



LOW AND HIGH FREQUENCY TRANSPONDERS FOR ENCLOSURE INTO VIRTUALLY ANY FORM FACTOR

- **Customizable** - choose a size, chip and a disc or rod to fit any custom enclosure
- **Unsurpassed quality** - fully automated manufacturing and direct-bonding technology ensure tag reliability
- **Reliable operation** - built to withstand the rigors of tag processing, including plastic injection molding

Embeddable RFID transponders allow manufacturers to integrate HID Global electronic components seamlessly into tag designs optimized for any application.

Leveraging HID experience, manufacturers and integrators can combine their specialized market expertise to deliver optimized tagging solutions for custom automation applications. Manufacturers can save the time and expense of electronics design and production, and better focus resources on providing customer solutions.

With a variety of integrated chips, HID offers a range of Embeddable RFID components at low and high operating frequencies, and various form factors for incorporation into finished tagging solutions.

Disc-shaped transponders easily integrate into any enclosure where a circular chip and antenna configuration are preferred. Choose from:

- **E-Unit Disc transponders** - low frequency HID coils and chips, ideal for key fobs and similar simple applications.

- **Clear Disc transponders** - low and high frequency electronics sealed in a transparent plastic coating that provides resistance to chemical exposure, shock, vibration and thermal fluctuations, both during and after production.

- **e-Module transponders** - high frequency coils in a robust housing, to withstand the high heat manufacturing processes of special finished tags.

- **Piccolino Tag transponders** - for space-constrained applications, our smallest disc-shaped units deliver high frequency performance and up to a 16 kbit read-write memory.

When a rod form factor suits the target housing better than a coil - E-Unit Rod transponders provide the same high-performance coil design at the heart of the HID Glass Tag family, for embedding into your preferred housing. Rod-shaped units may also be preferred when a more precisely directed radio frequency field is needed. If a standard configuration does not fulfill your needs, HID engineers can customize a transponder unit to meet your requirements.

TECHNOLOGY HIGHLIGHTS:

- A selection of housing materials to meet a variety of production process demands
- A multitude of available integrated chip options
- Embeddable in a broad spectrum of materials



Embeddable RFID

SPECIFICATIONS

Embeddable RFID												
Clear Disc												
Hitag S				Q5		Unique		Mifare 1K	Mifare DESFire EV1 4K	Legic MIM 256	Legic MIM 1024	
20 mm		30 mm		22 mm	30 mm	20 mm	30 mm	25 mm	25 mm	25 mm	25 mm	
Base Model Number	623116	624116	623117	624117	612116	612117	601116	601117	607119	7A1119	636119	637119
ELECTRONIC												
Operating Frequency	125 kHz							13.56 MHz				
Chip Type	Hitag S				Q5		Unique		Mifare 1K	Mifare DESFire EV1	Legic MIM 256	Legic MIM 1024
Memory	256 bit EEPROM	2048 bit EEPROM	256 bit EEPROM	2048 bit EEPROM	256 bit EEPROM		64 bit read-only		1 KB EEPROM	4 KB EEPROM	256 bit EEPROM	1024 bit EEPROM
Anti-collision	Yes								Yes			
Reading Distance	Dependent upon reader, environment and application											
PHYSICAL												
Outer Coil Diameter	Ø 0.79 in (20 mm)		Ø 1.18 in (30 mm)		Ø 0.87 in (22 mm)	Ø 1.18 in (30 mm)	Ø 0.79 in (20 mm)	Ø 1.18 in (30 mm)	Ø 0.98 in (25 mm)			
Inner Coil Diameter												
Thickness	0.02 in (0.6 mm)							0.03 in (0.75mm)				
Diameter × Length												
Mounting Method	Embed, glue											
Housing Material	Polyethylen + Polyester (outside)											
CHEMICAL AND MECHANICAL												
Water	Depends on finished product											
Withstands Exposure To	Depends on finished product											
Vibration	Depends on finished product											
Shock	Depends on finished product											
THERMAL												
Storage	-4° to +140° F (-20° to +60° C)											
Operating	-4° to +140° F (-20° to +60° C)											
OTHER												
Standards												
Options	Alternative sizes and chips (e.g. HDX)											
Warranty	2 Years											

APPLICATION AREAS:

■ Asset tracking and logistics

- Gas bottles
- Utility lines

■ Automation and manufacturing

- Tool maintenance
- Process accountability

■ Medical and health

- Consumables
- Instruments

SPECIFICATIONS

	Embeddable RFID										
	E-Unit Disc				E-Unit Rod	e-Module	Piccolino Tag				
	EM4305		Hitag S		Hitag S	I-Code SLI	I-Code SLI		I-Code SLI-S		F-Mem
	24 mm	28 mm	24 mm	28 mm	15 mm	15 mm	7.5 mm	9.5 mm	7.5 mm	9.5 mm	9.5 mm
Base Model Number	684620	684680	623620	623610	201045	629601	629191	629190	670191	670190	634190
ELECTRONIC											
Operating Frequency	134.2 kHz					13.56 MHz					
Chip Type	EM4305		Hitag S		Hitag S	I-Code SLIx	I-Code SLIx		I-Code SLIx-s		F-Mem
Memory	512 bit EEPROM		256 bit EEPROM		256 bit EEPROM	1024 bit EEPROM	1024 bit EEPROM	1024 bit EEPROM	2048 bit EEPROM	2048 bit EEPROM	16 kbit EEPROM
Anti-collision	Yes										
Reading Distance	Dependent upon reader, environment and application										
PHYSICAL											
Outer Coil Diameter	Ø 0.97 in (Ø 24.3 mm)	Ø 1.09 in (Ø 27.8 mm)	Ø 0.97 in (Ø 24.3 mm)	Ø 1.09 in (Ø 27.8 mm)		Ø 0.57 in (14.5 mm)	Ø 0.30 in (Ø 7.5 mm)	Ø 0.37 in (Ø 9.5 mm)	Ø 0.30 in (Ø 7.5 mm)		Ø 0.37 in (Ø 9.5 mm)
Inner Coil Diameter	Ø 0.79 in (Ø 20 mm)	Ø 0.93 in (Ø 23.5 mm)	Ø 0.79 in (Ø 20 mm)	Ø 0.93 in (Ø 23.5 mm)		Ø 0.27 in (Ø 6.8 mm)					
Thickness	0.03 in (0.85 mm)	0.09 in (2.2 mm)	0.03 in (0.85 mm)	0.09 in (2.2 mm)		0.04 in (0.9 mm)	0.04 in (1 mm)				
Diameter × Length						Ø 0.07 x 0.59 in (Ø 1.8 x 15 mm)					
Mounting Method	Embed, glue										
Housing Material	Depends on finished product					Epoxy glob top	Epoxy				
CHEMICAL AND MECHANICAL											
Water	Depends on finished product										
Withstands Exposure To	Depends on finished product										
Vibration	Depends on finished product										
Shock	Depends on finished product										
THERMAL											
Storage	-40° to +140° F (-40° to +60° C)					-40° to +248° F (-40° to 120° C)	-40° to +185° F (-40° to 85° C)				
Operating	-13° to +140° F (-25° to +60° C)					-13° to +185° F (-25° to +85° C)	-13° to +158° F (-25° to +70° C)				
OTHER											
Standards	ISO 11784, ISO 11785					ISO 15693, ISO 18000-3					ISO 15693
Options	Alternative sizes and chips (e.g. HDX)										
Warranty	2 Years										

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