



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

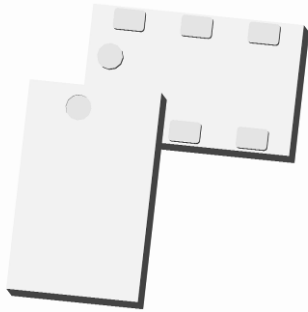
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Xinger®



Ultra Low Profile 0805 5 dB Directional Coupler

Description

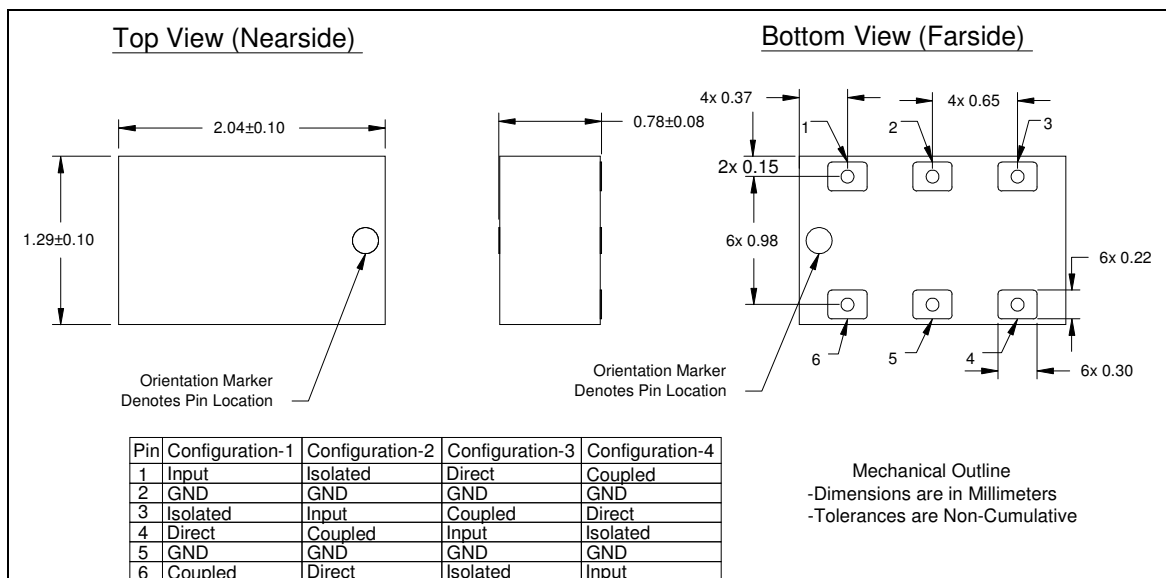
The DC1417J5005AHF is a low cost, low profile sub-miniature high performance 5 dB directional coupler in an easy to use RoHS compliant, Halogen Free surface mount package. It is designed for 1400 – 1700MHz applications including: satellite communications, PMR, and wireless medical telemetry. The DC1417J5005AHF is ideal for power detection, signal injection and other applications where low insertion loss signal monitoring is required. The DC1417J5005AHF is available on tape and reel for pick and place high volume manufacturing. All of the Xinger components are constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability. All parts have been subjected to rigorous qualification testing and units are 100% RF tested.

Detailed Electrical Specifications: Specifications subject to change without notice.

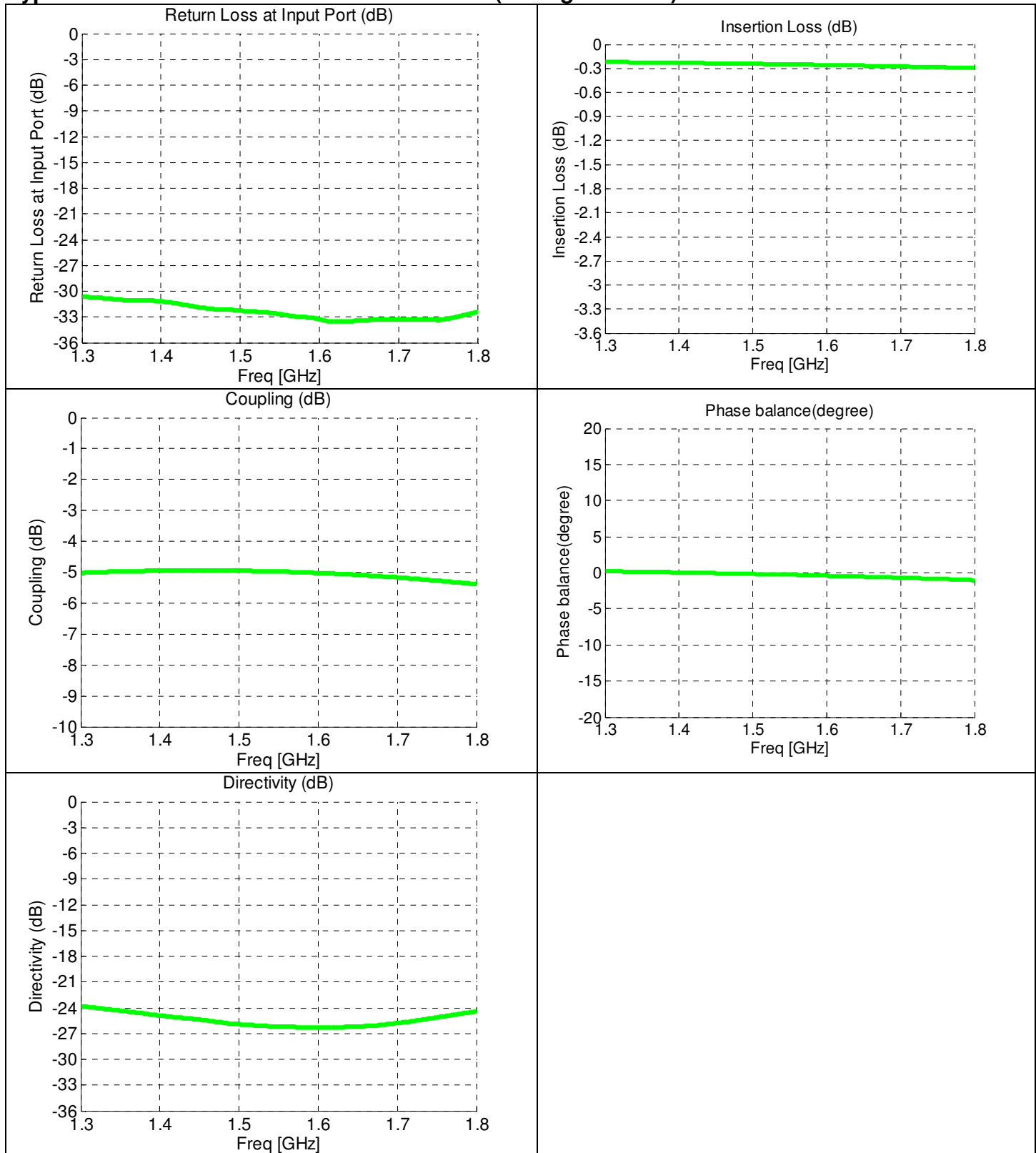
Features:	ROOM (25°C)														
	Frequency (MHz)	Mean Coupling (dB)			Insertion loss (dB)		Return Loss (dB)		Directivity (dB)		Phase Balance (deg)		Frequency Sensitivity (dB)		Power Handling (watts)
		Min	Typ.	Max	Typ.	Max	Typ.	Min	Typ.	Min	Typ.	Max	Typ.	Max	Max
• 1400 – 1700 MHz	1400 - 1700	4.5	5.1	5.5	0.30	0.55	25.1	20.0	25.2	20.0	1.7	3.6	0.10	0.30	2
• Mean Coupling 5dB		4.5	5.1	5.5	0.26	0.50	28.2	20.0	26.0	20.0	1.2	2.9	0.01	0.10	2
• Ultra Low Insertion Loss		4.5	5.1	5.5	0.27	0.50	28.0	20.0	26.0	20.0	1.2	3.0	0.00	0.10	2
• LTE Bands:11,21,24		4.5	5.1	5.5	0.29	0.55	25.5	20.0	25.4	20.0	1.6	3.4	0.08	0.10	2
• Surface Mountable		4.5	5.1	5.5	0.30	0.55	25.1	20.0	25.2	20.0	1.7	3.6	0.10	0.30	2
• Tape & Reel	1427 - 1495	4.5	5.1	5.5	0.26	0.50	28.2	20.0	26.0	20.0	1.2	2.9	0.01	0.10	2
• RoHS Compliant	1495 - 1511	4.5	5.1	5.5	0.27	0.50	28.0	20.0	26.0	20.0	1.2	3.0	0.00	0.10	2
• Halogen Free	1525 - 1661	4.5	5.1	5.5	0.29	0.55	25.5	20.0	25.4	20.0	1.6	3.4	0.08	0.10	2
• 100% RF Tested															
• -55°C to 85°C															

**Specification based on performance of unit properly installed on microstrip printed circuit boards with 50 Ω nominal impedance.

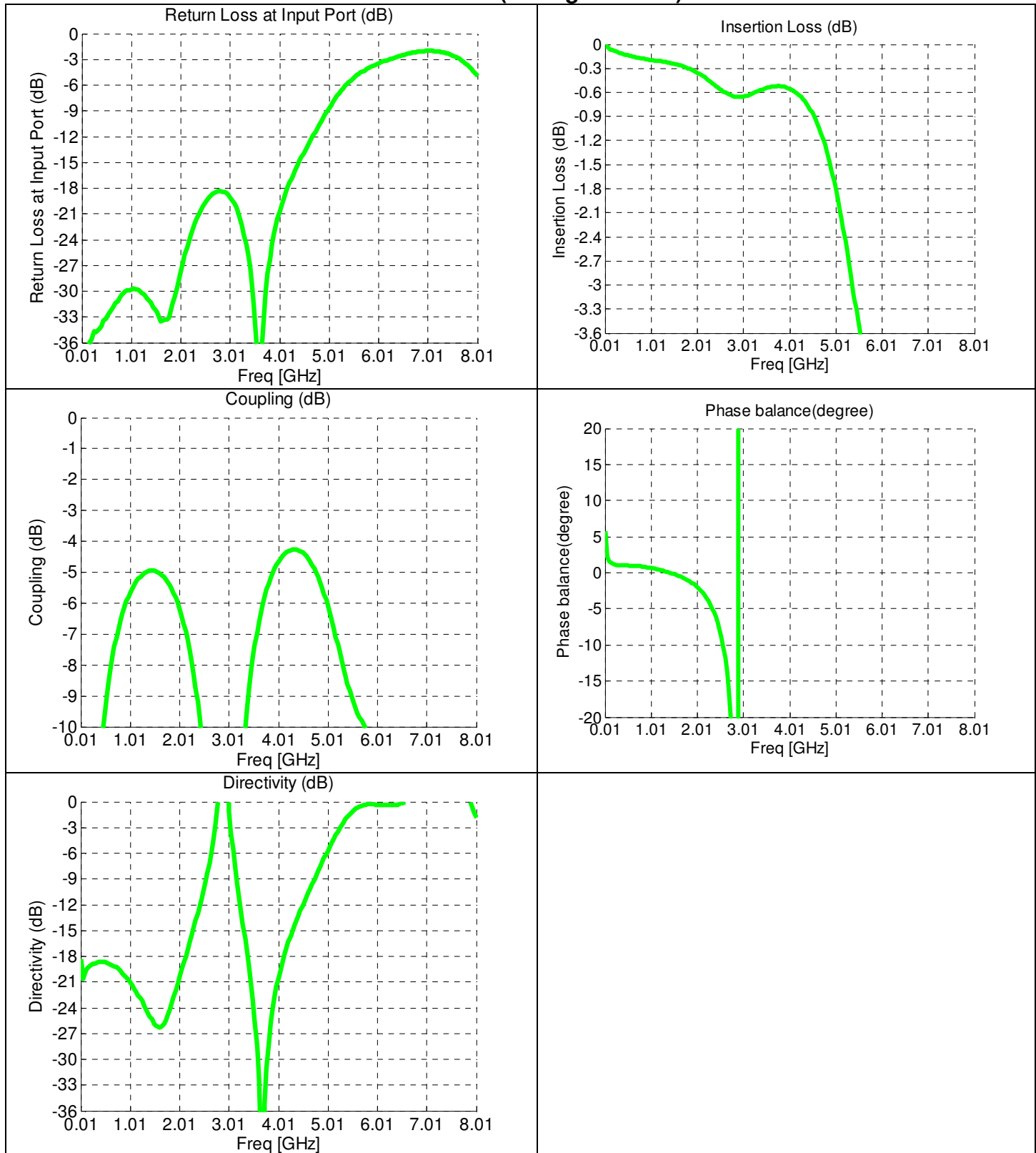
Outline Drawing



Typical Performance: 1300 MHz to 1800 MHz (Configuration 1)



Wideband Performance: 10 MHz to 8010 MHz (Configuration 1)



Definition of Measured Specifications

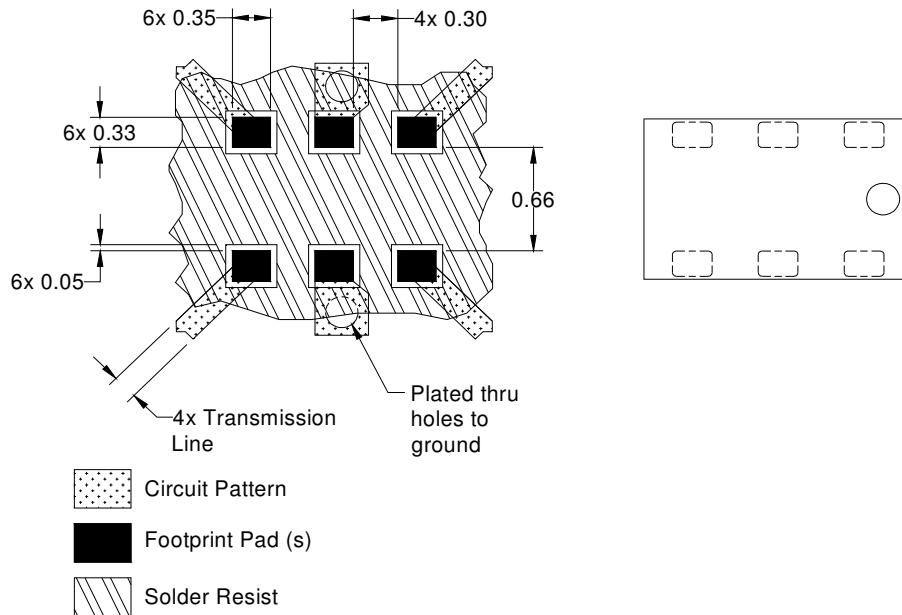
Parameter	Definition	Mathematical Representation <i>i, j, k, m</i> is denoted as the port index of input, isolated, direct and coupled port for specific pin configuration shown in the table above
Return Loss	The impedance match of the coupler to a 50Ω system. Return Loss is an alternate means to express VSWR.	$20\log_{10}(S_{ii})$
Directivity	The power at the isolated port divided by the power at the coupled port	$20\log_{10} \frac{ S_{ji} }{ S_{mi} }$
Insertion Loss	The input power divided by the sum of the power at the two output ports.	$10\log_{10} (S_{mi} ^2 + S_{ki} ^2)$
Mean Coupling	At a given frequency (ω_n), coupling is the input power divided by the power at the coupled port. Mean coupling is the average value of the coupling values in the band. N is the number of frequencies in the band.	$\text{Coupling (dB)} = 20\log_{10} S_{mi} $ $\text{Mean Coupling (dB)} = \frac{\sum_{m=1}^N 20\log_{10} S_{mi} }{N}$
Phase Balance	The difference in phase angle between the two output ports.	$\angle S_{ki} - \angle S_{mi} + 90^\circ$
Frequency sensitivity	The decibel difference between the maximum in band coupling value and the minimum in band coupling value.	$(\text{Max Coupling (dB)} - \text{Min Coupling (dB)})/2$

Mounting Configuration:

In order for Xinger surface mount components to work optimally, the proper impedance transmission lines must be used to connect to the RF ports. If this condition is not satisfied, insertion loss, Isolation and VSWR may not meet published specifications.

All of the Xinger components are constructed from organic PTFE based composites which possess excellent electrical and mechanical stability. Xinger components are compliant to a variety of ROHS and Green standards and ready for Pb-free soldering processes. Pads are Gold plated with a Nickel barrier.

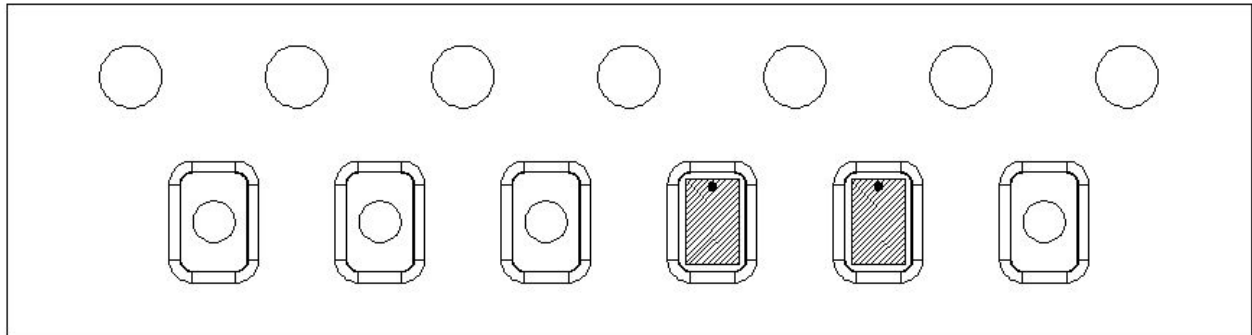
An example of the PCB footprint used in the testing of these parts is shown below. In specific designs, the transmission line widths need to be adjusted to the unique dielectric coefficients and thicknesses as well as varying pick and place equipment tolerances.

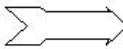


Dimensions are in Millimeters
Mounting Footprint

Packaging and Ordering Information

Parts are available in reel and are packaged per EIA 481-D. Parts are oriented in tape and reel as shown below. Minimum order quantities are 4000 per reel.



Direction of
Part Feed
(Unloading) 

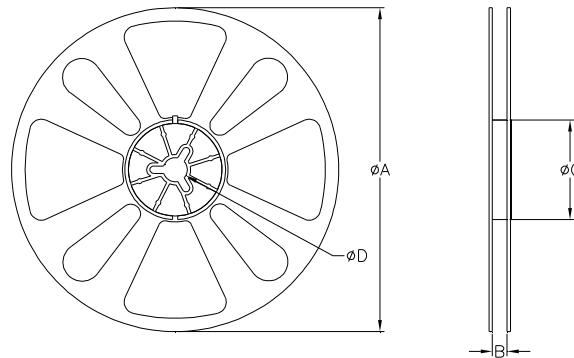


TABLE 1		
QUANTITY/REEL	REEL DIMENSIONS mm	
4000	ϕA	177.80
	B	8.00
	ϕC	50.80
	ϕD	13.00