader antenna configuration, and the environmental conditions.

⚠ 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.

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
TRPGR30ATGA	ACTIVE	RFIDT	TGA	0	2000	RoHS (In Work) & Green (In Work)	Call TI	N / A for Pkg Type	-25 to 70		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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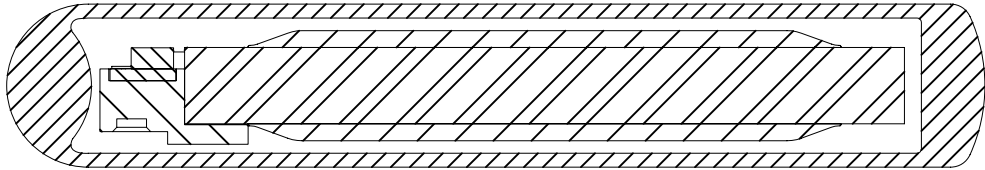
In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

TGA (R−RFID−N0) RFIDT

23.1±0.5

3.85±0.05
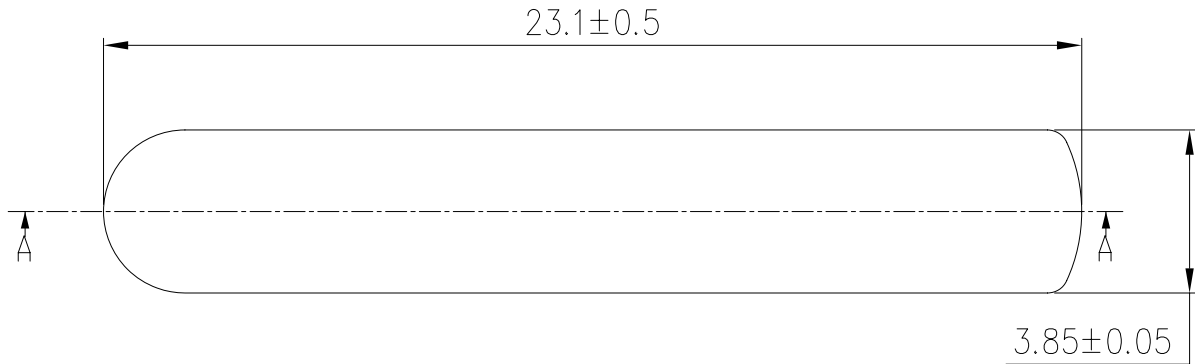
A−A

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NOTES: A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5−1994.
  B. This drawing is subject to change without notice.
  C. HDX+ 23mm Glass TRP Cap on Die.

IMPORTANT NOTICE AND DISCLAIMER