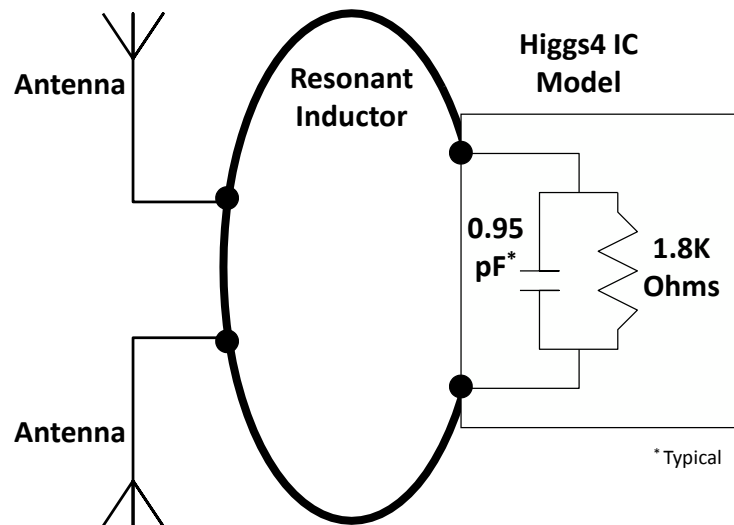


The Higgs-4 SOT is a highly integrated single chip UHF RFID Tag IC packaged in a JEDEC SOT-323 SOT. The chip conforms to the EPCglobal Class-1 Gen-2 specification and provides state-of-the-art performance for a broad range of UHF RFID tagging applications. The Higgs-4 IC is implemented in a low cost CMOS process and uses proven and cost effective EEPROM technology.

Application Diagram

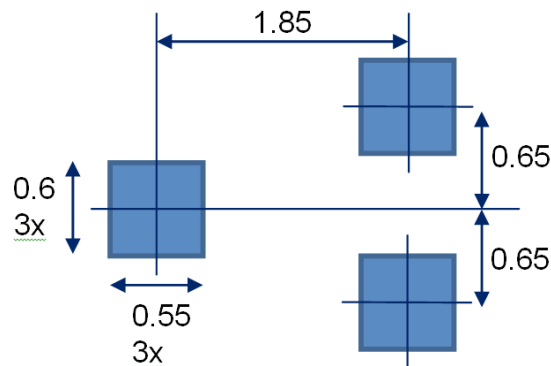
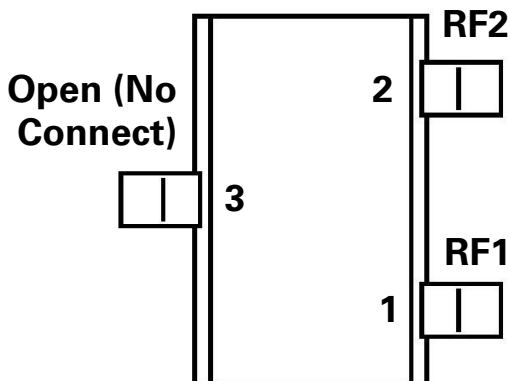


Pin Configuration and Soldering Footprint

Pin Configuration

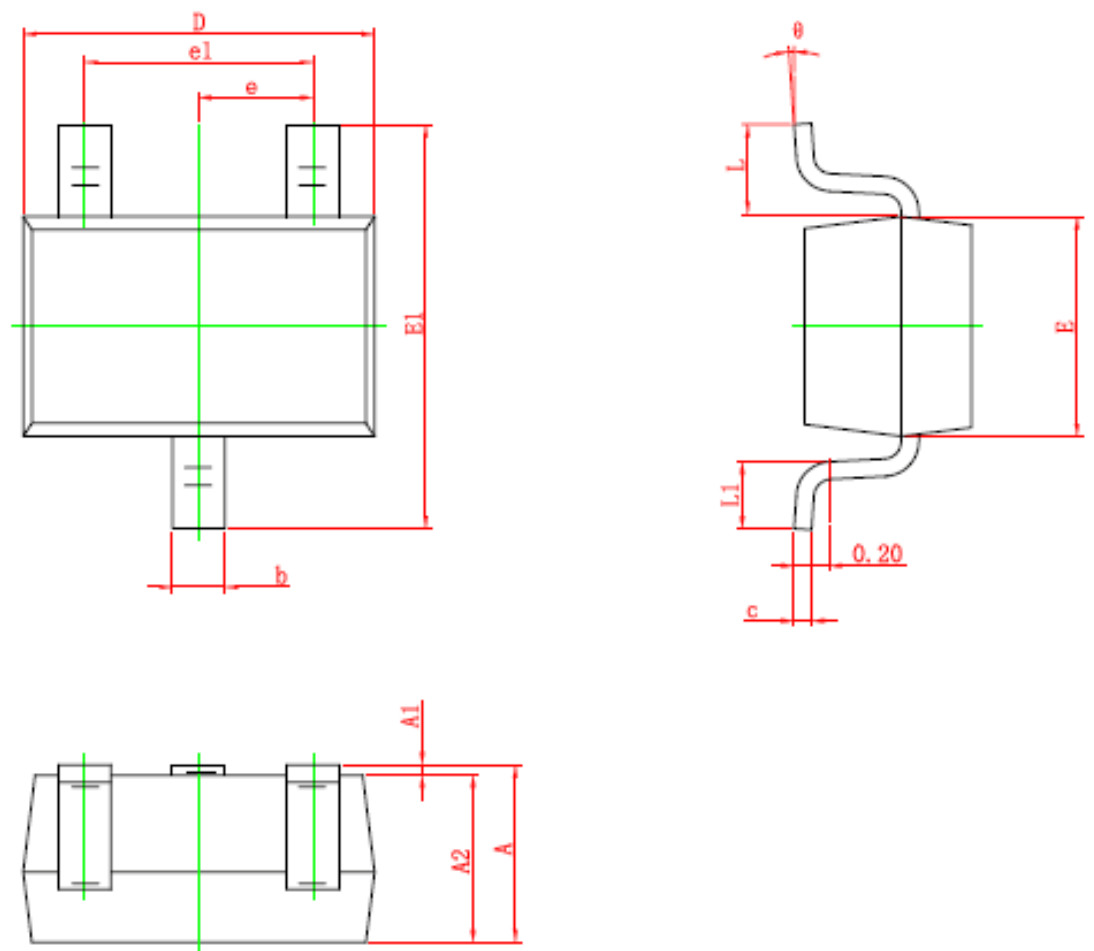
Pin #	Pin Name	Description
1	RF1	RFID antenna RF connection
2	RF2	RFID antenna RF connection for differential antenna or GND for single ended designs
3	Open	Do not connect

BOTTOM VIEW



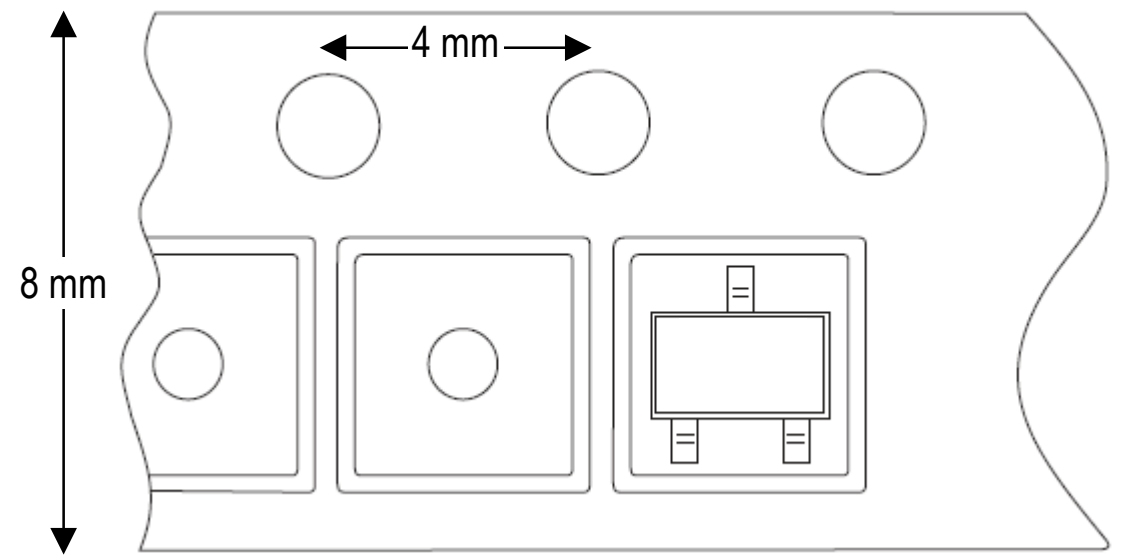
Physical Dimensions
JEDEC SOT-323

All dimensions in millimeters unless specified otherwise

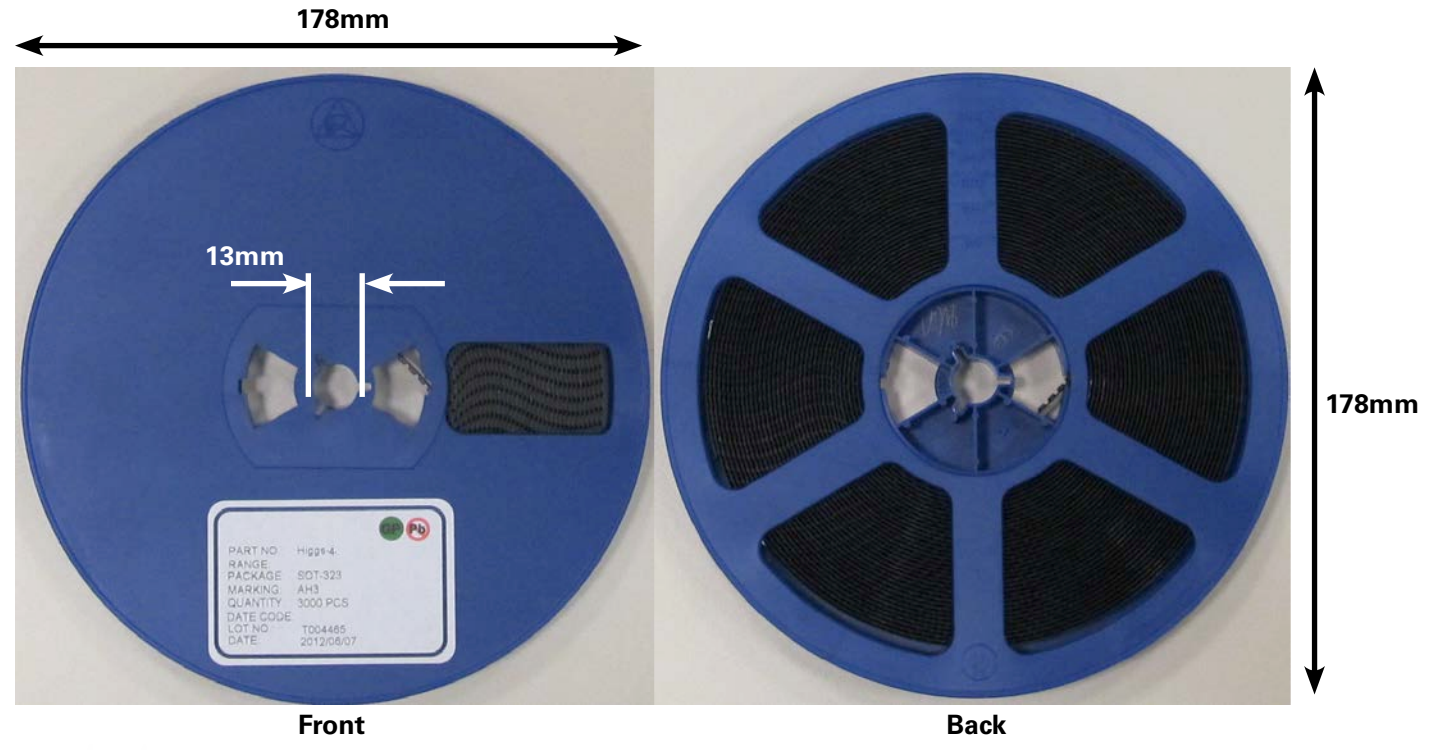


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

Tape Dimensions



Reel Dimensions





Higgs™ 4 SOT 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	10mA
Maximum RF Input Power	+20dBm
Power Dissipation (TAMB = 25°C)	100mW
Storage Temperature Range	-40°C to +85°C
Assembly Survival Temperature (60 seconds)	+235°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-SOT	SMD Package: SOT-323

December 21, 2014

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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.

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