



Quick Reference Guide

PLASTI-GRIP Terminals & Splices

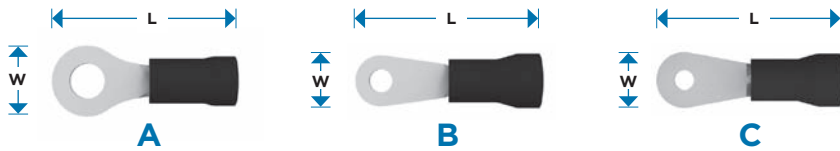
Pre-insulated PLASTI-GRIP solderless terminals and splices are designed specifically to answer the need for inexpensive, insulated electrical terminations. They can be used in almost every type of commercial application and accommodate wire sizes from 22 AWG through 2/0 AWG. Carefully engineered application tooling has been developed to ensure uniformly high quality terminations. Tool and terminal have been designed as a team to promote ease and speed of application and at the same time to provide precise crimping pressure for every wire size. The wire and the terminal barrel form a homogeneous mass of metal, providing a connection of maximum conductivity, tensile strength, and high resistance to corrosion. The quality performance, the facility of installation and the inherent simplicity make them ideal for many industrial applications. PLASTI-GRIP products are available as rings, spades, flanged spaded, slotted rings, splices and several other varieties. Wire ranges for the terminals and splices are 22 AWG through 2/0 and stud sizes from #2 through 1/2".

KEY FEATURES AND BENEFITS

- Vinyl insulation sleeve provides good dielectric strength and supports the wire insulation so that no bare wire is exposed
- Most product is UL and CSA approved
- Most product rated to 105 degrees C, with an operating voltage of 600 V
- Insulation is 94V-0 rated
- Funneled wire entry on terminal prevents turned back wire strands and permits rapid wire insertion during high speed production
- Serrations in the crimp barrel provide maximum contact and tensile strength after crimping

PRODUCT APPLICATIONS

- HVAC
- Instruments/Controls
- Lighting
- Switchgear
- Power Supplies
- Panel Boxes
- Transportation
- Motors

**MATERIAL**

Insulation: Vinyl, UL 94V-0
 Terminal Body: Copper per ASTM B-152
 Plating: Tin per ASTM B-545

Ring Tongue Terminals

Wire Size		Material Thickness		Studsize/ Pin Length Wire Pin		Standard Part Number	Width (W)		Length (L)		Color	Max. Wire Insulation Dia.		Also available in ⁴		Remarks
AWG	mm ²	inch	mm	U.S.	mm		inch	mm	inch	mm		inch	mm	Tape & Reel	Small Pack	
22-16	0,26-1,65	.033	0,84	2	M2	34140	.218	5,54	.684	17,37	●	.140	3,56	✓	✓	A
				5	M3	34141	.218	5,54	.684	17,37	●	.140	3,56	✓	✓	A
				5	M3	34143	.281	7,14	.809	20,55	●	.140	3,56	✓	-	A
				6	M3.5	32945	.218	5,54	.684	17,37	●	.125	3,18	✓	✓	A
				6	M3.5	34142	.218	5,54	.684	17,37	●	.140	3,56	✓	-	A
				6	M3.5	32947	.281	7,14	.809	20,55	●	.125	3,18	✓	✓	A
				6	M3.5	34144	.281	7,14	.809	20,55	●	.140	3,56	✓	✓	A
				6	M3.5	34147	.281	7,14	.809	20,55	●	.140	3,56	✓	✓	A
				8	M4	32948	.281	7,14	.809	20,55	●	.125	3,18	✓	-	A
				8	M4	34145	.281	7,14	.809	20,55	●	.140	3,56	✓	✓	A
				8	M4	32951	.312	7,92	.856	21,74	●	.125	3,18	✓	✓	A
				8	M4	34148	.312	7,92	.856	21,74	●	.140	3,56	✓	✓	A
				10		34146	.281	7,14	.809	20,55	●	.140	3,56	✓	✓	A
				10		35451	.281	7,14	.809	20,55	●	.170	4,32	✓	-	A
				10		32952	.312	7,92	.856	21,74	●	.125	3,18	✓	✓	A
				10		34149	.312	7,92	.856	21,74	●	.140	3,56	✓	-	A
		.031	0,80		M5	130014	.315	8,00	.858	21,80	●	.140	3,56	✓	✓	A
		.033	0,84	1/4	M6	32953	.469	11,91	1.090	27,69	●	.125	3,18	✓	✓	A
				1/4	M6	34150	.469	11,91	1.090	27,69	●	.140	3,56	✓	✓	A
		.031	0,80	1/4	M6	130054	.469	11,91	1.095	27,81	●	.140	3,56	-	✓	A
		.033	0,84	5/16	M8	34151	.469	11,91	1.090	27,69	●	.140	3,56	✓	✓	A
16-14	1,04-2,62	.033	0,84	3/8		34152	.531	13,49	1.230	31,24	●	.140	3,56	✓	✓	A
				6	M3.5	34158	.250	6,35	.715	18,16	●	.170	4,32	✓	✓	A
				6	M3.5	34159	.343	8,71	.871	22,12	●	.170	4,32	✓	✓	A
				8	M4	328527	.312	7,92	.825	20,96	●	.170	4,32	✓	✓	A
				8	M4	32959	.343	8,71	.871	22,12	●	.145	3,68	✓	✓	A
				8	M4	34160	.343	8,71	.871	22,12	●	.170	4,32	✓	✓	A
				10		32960	.343	8,71	.871	22,12	●	.145	3,68	✓	✓	A
				10		34161	.343	8,71	.871	22,12	●	.170	4,32	✓	✓	A
		.031	0,80		M5	130102	.343	8,70	.878	22,30	●	.193	4,90	✓	✓	A
		.033	0,84	1/4	M6	34162	.469	11,91	1.090	27,69	●	.170	4,32	✓	✓	A
		.031	0,80		M6	130126	.469	11,90	1.098	27,90	●	.193	4,90	✓	✓	A
		.033	0,84	5/16	M8	34163	.469	11,91	1.090	27,69	●	.170	4,32	✓	✓	A
				3/8		34164	.531	13,49	1.248	31,70	●	.170	4,32	✓	-	A
		.031	0,80		M10	160136	.657	16,70	1.244	31,60	●	.193	4,90	-	✓	A
		.042	1,07	6	M3.5	34852	.281	7,14	.953	24,21	●	.250	6,35	✓	✓	A
12-10	2,62-6,64	.042	1,07	8	M4	34853	.375	9,53	1.098	27,89	●	.250	6,35	✓	✓	A
				10		330518	.312	7,92	1.052	26,72	●	.230	5,84	✓	-	A
				10		34854	.375	9,53	1.098	27,89	●	.250	6,35	✓	✓	A
		.039	1,00		M5	160292	.374	9,50	1.098	27,90	●	.252	6,40	✓	✓	A
				1/4	M6	165035	.500	12,70	1.184	30,07	●	.267	6,78	-	✓	A
		.042	1,07	1/4	M6	34855	.531	13,49	1.327	33,71	●	.250	6,35	✓	✓	A
				5/16	M8	34856	.531	13,49	1.327	33,71	●	.250	6,35	✓	✓	A
		.039	1,00		M8	160296	.500	12,70	1.185	30,10	●	.248	6,30	-	✓	A
		.042	1,07	3/8		34173	.593	15,06	1.421	36,09	●	.230	5,84	✓	✓	A
		.039	1,00		M10	160300	.594	15,09	1.433	36,40	●	.248	6,30	-	✓	A
		.042	1,07	1/2	M12	34837	.750	19,05	1.594	40,49	●	.250	6,35	✓	✓	A
8	6,64-10,50	.043	1,09	8	M4	52041	.478	12,14	1.586	40,28	●	.360	9,14	✓	-	C
				10		52263	.431	10,95	1.556	39,52	●	.360	9,14	✓	-	B
				10		52263-1	.431	10,95	1.576	40,03	●	.330	8,38	✓	-	B
				1/4	M6	52041-1	.478	12,14	1.586	40,28	●	.360	9,14	✓	-	C

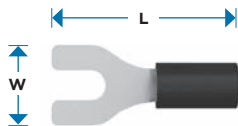
Ring Tongue Terminals (continued)

Wire Size		Material Thickness		Studsize/ Pin Length Wire Pin		Standard Part Number	Width (W)		Length (L)		Color	Max. Wire Insulation Dia.		Also available in ⁴		Remarks
AWG	mm ²	inch	mm	U.S.	mm		inch	mm	inch	mm		inch	mm	Tape & Reel	Small Pack	
8	6,64 - 10,50	.043	1,09	5/16	M8	52291	.587	14,91	1.696	43,08	●	.360	9,14	✓	-	C
				3/8		52291-1	.587	14,91	1.696	43,08	●	.360	9,14	✓	-	C
				1/2	M12	52262-1	.875	22,23	1.860	47,24	●	.330	8,38	-	-	A
6	10,5 - 16,8	.048	1,22	8	M4	52042-2	.500	12,70	1.869	47,47	●	.436	11,07	✓	-	C
				10		52265	.468	11,89	1.719	43,66	●	.436	11,07	✓	✓	B
				1/4	M6	52042-1	.500	12,70	1.869	47,47	●	.436	11,07	-	-	C
				5/16	M8	52264	.625	15,88	1.906	48,41	●	.450	11,43	✓	-	B
				3/8		52264-1	.625	15,88	1.906	48,41	●	.450	11,43	✓	-	B
				1/2	M12	52350	.815	20,70	1.851	47,02	●	.436	11,07	-	-	C
4	16,8 - 26,7	.051	1,30	10		52043-2	.546	13,87	1.948	49,48	●	.450	11,43	✓	-	B
				1/4	M6	52043-3	.546	13,87	1.948	49,48	●	.450	11,43	✓	-	B
				5/16	M8	52266	.679	17,25	2.014	51,16	●	.515	13,08	✓	-	B
				3/8		52266-4	.679	17,25	2.014	51,16	●	.450	11,43	✓	-	B
2	26,7 - 42,4	.060	1,52	1/4	M6	52267-1	.675	17,15	2.071	52,60	●	.560	14,22	-	-	B
				1/4	M6	52267	.675	17,15	2.071	52,60	●	.632	16,05	-	-	B
				5/16	M8	52044-1	.711	18,06	2.089	53,06	●	.632	16,05	-	-	B
				3/8		52044-2	.711	18,06	2.089	53,06	●	.632	16,05	-	-	B



Multiple Studsize Ring Tongue

22-16	0,26 - 1,65	.033	0,84	6-10	M3.5 - M5	54774-1	.325	8,26	.969	24,61	●	.125	3,18	✓	-	
16-14	1,04 - 2,62	.033	0,84	6-10	M3.5 - M5	54775-1	.325	8,26	.969	24,61	●	.145	3,68	✓	-	



Spades: Standard Spade

22-16	0,26 - 1,65	.031	0,79	4	M2.5	165004	.218	5,54	.784	19,91	●	.160	4,06	-	✓	
		.033	0,84	6	M3.5	327043	.250	6,35	.858	21,79	●	.140	3,56	✓	✓	
				6	M3.5	320665	.297	7,54	.765	19,43	●	.140	3,56	✓	✓	
				8	M4	34155	.375	9,53	.920	23,37	●	.140	3,56	✓	✓	
		.031	0,80	8	M4	165008	.280	7,11	.831	21,11	●	.142	3,61	✓	✓	
		.033	0,84	10		34156	.375	9,53	.920	23,37	●	.140	3,56	✓	✓	
16-14	1,04 - 2,62	.033	0,84	6	M3.5	322994	.297	7,54	.765	19,43	●	.145	3,68	✓	✓	
				6	M3.5	34165	.385	9,78	.920	23,37	●	.170	4,32	-	✓	
				8	M4	326741	.297	7,54	.765	19,43	●	.170	4,32	✓	✓	
				8	M4	34166	.385	9,78	.920	23,37	●	.170	4,32	✓	✓	
		.031	0,81	8	M4	165012	.250	6,40	.788	20,00	●	.195	4,95	✓	✓	
		.033	0,84	10		34167	.385	9,78	.920	23,37	●	.170	4,32	✓	✓	
		.035	0,90		M5	160171	.385	9,78	.933	23,70	●	.193	4,90	-	✓	
12-10	2,62 - 6,64	.039	1,00		M4.5	165015	.315	8,00	1.238	31,45	●	.252	6,40	-	✓	
		.040	1,02	10		34176	.406	10,31	1.095	27,81	●	.230	5,84	✓	✓	
		.039	1,00		M5	165017	.530	13,46	1.307	33,19	●	.252	6,40	-	✓	
		.039	1,00	1/4	M6	165019	.530	13,46	1.307	33,19	●	.252	6,40	-	✓	



Spades: Flanged Spade

Wire Size		Material Thickness		Studsize/ Pin Length Wire Pin		Standard Part Number	Width (W)		Length (L)		Color	Max. Wire Insulation Dia.		Also available in ⁴		Remarks
AWG	mm ²	inch	mm	U.S.	mm		inch	mm	inch	mm		inch	mm	Tape & Reel	Small Pack	
22-16	0,26 - 1,65	.033	0,84	6	M3.5	322249	.296	7,52	.749	19,02	●	.140	3,56	✓	✓	
				8	M4	324169	.416	10,57	.842	21,39	●	.140	3,56	✓	✓	
				10		328516	.296	7,52	.749	19,02	●	.140	3,56	✓	✓	
16-14	1,04 - 2,62	.033	0,84	6	M3.5	324165	.294	7,47	.749	19,02	●	.170	4,32	✓	✓	
				8	M4	53874-1	.284	7,21	.749	19,02	●	.170	4,32	✓	-	
				8	M4	160212	.294	7,47	.749	19,02	●	.173	4,39	-	-	
		.031	0,79		M5	160213	.294	7,47	.749	19,02	●	.173	4,39	-	✓	
12-10	2,62 - 6,64	.042	1,07	6	M3.5	324581	.296	7,52	1.017	25,83	●	.230	5,84	✓	✓	
				8	M4	324172	.416	10,57	1.017	25,83	●	.230	5,84	✓	✓	
				10		52856	.416	10,57	1.017	25,83	●	.250	6,35	✓	✓	



Short Spring Spade

22-16	0,26 - 1,65	.033	0,84	4	M2.5	52947	.203	5,16	.811	20,60	●	.140	3,56	✓	✓	2
				5	M3	52948	.250	6,35	.811	20,60	●	.140	3,56	✓	✓	2
				6	M3.5	52949	.250	6,35	.811	20,60	●	.140	3,56	✓	✓	2
				6	M3.5	53240-1	.234	5,94	.811	20,60	●	.140	3,56	✓	-	2
				8	M4	53241-1	.244	6,20	.872	22,15	●	.140	3,56	✓	-	2
				10		53242-1	.294	7,47	.920	23,37	●	.140	3,56	✓	-	2
16-14	1,04 - 2,62	.033	0,84	6	M3.5	52955	.250	6,35	.811	20,60	●	.170	4,32	✓	✓	2
				8	M4	53244-1	.244	6,20	.872	22,15	●	.170	4,32	✓	✓	2
				10		52957	.406	10,31	.920	23,37	●	.170	4,32	✓	✓	2
12-10	2,62 - 6,64	.042	1,07	6	M3.5	52961	.250	6,35	.959	24,36	●	.200	5,08	✓	✓	2
				8	M4	53247-1	.312	7,92	1.052	26,72	●	.250	6,35	✓	✓	2
				10		52963-2	.406	10,31	1.100	27,94	●	.250	6,35	✓	-	2

Long Spring Spade

22-16	0,26 - 1,65	.033	0,84	6	M3.5	52453	.250		.945	24,00	●	.140	3,56	✓	✓	2
				8	M4	52454	.281		.991	25,17	●	.140	3,56	✓	✓	2
				10		52455	.343		1.017	25,83	●	.140	3,56	✓	✓	2
16-14	1,04 - 2,62	.033	0,84	6	M3.5	52463	.250		.945	24,00	●	.170	4,32	✓	-	2
				8	M4	52464	.281		.991	25,17	●	.170	4,32	✓	✓	2
				10		52465	.343		1.017	25,83	●	.170	4,32	✓	-	2
12-10	2,62 - 6,64	.042	1,07	8	M4	52474	.375		1.174	29,82	●	.200	5,08	✓	-	2
				10		52475	.375		1.219	30,96	●	.200	5,08	✓	-	2



Butt Splices

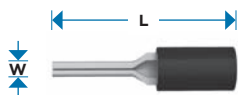
26-22	0,12 - 0,41	n.a.	n.a.			321026	n.a.	.620	15,75		●	.080	2,03	✓	✓	
22-16	0,26 - 1,65	n.a.	n.a.			34067	n.a.	1.065	27,05		●	.120	3,05	✓	✓	
		n.a.	n.a.			34070	n.a.	1.076	27,33		●	.140	3,56	✓	✓	
		n.a.	n.a.			34243	n.a.	1.065	27,05		●	.170	4,32	✓	✓	

Butt Splices (continued)

Wire Size		Material Thickness		Studsize/ Pin Length Wire Pin		Standard Part Number	Width (W)		Length (L)		Color	Max. Wire Insulation Dia.		Also available in ⁴		Remarks
AWG	mm ²	inch	mm	U.S.	mm		inch	mm	inch	mm		inch	mm	Tape & Reel	Small Pack	
22-16	0,26 - 1,65	n.a.		n.a.		34203	n.a.		1.065	27,05	●	.083 x .171	2,11 x 4,34	-	-	1
16-14	1,04 - 2,62	n.a.		n.a.		34068	n.a.		1.065	27,05	●	.140	3,56	✓	✓	
		n.a.		n.a.		34071	n.a.		1.065	27,05	●	.170	4,32	✓	✓	
		n.a.		n.a.		35244	n.a.		1.065	27,05	●	.215	5,46	✓	✓	
		n.a.		n.a.		34204	n.a.		1.065	27,05	●	.135 x .245	3,43 x 6,22	✓	✓	1
12-10	2,62 - 6,64	n.a.		n.a.		34069	n.a.		1.160	29,46	●	.200	5,08	-	-	
		n.a.		n.a.		34072	n.a.		1.160	29,46	●	.230	5,84	✓	✓	
		n.a.		n.a.		34945	n.a.		1.160	29,46	●	.250	6,35	-	-	

Parallel Splices

22-16	0,26 - 1,65	n.a.		n.a.		34131	n.a.		.760	19,30	●	.120	3,05	-	-	
		n.a.		n.a.		34132	n.a.		.760	19,30	●	.140	3,56	-	✓	
16-14	1,04 - 2,62	n.a.		n.a.		34133	n.a.		.760	19,30	●	.140	3,56	-	-	
		n.a.		n.a.		34134	n.a.		.760	19,30	●	.170	4,32	-	✓	
12-10	2,62 - 6,64	n.a.		n.a.		34135	n.a.		.843	21,41	●	.200	5,08	-	-	
		n.a.		n.a.		34136	n.a.		.870	22,10	●	.230	5,84	-	✓	



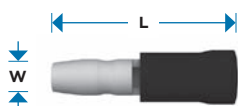
Wire Pins (formed)

22-16	0,26 - 1,65	n.a.	.264	6,71	165143	.071	1,80	.807	20,50	●	.146	3,71	-	✓	
			.390	9,91	165167	.071	1,80	.937	23,80	●	.146	3,71	-	✓	
16-14	1,04 - 2,62	n.a.	.264	6,71	165075	.071	1,80	.815	20,70	●	.193	4,90	-	✓	
			.390	9,91	165171	.071	1,80	.933	23,70	●	.193	4,90	-	✓	
12-10	2,62 - 6,64	n.a.	.390	9,91	165085	.102	2,60	1.150	29,21	●	.252	6,40	-	✓	



Wire Pins (flat)

22-16	0,26 - 1,65	n.a.	.319	8,10	131443	.116	2,95	.906	23,00	●	.142	3,60	-	✓	
16-14	1,04 - 2,62	n.a.	.319	8,10	131444	.116	2,95	.906	23,00	●	.193	4,90	-	✓	
12-10	2,62 - 6,64	n.a.	.331	8,40	131445	.165	4,20	1.157	29,40	●	.252	6,40	-	✓	



Shur Plugs

16-14	1,04 - 2,62	pin	n.a.		324227	.156	3,96	.800	20,32	●	.193	4,90	✓	✓	3
		pin	n.a.		324228	.180	4,57	.773	19,63	●	.193	4,90	-	✓	3

Remarks

A, B, C code referring to shape of terminal, see on top of Ring Tongue Terminals chapter (page 2)

1 Oval expansion

2 Brass per ASTM B-36

3 Receptacles only available in PIDG version. Partnumbers 165399-1 and 165429-1 are preferred

4 ✓ Standard Part Number also available in Tape & Reel and/or Small Pack
- Standard Part Number is not available in Tape & Reel and/or Small Pack
For all applicable part numbers see specification 404-32020 at te.com

For all remarks and additional information see Customer Drawing on www.te.com

FREQUENTLY ASKED QUESTIONS

Can wires be combined in PLASTI-GRIP terminals?

Yes they can as long total CMA (Circular MIL Area) and insulation diameter fall within specification.

Are TE PLASTI-GRIP terminals MIL specified?

No, PLASTI-GRIP terminals are not Military qualified; Most PIDG and SOLISTRAND terminals are qualified to SAE AS7928.

What to choose if you need higher temperature?

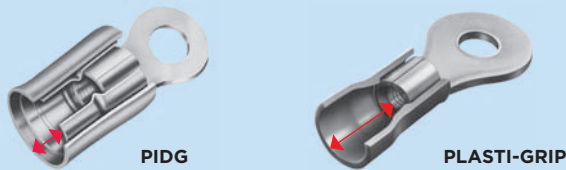
Use STRATO-THERM terminals (catalog 82011).

Why can PLASTI-GRIP terminals handle 600 V and PIDG terminals just 300 V?

Because there's no additional metallic sleeve to support the crimp (see picture).

Why is there no crimpheight given for PLASTI-GRIP terminals?

It is the geometry of the TE crimping tools which guarantees the perfect crimp on PLASTI-GRIP terminals.



TOOLING

Commercial tooling

Most terminals (AWG22-10) can be terminated with handtool 58433-3 (58423-1 + 354940-1) or 169400 + 169404.

For Butt-splices only 58433-3 and for Parallel-splices no commercial tooling available.

For wire sizes 8-2 no commercial tooling available.

Premium tooling

AWG 22-16	47386 or 59824-1
AWG 16-14	47387 or 59824-1
AWG 12-10	59239-4 or 59824-1
AWG 8	59974-1 + 47820 or 59974-1 + 48752-1
AWG 6	59974-1 + 47821 or 59974-1 + 48753-1
AWG 4	59974-1 + 47822 or 59974-1 + 48754-1
AWG 2	59974-1 + 47823 or 59974-1 + 48755-1

Butt Splices:

AWG 26-22	46121
AWG 22-16	45160
AWG 16-14	45575-1
AWG 12-10	59489

Parallel Splices:

AWG 22-16	45449
AWG 16-14	45450
AWG 12-10	59270

Service tool

AWG 22-10	169060-8
-----------	----------

<http://tooling.te.com/europe/handtools.asp>

<http://www.te.com>

FOR MORE INFORMATION

TE Technical Support Center

Internet:	te.com/help
USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico	+52 (0) 55-1106-0800
Latin/S. America:	+54 (0) 11-4733-2200
Germany:	+49 (0) 6251-133-1999
UK:	+44 (0) 800-267666
France:	+33 (0) 1-3420-8686
Netherlands:	+31 (0) 73-6246-999
China:	+86 (0) 400-820-6015

Part numbers in this brochure are RoHS Compliant*, unless marked otherwise.

*as defined www.te.com/leadfree

te.com

© 2012 Tyco Electronics Corporation, a TE Connectivity Ltd. Company. All Rights Reserved.

6-1773465-8 CIS WR 08/2013

TE Connectivity and TE connectivity (logo) are trademarks. Other logos, product and/or company names might be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information in this document, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this document are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9