



Spring probe pins enabling extremely high speed test
up to / beyond -1db@80Ghz

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Introduction

Testing environment requires advanced technologies to support ever increasing demands. Test industry and test socket for semiconductor process have one of the most challenging interconnect applications in electronics due to the combination of harsh operating conditions and extremely high performance requirements, 80 GHz and beyond.

Extremely high speed probe pin

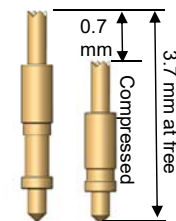
Shorter spring probe for small packages



One piece spring probe for mass volume

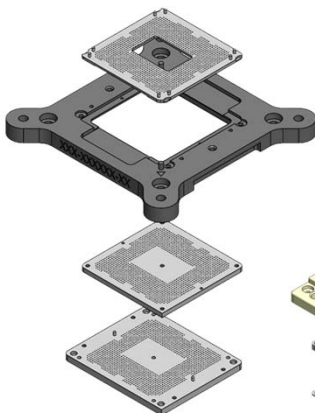


Longer pin customized/ special design for high speed

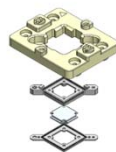


Typically, very short pin is better for extreme high speed but limiting the pin count. For big scale/high pin count, we use custom longer pin designs to tune for the specific frequency application that requires simulations/ experiments

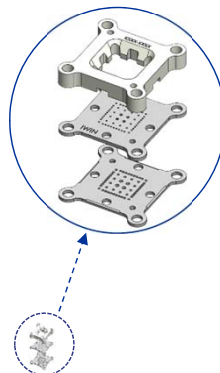
Various sockets for high speed test



Big scale/
High pin count

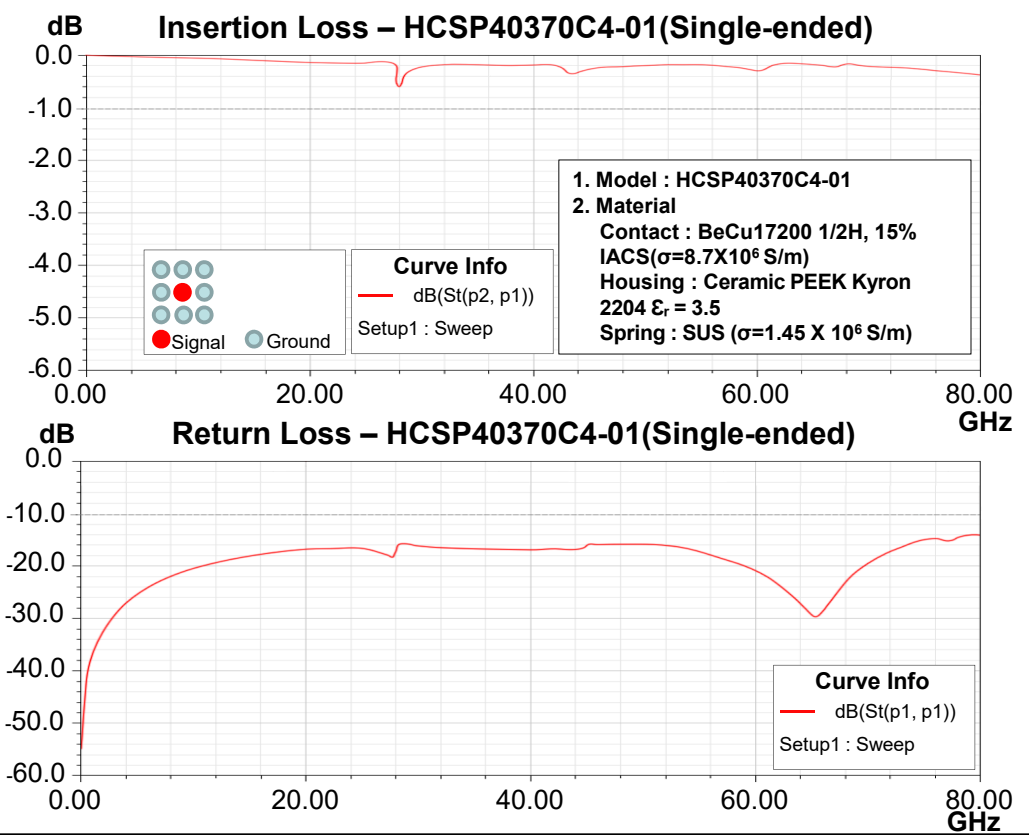


Small scale/
Low pin count



Pictures of Test sockets
for high speed test

HCSP40370C4-01 – 3.7mm length pin but high speed



Mechanical performance (HCSP40370C4-01)

Contact Force vs Travelling Distance

Travelling Distance (mm)	Initial (g)	After 300K cycles (g)
0.16	5.88	6.74
0.21	8.2	8.78
0.26	9.99	10.69
0.31	12	12.8
0.36	13.95	14.5
0.41	15.5	16.34
0.46	17.17	18.1

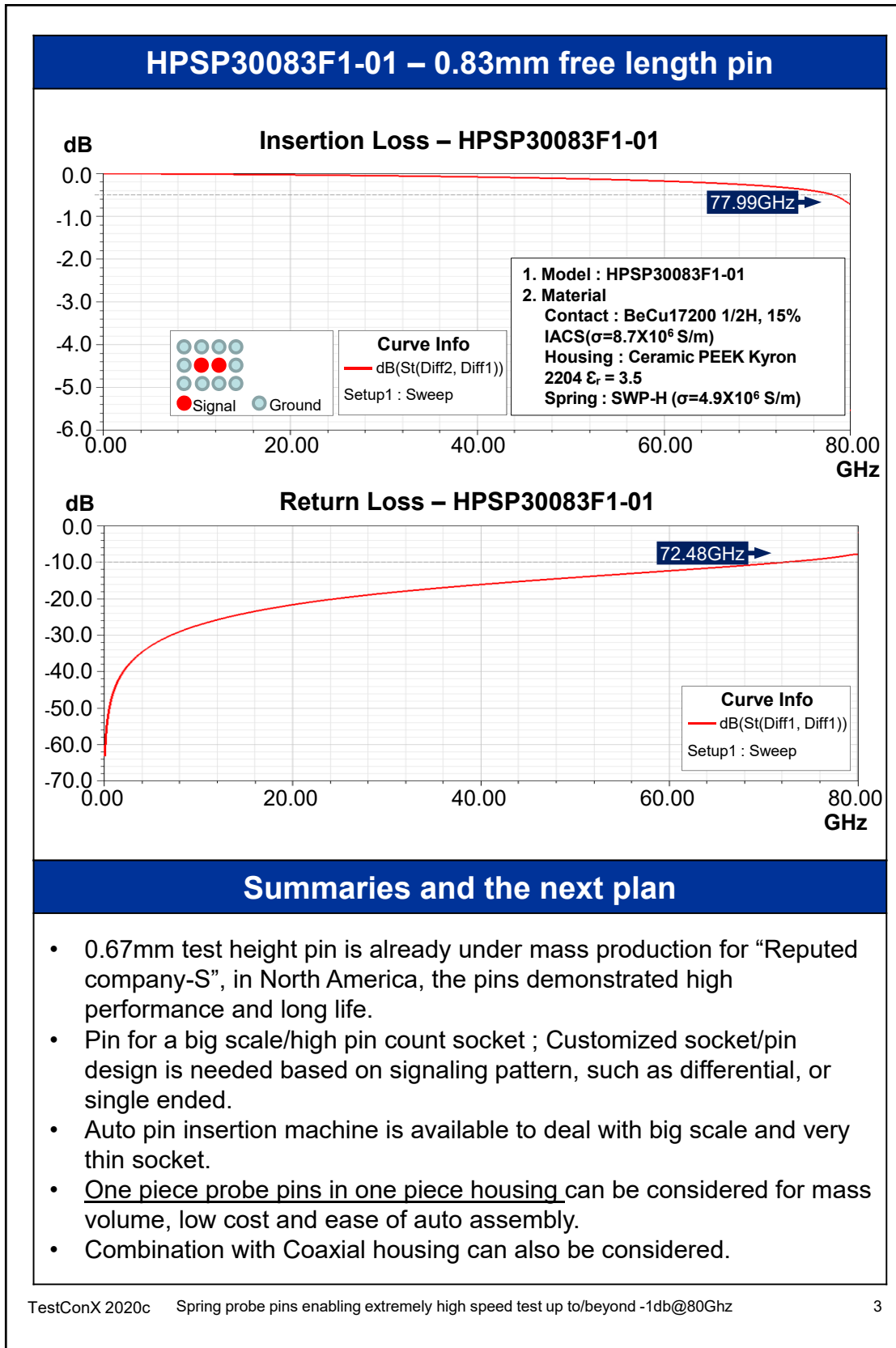
Contact Force vs Cres

Contact Force (g)	Contact Resistance (mΩ)
6g	53.3
8g	46.4
10g	42.1
12g	38.6
14g	35.8
16g	32.9
18g	31

Current Carrying Capacity

Current	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
2.5A	OK	OK	OK	OK	OK
3.0A	OK	OK	OK	OK	OK
3.5A	OK	OK	OK	OK	OK
4.0A	C/F Changed	C/F Changed	C/F Changed	C/F Changed	C/F Changed

Automated Quality control system



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