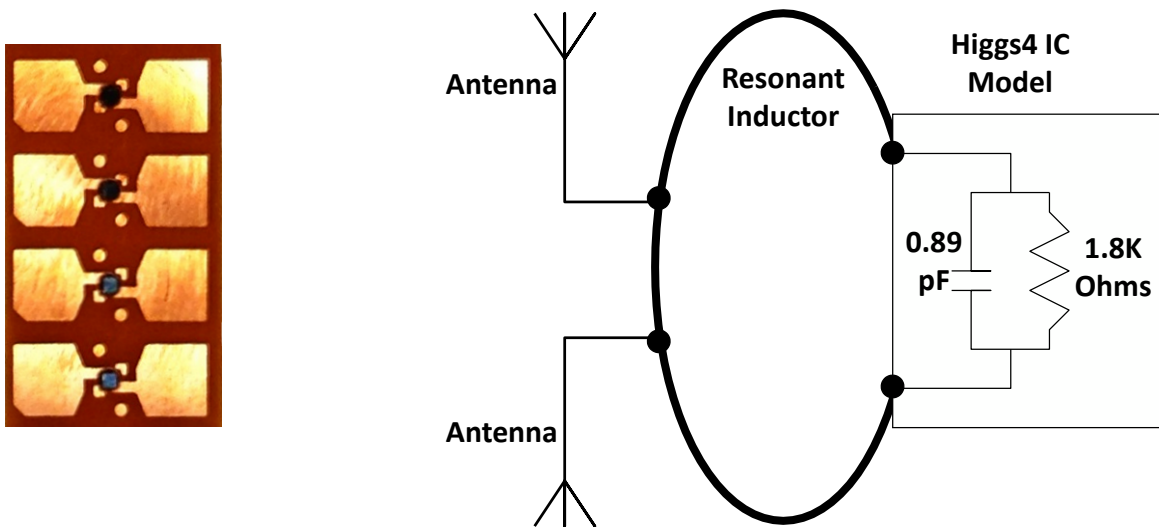
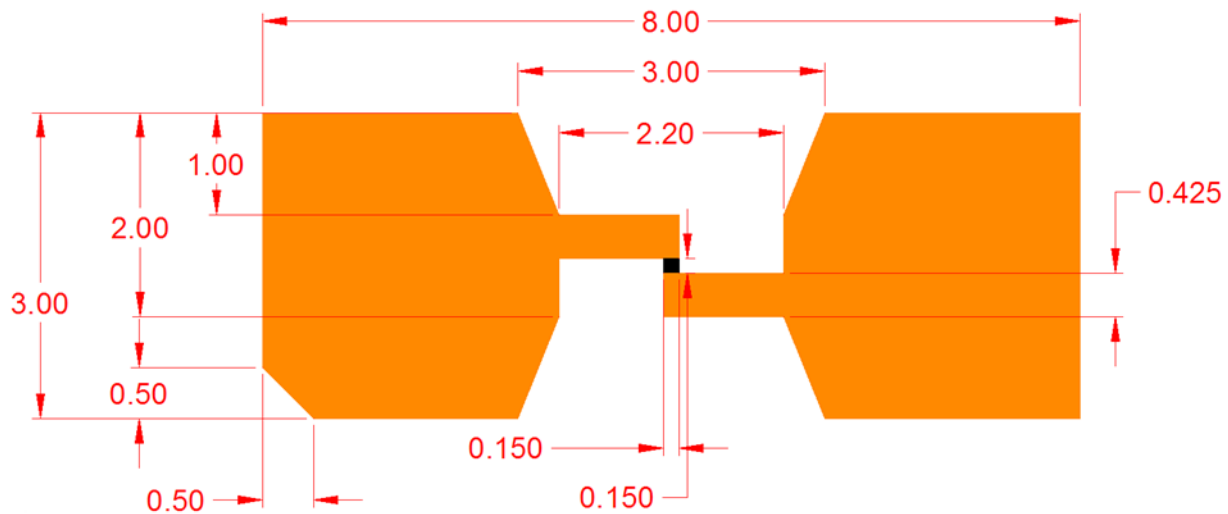


The Higgs-4 Strap is a highly integrated single chip UHF RFID Tag IC packaged in a JEDEC MO-283 Variant AA Strap. The chip conforms to EPCglobal Class-1 Gen-2 specification and provides state-of-the-art performance for a broad range of UHF RFID tagging applications. The Higgs-4 IC is implemented in a low cost CMOS process and uses proven and cost effective EEPROM technology.

Application Diagram



Dimensions for Simulation

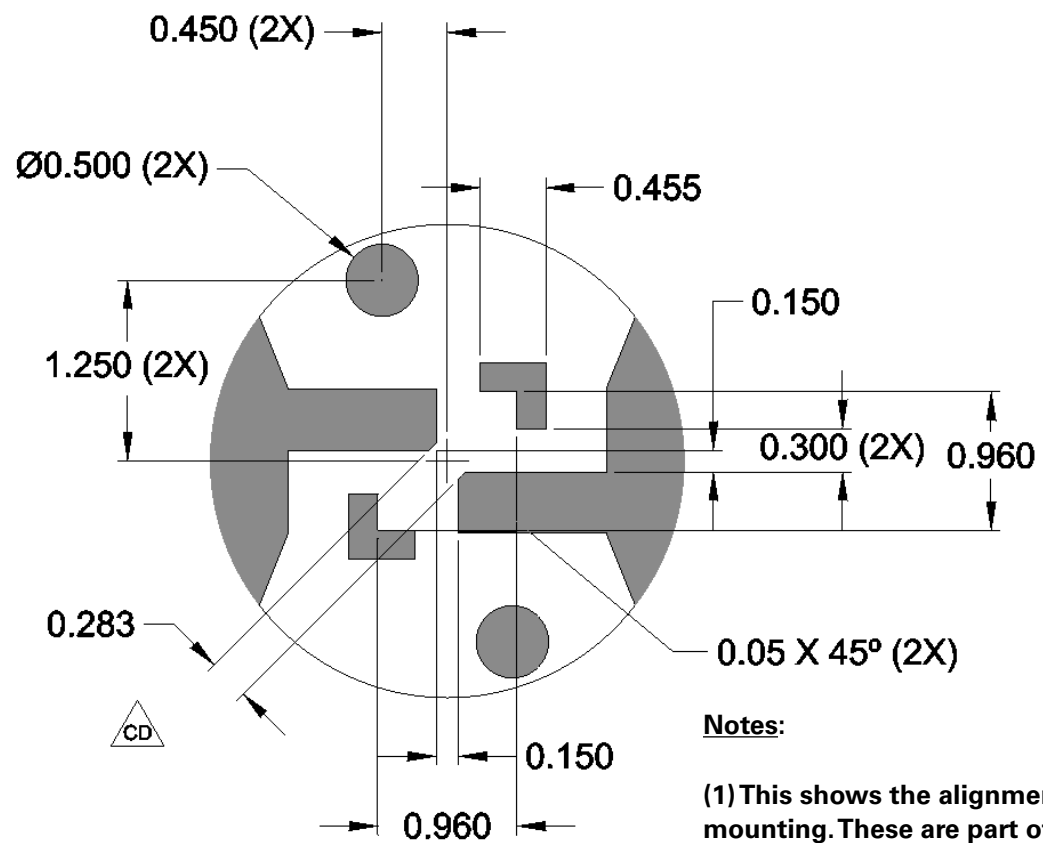
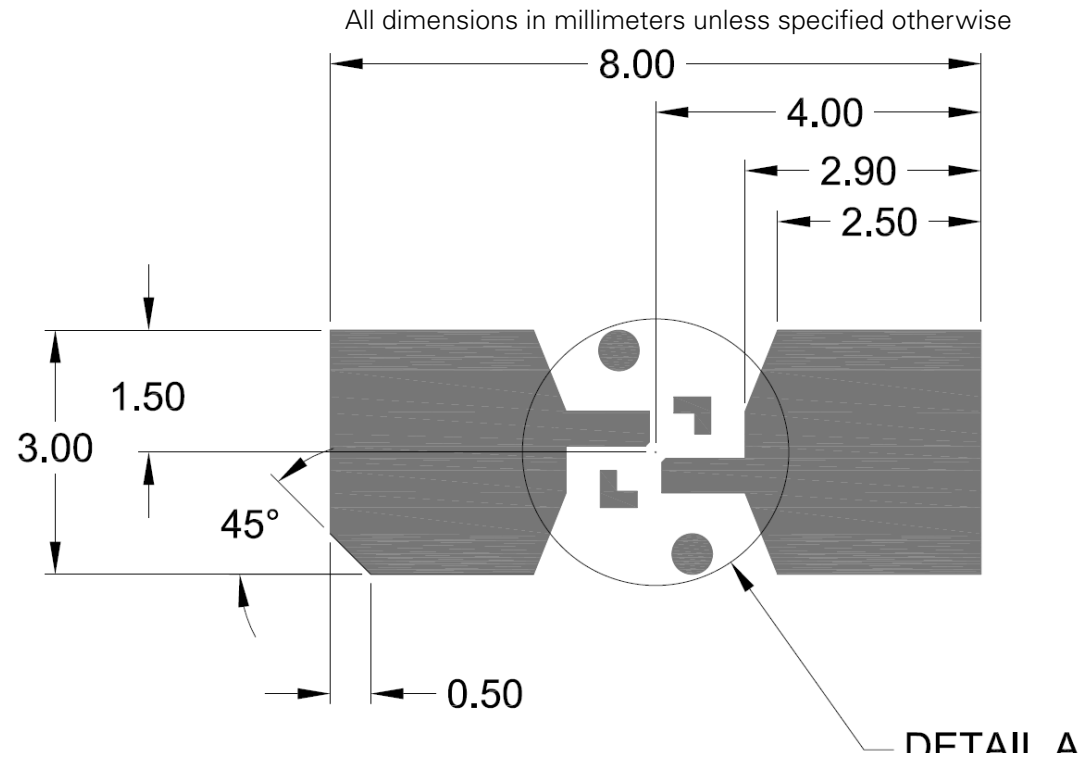


Drawing is rotational symmetric at 180° (except for the corner chamfer)

All dimensions in millimeters unless specified otherwise



Physical Dimensions



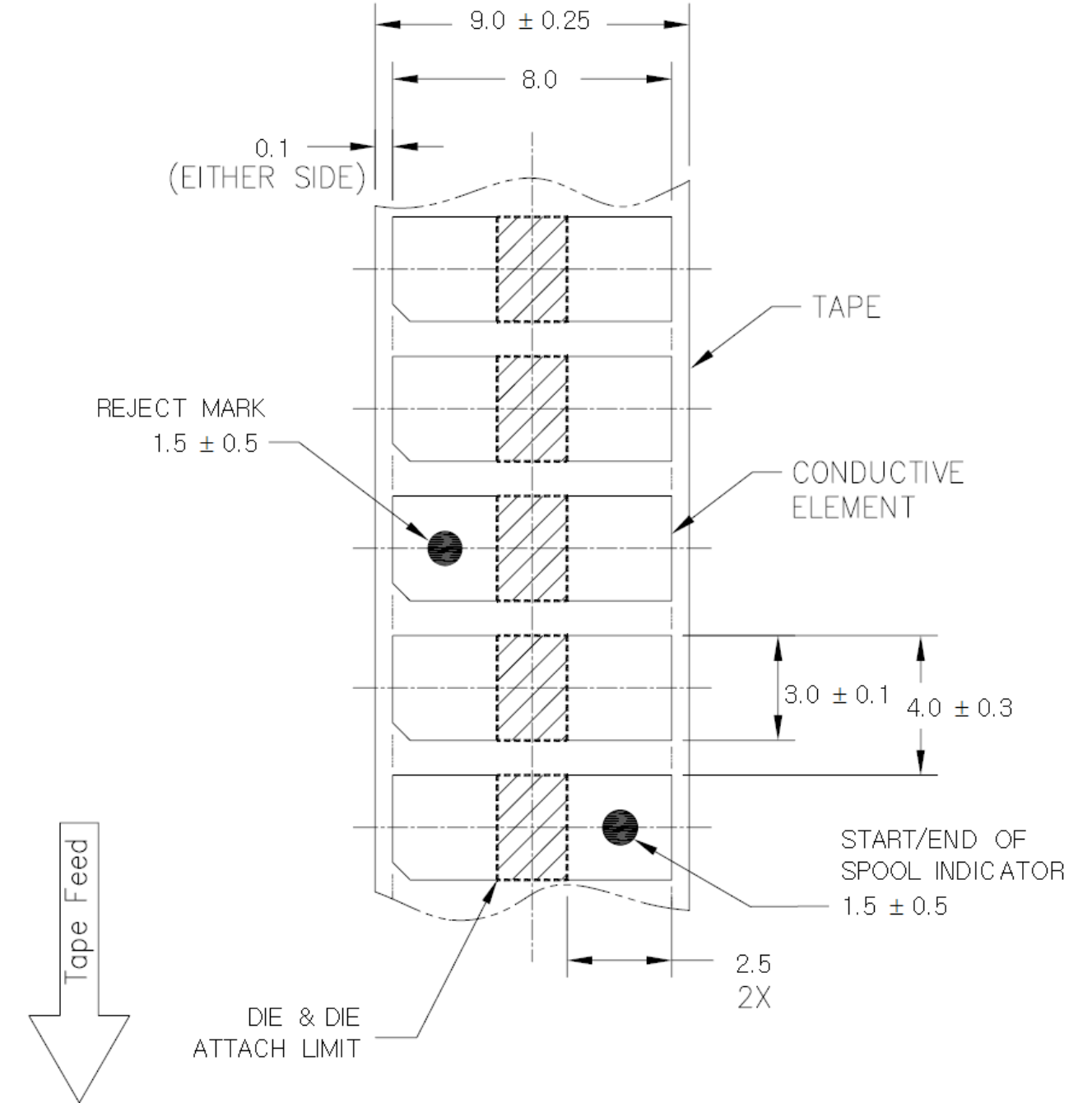
Notes:

- (1) This shows the alignment marks used by Alien for chip mounting. These are part of the strap as provided.
- (2) This diagram does not show the IC mounted in the strap.

DETAIL A

Tape Dimensions

JEDEC MO-283 Variant AA Strap



Reel Parameters

Parameter	Rating
Outside Diameter	13" [33cm]
Inside Diameter	3" [7.6 cm]
Straps Per Reel	20,000 (Nominal)
Reels per Box	3 Reels



Higgs™ 4 Strap Datasheet Addendum

Absolute Maximum Ratings

Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied. Operating the device beyond the absolute maximum ratings may permanently degrade device performance and/or shorten operating lifetime.

Parameter	Rating
Input Current Across Input Pads	1mA
Maximum RF Input Power	+10dBm
Power Dissipation (TAMB = 25°C)	1.5mW
Storage Temperature Range	-40°C to +85°C
Assembly Survival Temperature (60 seconds)	+150°C
ESD Immunity (HBM)	2kV

Operating Conditions and Electrical Characteristics

Symbol	Parameter	Conditions / Capability	Min	Typ	Max	Units
Operating Conditions						
T _A	Operating Temperature		-50		+85	°C
f _{in}	Operating Frequency		840		960	MHz
Electrical Characteristics						
S _R	Sensitivity during Read	With 2dBi directivity of dipole		-20.5		dBm
I _S	Interference Signal Suppression			-4		dB
R _P	Equivalent input parallel resistance	At -20.5 dBm input power		1800		Ohms
C _P	Equivalent input parallel Capacitance	At -20.5 dBm input power		0.95		pF
D _{ret}	Data Retention			50		Years
P _{cycl}	Programming Cycles at 25°C			100,000		Cycles

Ordering Information

Part	Model Number	Description
Higgs™ 4 IC	ALC-370-FS-CU	Strap, Copper on Kapton: JDEC MO-283

December 21, 2014

Copyright© 2014 Alien Technology LLC. All rights reserved.

Alien, Alien Technology, the Alien Technology logo, Spider, Higgs, Dynamic Authentication, QuickWrite, BlockWrite, Squiggle, and the Squiggle logo are trademarks or registered trademarks of Alien Technology Corporation in the U.S. and other countries.

HANDLING PRECAUTIONS Observe standard handling practices to minimize ESD.

DISCLAIMER Application recommendations are guidelines only - actual results may vary and should be confirmed. This is a general purpose product not designed or intended for any specific application.

This product is covered by one or more of the following U.S. patents: 7967204, 7931063, 7868766, 7737825, 7716208, 7716160, 7688206, 7671720, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7542301, 7542008, 7522055, 7500610, 7489248, 7453705, 7452748, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262686, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848. Other patents pending.

This product is licensed under patents of Round Rock Research, LLC, for use solely with UHF RFID Readers (such as Alien reader products) that are licensed under an agreement with Round Rock Research, LLC.



Alien Technology
18220 Butterfield Blvd.
Morgan Hill, CA 95037
866-RFID NOW
www.alientechnology.com