12mm WEDGE TRANSPONDER

FEATURES

- **Best in Class Performance Through Patented HDX Technology**
- **Patented Transponder Tuning Provides Stable and High Read/Write Performance**
- **64 Bit Read Only and 80 Bit Read/Write Types Are Available**
- **Small package**
- **Insensitive to Almost All Non-Metallic Materials**

APPLICATIONS

- **Access Control**
- **Product Identification**
- **Container Tracking**
- **Asset Management**
- **Waste Management**

DESCRIPTION

Texas Instruments' 12 mm wedge LF transponders are providing superior performance and operate at a resonance frequency of 134.2 kHz. Specific products are compliant to ISO/IEC 11784/11785 global open standards. Texas Instruments LF transponders are manufactured with TI's patented tuning process to provide consistent read and write performance. Prior to delivery, the transponders undergo complete functional and parametric testing, in order to provide the high quality customers have come to expect from TI. The transponder is well suited for usage in a broad range of applications including, but not limited to, access control, vehicle identification, container tracking, asset management and waste management applications.

ABSOLUTE MAXIMUM RATINGS(1)

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

	RI-TRP-R9BK	RI-TRP-W9WK	UNIT
Operating Temperature (Read)	–25 to +70	–40 to +85	°C
Operating Temperature (Program)	—	–40 to +70	°C
Storage Temperature	–40 to +100	–40 to +100	°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 *Recommended Operating Conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

OPERATING CHARACTERISTICS

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

PARAMETER	PART NUMBER		UNIT
	RI-TRP-R9BK	RI-TRP-W9WK	
Functionality	Read Only	Read/Write	
Memory (Bits)	64	80(1)	
Memory (Pages)	1	1	
Operating Frequency	134.2		kHz
Modulation	FSK (Frequency Shift Keying) 134.2 kHz / 123.2 kHz		
Transmission Principle	HDX (Half Duplex)		
Power Source	Powered from the reader signal (batteryless)		
Typical Reading Range	≤ 20(2)		cm
Typical Programming Range	—	30% of specified reading range	
Typical Reading Time	70		ms
Typical Programming Time	—	309	ms
Typical Programming Cycles	—	100,000	
Case Material	Plastic Compound, black		
Protection Class	IP 68		
EMC	Programmed code is not affected by normal electromagnetic interference or x-rays		
Signal Penetration	Transponder can be read through virtually all non-metallic material		
Mechanical Shock	IEC 68-2-27, Test Ea; 200 g, half sine, 3 ms, 3 axes, 6 shocks per axis		
Vibration	IEC 68-2-6, Test Fc; 20 g, 1 - 500 Hz, 3 axes, 24 hours per axis		
Dimensions	$(12 \times 6 \times 3) \pm 0.05$		mm
Weight	0.4		g

(1) We recommend that you split each 80 bit page into 64 user programmable bits plus a 16 bit wide CRC CCITT Block Check Character as is done by TI-RFid™ LF readers.
(2) Depending on RF regulation in country of use, the Reader Antenna configuration used, and the environmental conditions.

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