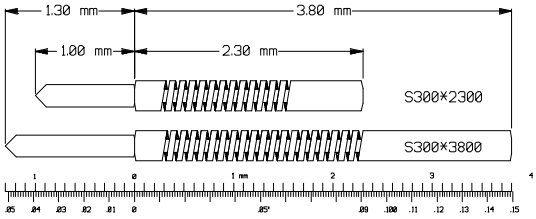
αTest

your fine-pitch connection

AlphaTest Corporation

S300 Series μHELIX® Test Probes

PATENT PENDING



APPLICATIONS

- αTest Electrical contacts in BGA, LGA, PGA test sockets and contactors, with ≥0.36*mm* arrays.
- αTest MCM and hybrid-circuit test fixtures with ≥0.36*mm* centers.
- αTest Panel testing: *fine-pitch* or high density *pcb* and semi-*flex*, glass, ceramic, and composition panels.
- αTest Wafer Burn-In Testing with ≥0.36*mm* centers.
- αTest Controlled Impedance test fixtures and sockets for >100 MHz testing.
- αTest Custom sockets, contactors, or fixtures requiring *fine-pitch*, *high-density*, or *wide-bandwidth* contacts from tester to device under test.

SPECIFICATIONS

minimum spacing:	≥263 *μm* (0.014")
probe diameter:	305 *μm* (0.012")
spring type:	rectangular helix
spring material:	304 stainless steel
spring length options:	
S300*2300	2,3 *mm* (0.091")
S300*3800	3,8 *mm* (0.150")
overall length options:	
S300*2300	3,3 *mm* (0.120")
S300*3800	5,1 *mm* (0.200")
spring force options:	30 *gm* or 100 *gm* @ ½ compliance
spring compliance:	(*for 100 gm spring / 30 gm spring*)
S300*2300	250 *μm* / 300 *μm*
S300*3800	600 *μm* / 700 *μm*
plunger length:	
S300*2300	1,0 *mm* (0.039")
S300*3800	1,3 *mm* (0.051")
plunger tip shape options:	sharp, flat, round, crown
plunger diameter:	221 *μm* (0.0087")
plunger material options:	BeCu +NI+25*μ″* hard Au
	Steel +Ni+*25μ″* hard Au
plunger lubricant:	none
input/output end of probe:	304SS tube +Ni+hard Au
probe resistance:	<30 *m*Ω for >10^6 cycles
μHELIX® spring life:	>10^6 operations
probe temperature range:	-40 to 150°C
probe current rating:	1½ Amps continuous
Installed pointing accuracy:	drill accuracy ±10 *μm*
INSTALLATION NOTES:	
drill size for spring	#80, 343 *μm* (0.0135")
drill size for plunger	#89, 231 *μm* (0.0091")

FEATURES	CHARACTERISTIC	BENEFIT
P short length	• *wide bandwidth*	• improves high frequency digital testing
		• simplifies mixed signal testing
	• low *crosstalk*	• low *fixture-contributed* noise
	• fixture transparency	• reduced fixture/program debug time
P small diameter	• *fine-pitch* placement	• *all-points* contact testing
		• extended life of *fixture-based* ATE
P durable spring	• millions of operations	• reduced fixture life-cycle-cost
P integral tip	• *μm* pointing accuracy	• reduced DUT alignment/test time
P no lubricant in probe	• reduced contamination	• extended *low-resistance* operation
P rectangular helix	• control of specifications	• small size, wide range of forces

http://www.alphatest.com email: atest@evergreen.com Phone 602.545.5518 FAX 602.545.5521

ORDERING INFORMATION:

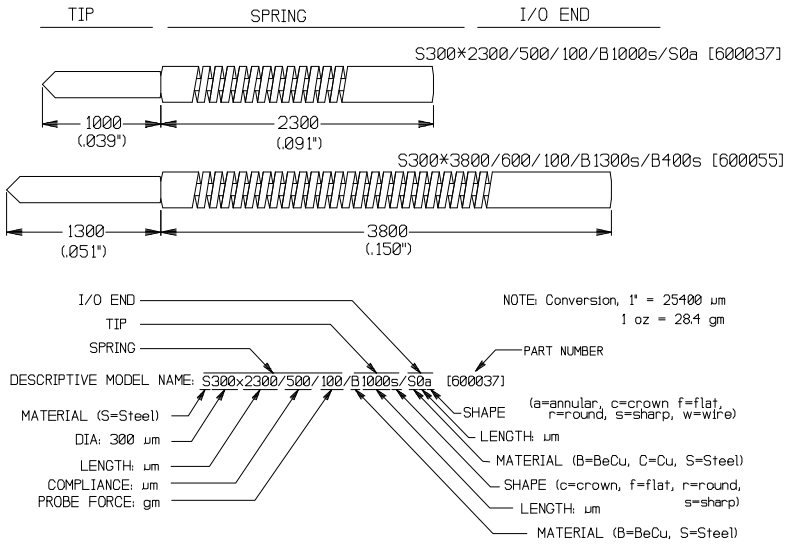
Contact ***AlphaTest*** for additional information or to discuss your application.
Select the basic parameters (size and force and tip shape)

Diameter	[ ] S300	(see S200, S400, S500 data sheets for smaller probes)		
Length	[ ] 2.3mm	[ ] 3.8 mm		
Force	[ ] 100 gm	[ ] 30 gm		
Tip style	[ ] sharp	[ ] round	[ ] flat	[ ] crown

and contact ***AlphaTest*** at 602.545.5518 for part number, price, and delivery quotation.

DESCRIPTIVE MODEL NUMBER:

The ***µHELIX®*** Test Probe's Descriptive Model Number (DMN) contains most of the critical specifications for S300 Series Test Probes and provides a quick reminder off the size and force specifications.. The probe's six digit part number [600037] uniquely identifies each probes application specifications and manufacturing procedures.



FIXTURE CONSTRUCTION

fine-pitch applications	Refer to application note TN0007	"***µHELIX*** *fine-pitch* fixtures"
high pin-count applications	Refer to application note TN0008	"***µHELIX*** *high-density* fixtures"
wide bandwidth applications	Refer to application note **TN0009**	"***µHELIX*** *wide-bandwidth* fixtures"
noise reduction techniques	Refer to application note TN0010	"***µHELIX*** *low-noise* fixtures"
socket / contactor constion	Refer to application note TN0011	"***µHELIX*** Sockets/Contactor construction"