

SOIC* Test Clips

Now normally hard-to-access SOICs can be connected to test probes quickly and easily without the risk of shorting out chips or damaging other board components. SOIC test clips are available in different pin sizes to accommodate a wide range of requirements. Industry standard .025" square contact pins on .050" centers are staggered to permit easy attachment of IDC socket connectors or wire wrapping and help prevent shorting of adjacent probes. With these smaller test clips, you can stack SOICs as close as .050" end-to-end. Like our other test clips, the SOIC series features heavy duty helical compression springs that provide firm, positive contact pressure, an insulating contact comb to prevent accidental shorts and a patented wiping action to ensure integrity in testing. The steel hinge pin and tough glass-filled polyester body, UL rated 94V-0, provide long service life. Available in gold or alloy 764, SOIC test clips from 3M offer solutions for all your test and prototype needs.

*SOIC (Small Outline Integral Circuits).

Stock No.	Mfr.'s Type	Description	EACH			
			1-9	10-24	25-49	50-99
617-4300	923660-16	16 Pin, Wide, Alloy	10.25	9.66	8.87	8.28
617-4301	923660-18	18 Pin, Wide, Alloy	10.93	10.29	9.46	8.83
617-4302	923660-20	20 Pin, Wide, Alloy	11.04	10.39	9.56	8.92
617-4303	923660-24	24 Pin, Wide, Alloy	12.56	11.82	10.86	10.15
617-4304	923660-28	28 Pin, Wide, Alloy	13.54	12.77	11.73	10.96
617-4305	923665-16	16 Pin, Wide, Gold	11.98	11.26	10.36	9.66
617-4306	923665-18	18 Pin, Wide, Gold	12.08	11.35	10.44	9.74
617-4307	923665-20	20 Pin, Wide, Gold	12.23	11.52	10.59	9.89
617-4308	923665-24	24 Pin, Wide, Gold	13.97	13.16	12.09	11.29
617-4309	923665-28	28 Pin, Wide, Gold	15.10	14.21	13.08	12.21
617-4310	923650-08	8 Pin, Narrow, Alloy	9.32	8.78	8.44	7.54
617-4311	923650-14	14 Pin, Narrow, Alloy	8.99	8.45	7.77	7.26
617-4312	923650-16	16 Pin, Narrow, Alloy	9.79	9.21	8.47	7.90
617-4313	923655-08	8 Pin, Narrow, Gold	10.11	9.52	8.76	8.17
617-4314	923655-14	14 Pin, Narrow, Gold	11.01	10.37	9.54	8.90
617-4315	923655-16	16 Pin, Narrow, Gold	11.23	10.57	9.73	9.07

PLCC* Surface Mount Test Clips

Our Surface Mount Test Clip is truly the state-of-the-art for testing Plastic Leaded Chip Carrier (PLCC) style integrated circuits. The unique action wedge design — with all four sides opening simultaneously — provides a faster and easier attachment to the PLCC. The helical compression spring and insulating contact combs ensure integrity in contact when testing. Our narrow body design allows components to be tested with as little as .100" lead-to-lead spacing, side stackable at .200" lead-to-lead spacing. Probe access points are immediately visible for fast and safe individual lead testing, while staggered contact rows on .100" centers allow for easy probe attachment and help prevent accidental shorting of adjacent probes. Industry standard .025" square contact pins permit easy attachment of female socket connectors or wire wrapping.



*PLCC (Plastic Leaded Chip Carrier).

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
617-4316	923670-20	20 Pin, Alloy	28.12	25.96	21.63
617-4317	923670-28	28 Pin, Alloy	29.40	25.70	23.98
617-4318	923670-44	44 Pin, Alloy	36.00	33.24	31.82
617-4319	923670-68	68 Pin, Alloy	44.15	38.61	36.02
617-4320	923675-20	20 Pin, Gold	30.66	26.81	25.02
617-4321	923675-28	28 Pin, Gold	36.78	32.16	30.02
617-4322	923675-44	44 Pin, Gold	40.94	35.81	33.42
617-4324	923675-52	52 Pin, Gold	43.41	37.96	35.44
617-4323	923675-68	68 Pin, Gold	48.72	42.60	39.75
617-4325	923675-84	84 Pin, Gold	50.17	43.86	40.94

DIP Test Clips

The narrow-nose design makes it easy to attach on high-density boards, fits onto ICs with only 0.1" between leads and adjacent components. "Duck bill" contacts are flat, won't roll off IC leads. Open-nose construction enables probe at IC leg. Pin rows are offset for easy attachment of probes. "Contact comb" construction separates contacts with precision. No shorts. Heavy duty, industrial-grade springs for firm contact pressure. Steel pivot pin. The standard models have "nail-head" leads which keep probes and test leads from sliding off. The connector-compatible models have headless leads .025" long to allow attachment of cable assemblies. Leads are .031" in diameter on .100" centers on both models.



Gold-Plated Contacts

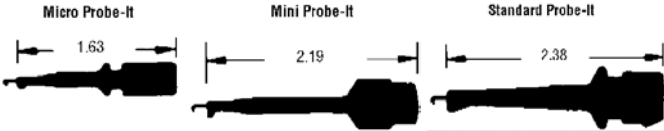
Standard		Connector-Compatible		DIP Compatibility	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-9	10-24	25-49
617-0058	923743-08	617-1058	923739-08	8-pin	9.29	8.76	8.04
617-0060	923743-14	617-1060	923739-14	14-pin	9.15	8.62	7.93
617-0066	923743-16	617-1066	923739-16	16-pin	9.93	9.35	8.60
617-0068	923743-18	617-1068	923739-18	18-pin	14.37	13.53	12.45
617-0070	923743-20	617-1070	923739-20	20-pin	15.14	14.25	13.11
617-0074	923743-24	617-1073	923738-24	24-pin	20.55	19.36	17.97
617-0078	923743-28	617-1071	923738-28	28-pin	25.24	23.76	22.07
617-0090	923743-40	617-1090*	923739-40	40-pin	30.05	28.30	26.28

Alloy 770 Contacts

617-0008	923695	617-1008	923690-08	8-pin	7.25	6.77	6.23
617-0014	923698	617-1014	923690-14	14-pin	7.32	6.84	6.29
617-0016	923700	617-1016	923690-16	16-pin	7.43	6.93	6.38
617-0017	923702	617-1017*	923690-16LSI	16-LSI	14.01	13.19	12.12
617-0018	923703	617-1018	923690-18	18-pin	11.43	10.77	9.90
617-0020	923704	617-1020	923690-20	20-pin	11.49	10.84	9.96
617-0022	923705	617-1021	923689-22	22-pin	14.90	14.03	12.89
617-0024	923714	617-1025	923689-24	24-pin	16.54	15.58	14.31
617-0028	923718	617-1026	923689-28	28-pin	19.23	18.10	16.81
617-0036	923720	617-1036*	923690-36	36-pin	22.70	21.37	19.85
617-0040	923722	617-1040*	923690-40	40-pin	22.82	21.48	19.94
617-0048	923724	617-1048*	923690-48	48-pin	32.83	30.91	28.71
617-0064	923726	617-1064*	923690-64	64-pin	37.89	35.66	33.13

*Center is .600.

Probe-It Clips



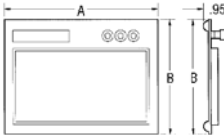
Probe-Its provide a fast, easy method of testing individual component leads and minimize accidental shorts. Excellent for use with test clips. Maxi is 3.56" dimension with hook contact retracted.

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
617-0102	923832-BK-B	Micro Probe-it, Black	1.58	1.38	1.27
617-0104	923832-BU-B	Micro Probe-it, Blue	1.58	1.38	1.27
617-0106	923832-GN-B	Micro Probe-it, Green	1.58	1.38	1.27
617-0108	923832-RD-B	Micro Probe-it, Red	1.58	1.38	1.27
617-0110	923832-WT-B	Micro Probe-it, White	1.58	1.38	1.27
617-0112	923832-YL-B	Micro Probe-it, Yellow	1.58	1.38	1.27
617-0114	923837-BK-B	Mini Probe-it, Black	1.43	1.25	1.15
617-0118	923837-GN-B	Mini Probe-it, Green	1.43	1.25	1.15
617-0120	923837-RD-B	Mini Probe-it, Red	1.43	1.25	1.15
617-0122	923837-WT-B	Mini Probe-it, White	1.43	1.25	1.15
617-0124	923837-YL-B	Mini Probe-it, Yellow	1.43	1.25	1.15
617-0126	923842-BK-B	Standard Probe-it, Black	3.06	2.55	2.31
617-0128	923842-RD-B	Standard Probe-it, Red	3.06	2.55	2.31
617-0103	923847-BK-B	Maxi Probe-it, Black	2.61	2.33	2.14
617-0105	923847-RD-B	Maxi Probe-it, Red	2.61	2.33	2.14

617-0107. 923848-C. Micro Probe-it, Assortment PER PK./6 8.46
617-0109. 923850-C. Mini Probe-it, Assortment..... PER PK./6 8.81

Solderless Breadboards (300 Series)

- Simply Plug in Components and Interconnect with Ordinary 22-Gauge Solid Wire; Time Consuming Soldering Is Eliminated and All Components Can Be Used Again and Again
- Alpha-Numeric Identification Along the Strips Allows for Fast and Easy Layout Designs and Project Applications; Every Tie-Point Position on the Strip Can Quickly Be Identified By a Letter and Number Combination
- 3M Jumper Wires Are Included
- DIPs of all Sizes and a Wide Variety of Discrete Components with Lead Diameters of Up to .032" Can Be Used
- The Sturdy Metal Base Plate Serves as a Ground Plane to Help Minimize Noise and Voltage Spikes in Today's High-Speed Circuits
- By Jumping Across the Center Area, Full-Length Distribution Buses Can Be Created Vertically
- Use the 5-Way Binding Posts for Easy Connection to Ground, Power Supply, and Other External Equipment



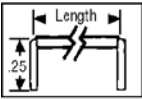
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3M Series 300 Breadboards incorporate state-of-the-art techniques in design and fabrication to yield a circuit-building system with unparalleled flexibility and reliability. A voltage distribution system is integrated with the basic component breadboarding matrix, and 5-way binding posts provide the interface for connections from the power supply, signal generators or other external equipment. All models incorporate the 3M laboratory-proven multi-tie-point terminal design for convenient, solderless, plug-in circuit building. Each terminal position contains electrically connected tie-points spaced on a continuous .100" matrix to accept any component with .100" lead spacing as well as components whose leads can be dressed to fit. The surface of the steel base is high gloss baked enamel for protection. Rubber feet prevent sliding during bench work.

Stock No.	Mfr.'s Type	Model	DIP Capacity Up To	Total Tie Points	No. of Binding Posts	Dim. (In.)		EACH	
						A	B	1-4	5-9
617-3301	922306	306	6-14 Pin	610	2	5.40	4.00	23.42	19.58
617-3302	922309	309	9-14 Pin	840	3	7.00	4.00	26.26	22.33
617-3318	922318	318	18-14 Pin	1824	3	7.75	6.25	52.44	44.57
617-3338	922327	327	27-14 Pin	2712	4	8.00	9.25	67.04	56.99
617-3303	922336	336	36-14 Pin	3648	4	10.25	9.25	87.16	72.88
617-3304	922345	345	45-14 Pin	4520	4	12.44	9.75	109.24	91.35
617-3305	922354	354	54-14 Pin	5424	4	14.69	9.75	133.84	113.76

Jumper Wires

- For Quick, Neat Circuit Connections



Speed your circuit building even more. Each wire is stripped 1/4" and bent 90° on both ends for easy insertion. All Jumper Wires are PVC insulated #22 AWG solid, tinned copper and are recommended for use with all solderless breadboarding units from ESM.

Stock No.	Mfr.'s Type	Length Inches	Color	Pkg. Qty.	PER PKG.			
					1-9	10-24	25-49	50-99
617-3451	923345-01	0.1	(No Insulation)	200	6.01	4.97	4.55	4.22
617-3452	923345-02	0.2	Red	200	6.01	4.97	4.55	4.22
617-3453	923345-03	0.3	Orange	200	6.01	4.97	4.55	4.22
617-3454	923345-04	0.4	Yellow	200	6.01	4.97	4.55	4.22
617-3455	923345-05	0.5	Green	200	6.01	4.97	4.55	4.22
617-3456	923345-06	0.6	Blue	150	6.01	4.97	4.55	4.22
617-3457	923345-07	0.7	Violet	150	6.01	4.97	4.55	4.22
617-3458	923345-08	0.8	Gray	150	6.01	4.97	4.55	4.22
617-3459	923345-09	0.9	White	150	6.01	4.97	4.55	4.22
617-3460	923345-10	1.0	Brown	100	6.01	4.97	4.55	4.23
617-3461	923345-20	2.0	Red	100	6.01	4.97	4.55	4.22
617-3462	923345-30	3.0	Orange	75	6.01	4.97	4.55	4.22
617-3463	923345-40	4.0	Yellow	75	6.01	4.97	4.55	4.22
617-3464	923345-50	5.0	Green	75	6.01	4.97	4.55	4.22

Jumper Wire Kit. 14 different lengths, 25 pieces of each. Compartmented box.
617-3501. 923351. 1-9..... EACH 18.28
10-24..... EACH 17.45