# Bourns<sup>®</sup> Outside Plant Products

**Product Overview Guide** 

Revision 4



BOURNS

#### **Telecom Protection**

The worldwide telecommunications industry has come to rely on Bourns<sup>\*</sup> surge protection, connection and demarcation devices to protect personnel and sensitive communications equipment from damaging electrical surges. With the addition of plug-in protectors and connection products through two acquisitions, we now offer a full, integrated line of surge protection and connection products for Telco central office, outside plant and customer premises.

Bourns has a very large selection of plug-in modules (protected or continuity only) to meet your every need. The protection modules are available in Solid State, Gas Discharge Tube and Hybrid technologies in overvoltage protection only or overvoltage with sneak-current protection.

The new connection products are compact units for 5-pin and 4-pin plug-in protection modules as well as terminal blocks. These products provide a wide variety of standard and custom solutions for current and legacy central office and remote terminals.

The Network Interface Devices (NIDs) which provide subscriber test point, station protection, coaxial protection and DSL POTS Splitters in various combinations, are available in counts from one to onehundred lines. The units are modular so lines may be added as needed, eliminating investment in idle plant resources. All units are UL Listed and manufactured to RUS and Telcordia requirements. The Bourns<sup>®</sup> line of protectors, connection products, NIDs and POTS splitters combine to provide the telecom industry with an integrated solution. In addition to unique products, quality is engineered into all aspects of the manufacturing process. The patented Multi-Stage Protector (MSP<sup>®</sup>) devices are available in 5-pins, station protector footprints, the

Bourns is unique in the industry in that we design and manufacture our own GDT, thyristor, PPTC and TBU<sup>™</sup> components for use in our protection modules.

Integrated Protection Assembly (IPA) series and Insulation Displacement Connector (IDC) series of station protectors that make NID installation virtually tool-less. Recent innovations include a full offering of POTS splitters;. Bourns<sup>®</sup> 361xA2 series is optimized for video over ADSL2+ or VDSL2. We also offer a Balance/Unbalance adapter for "no new wires" coax to DSL conversion and 3617 series BalUn/Splitter combination units. These developments are part of our commitment to provide value to our customers with quality engineered surge protection and associated products. Responsiveness to the voice of our customers is the cornerstone of our business philosophy at Bourns. Our mission is to provide the best products to meet the requirements of your application.



#### The Bourns<sup>®</sup> MSP<sup>®</sup> Protector Advantage

Multi-Stage Protection

**The Best of Two Technologies** - Bourns<sup>®</sup> MSP<sup>®</sup> 5-pins and station protectors provide superior protection by combining the high energy handling of a threeelectrode Gas Discharge Tube with the quick response of solid-state Metal Oxide Varistors (MOVs).

Solid-state devices react quickly to electrical surges but generally cannot handle high energy surges. Multi-Stage Protectors limit the incoming surge with the MOVs as the GDT activates to handle the bulk of the energy by directing it safely to ground, away from personnel and equipment.

Low Capacitance - The low capacitance of Bourns® MSP<sup>®</sup> products makes them ideal for broadband applications such as ADSL2+ and VDSL2. Our new PPTCR-based 5-pins with overcurrent protection offer industry-leading performance with low resistance and capacitance.

No Air Back Up Gap - Bourns<sup>®</sup> MSP<sup>®</sup> devices do not have an air Back Up Gap (BUG), thereby eliminating BUGrelated contamination within the protector as a potential cause of faults on the line.



Switch-Grade Fail-Short - Unlike technologies that require a solder pellet to melt or an insulating material to burn away, Bourns® MSP® units feature a Switch-Grade Fail-Short, which activates in response to an extended overvoltage to provide exceptional fire protection.

Proprietary Low Work Function GDT Coating - This feature ensures low heating and high efficiency in handling surges.

Long Life, Proven Reliability - Bourns<sup>®</sup> MSP<sup>®</sup> products have a proven record of reliability with millions of protectors deployed worldwide.

## 5-Pin and Station Protectors with Transient Blocking Unit (TBU<sup>™</sup>) Technology

ourns<sup>®</sup> 2377 and 2470 MSP<sup>®</sup>/TBU<sup>™</sup> series are a D new generation of surge protector designed to be the best choice for protection of high-speed network data circuits. MSP<sup>®</sup>/TBU<sup>™</sup> series protectors integrate four advanced technologies: Our proprietary advanced balanced TRIGARD® GDT, precision matched metal oxide varistors (MOV), a patented switch-grade Fail-Short mechanism, and our patented TBU<sup>™</sup> device that protects the circuit by rapidly switching to a blocking state. These technologies are combined to provide robust

overvoltage and fast, resettable sneak-current protection with extremely low surge let-through and very low loss characteristics making it the ultimate choice for protection of sensitive, high speed communication lines.



#### **Station and Central Office Protectors**

UL Listed per 497

**B** ourns<sup>®</sup> station and central office protectors are designed to provide primary surge protection of copper-twisted pair POTS and broadband circuits. They utilize industry standard footprints and meet or exceed industry performance requirements.

All station protectors feature sealed bodies of UL approved material. The broad product offering ranges from the economical units to the maximum duty DigiGuard<sup>®</sup> protectors.

5-pin surge protectors are used in Telco central offices and remote terminals. Bourns produces a full range of GDT, solid state and hybrid technologies, with models for both overvoltage and overvoltage / overcurrent (sneak-current) protection. Bourns<sup>®</sup> MSP<sup>®</sup> 5-pin surge protectors combine solid-state MOVs and gas discharge tubes to provide Multi-Stage Protection. Special balanced capacitance versions are available for VDSL2 and other balance-sensitive high-speed systems. Bourns<sup>®</sup> 2410 and 2420 series are analyzed to the latest requirements of GR-974-CORE and SBC SR-5165, "Generic Requirements for Broadband Surge Protectors" (Telcordia Test Report DA-1547). The new 2440 and 2430 series of 5-pin protectors offer this same superior protection with sneak-current protection utilizing PPTCR technology for greater reliability than heat coil type of protection.

The two recent acquistions of plug-protectors expands our offering to include a complete line of solid state (SS) 5-pin, 4-pin and 1-pin plug-in protectors. Versions for overvoltage (3-type) and overvoltage/ overcurrent (4-type) protector units are available. These units provide a rapid response to surge events and limit voltage overshoot. 4-type models are available with heat-coil and PTC elements for sneakcurrent protection.



#### **Special Application Modules** (**UL** Listed per 1893

**B** ourns offers a variety of special purpose plug-in modules for continuity, grounding and dummy plugs. We also offer S-50, 300, and 6-pin type

overvoltage protectors as well as S-76A heat coils to provide sneak-current protection for C-50 and C-52 mainframe connectors.



#### **POTS Splitters** UL Listed per 1893

**B** ourns<sup>®</sup> POTS splitters/filters simplify the deployment of DSL service at the subscriber premises. Compliant to applicable ANSI and ITU-T standards, the units accept the incoming DSL service, filter off the voice (POTS) channel and provide a connection for the data service (modem). Our **new ADSL2+ / VDSL2 models** are optimized for **video over ADSL2+ and VDSL2** applications and tolerate high ring trip currents. The 361xA2 series POTS splitters meet requirements for ADSL, ADSL2+, VDSL and VDSL2 services.

Models are available for ADSL, ADSL2+ and VDSL/VDSL2 systems, which fit Bourns' and other manufacturers' NIDs. The Bourns® POTS splitters 3610A2, and 3610A2-IDC are manufactured in the traditional binding post mounting style. Also available in a convenient snap-in footprint is the model 3611A2. It is compatible with the Bourns<sup>®</sup> 7043 series and other manufacturers' 7600 style enclosures. In addition, the 3612A2 IPA mounting style splitter is available for mounting in other manufacturers' 2003/2006 style NIDs. The Bourns<sup>®</sup> 366x series of binder equalization modules is also available in all three industry-standard footprints. The modules, also called attenuators, reduce crosstalk issues on lines where the customer is located in close proximity to the central office.

The 3670-01 BalUn (Balanced-Unbalanced) impedance matching module is optimized to extend the reach of high speed services with high efficiency conversion of twisted pair to coaxial transmission for HPNA and Triple Play applications. Our new 3670-01 BalUn is designed to adapt twisted pair to coax for xDSL systems. The 3617-01 and 3617-02 combine the circuitry of the 3610A2 and the 3670-01.



#### Connection UL Listed per 497

**B** ourns now manufactures a complete line of connector blocks to be used with industrystandard 5-pin protectors. These compact units provided generous working space between connectors and are available in 100 pair counts. Models can be ordered with tin or gold plated fields to match the 5-pin module plating. Bourns offers stubless and stubbed units with standard stub lengths of 30, 50,

80 and 100 feet in 22 or 24 AWG. Grounding options include frame or isolated ground. There are six connector block families, starting with the 303 style to the most compact 391 family, including the 310, 377, 388 and 390 connector blocks.

Many accessories are available for the 5-pin connector block families.



#### **Protected Connector Comparison**

Connector Family	Accepts Module <sup>†</sup>	Dimensions in inches (stubless, H x W x D)	Mounting	Grounding	Termination - Wire Wrap / IDC	Contact Material	UL	Telcordia Audit	Data Sheet
CG 391	5-Pin	9.5 x 5 x 9.5	Right* / Left*	Frame / Isolated	WW	Gold	Y	Yes	CG-391 Series
C 391	5-Pin	9.5 x 5 x 9.5	Right* / Left*	Frame / Isolated	WW	Tin	Y	-	CG-391 Series
CG 390	5-Pin	11 x 5 x 9	Left	Frame / Independent / Isolated	WW	Gold	Y	Yes	CG-390 Series
C 390	5-Pin	11 x 5 x 9	Left	Frame / Independent / Isolated	WW	Tin	Y	-	CG-390 Series
C 388	5-Pin	11 x 3.6 x 6.6	Left	Frame / Independent / Isolated	WW	Tin	Y	-	C-388 Series
C 377	5-Pin	11 x 3.6 x 6.6	Left	Frame / Independent / Isolated	WW	Tin	Y	-	C-377 Series
CG 310	5-Pin	15 x 5.5 x 5	Left	Independent / Isolated	WW	Gold	Y	Yes	CG-310 Series
C 310	5-Pin	15 x 5.5 x 5	Left	Independent / Isolated	WW	Tin	Y	-	CG-310 Series
CG 303	5-Pin	19.2 x 5.5 x 5	Left	Independent	WW	Gold	Y	Yes	CG-303 Series
C 303	5-Pin	19.2 x 5.5 x 5	Left	Independent	WW	Tin	Y	-	CG-303 Series
MPC	4-Pin	8.5 x 4.2 x 8.5	Left	Frame	IDC, W W	Tin	Y	-	MPC Series

\*Available in Straight or Angle mount.

 $^{\dagger}$  All models available with protectors factory installed. Contact Bourns for ordering information.

All models are available stubless or stubbed with either 22 or 24 gauge cable.

Cable stubs can be directed up or down.

*Standard stub lengths are 30', 50', 80' & 100'.* 

Other lengths are available as custom models.

#### **Connectors with 4-pin Module Protectors UL Listed per 1893**

The MPC series of Mainframe Connector utilizes the QMP 4-pin plug-in protectors. The front-facing jumper and test fields provide convenient working space for these compact units. 4-inch inter-vertical spacing and a slide access protector field reduce maintenance time. All models are 100 pair count with stubless and stubbed units in 22 or 24 AWG with standard stub lengths of 30, 50, 80 and 100 feet.

MPC accessories are available.



#### **4-Pin Surge Protectors UL** Listed per 1893

The compact QMP 4-pin modules are available in overvoltage and overvoltage with overcurrent (sneak-current) protection for the MPC connectors. Gas Discharge Tube (GDT) 4-pins are offered with and without heat coil. Solid state (SS) versions are available with and without PTTC.



#### **Terminal Blocks** (**UL** Listed per 1893

 $\mathbf{B}$  ourns offers three terminal block families: the 139, 130 and QBB that can be provided for field termination or pre-connectorized for quicker overall installation.

#### 139 Terminal Blocks

The Versablock<sup>®</sup> Rotating Terminal Block Series 139 is a versatile connection point for trunk modules, tie pairs, transmission channels banks and other applications. The terminal field rotates 180° and locks into place for convenient access to equipment terminations. It features equipment side terminations with optional connectors, multiple pin patterns and wiring configurations. Bifurcated, and single wire wrap and quick-clip insulation displacement connectors (IDC) are available. The terminals can be installed vertically or horizontally. Block density is up to 256 pairs.

#### 130 and QBB Terminal Blocks

The Versablock<sup>\*</sup> Rotating Terminal Block Series 130 and QBB are families of rotating terminal blocks that offer termination configurations for decimal and octal pair-count applications. Can be used for CO and PABX frames or any application where a compact terminal block is required. The terminal field rotates 180° and locks into place for convenient access to equipment terminations. Maximum pair count is 128. The Series 130 utilizes bifurcated quick-clip IDCs.



# **OSP Connection**

Protector Panels

**B** ourns offers 5-pin protector module connector blocks of various pair count sizes. The blocks can be ordered as standalone components or as part of a custom design that is mounted on a wall or rack within a cabinet or building. The custom designs can also be pre-wired to the blocks and terminated with a connector of your choice. These custom designs are referred to as protector panels. These panels are designed to provide connection and protection for cabinets and multi-dwelling unit (MDU) applications. The modular protector panels are Cat 5 compatible and can be easily sized to a variety of port counts for broadband applications. A variety of 5-pin protection modules are available. A large variety of module capacities are available by combining various standard 10, 20, 25 50 and 100 pair 5-pin protector module connector blocks.

#### **7004 and 7090 Series NIDs** UL Listed per 497 | RUS Approved

he 7004 joins the Bourns® 7090 series industry-leading NID products. The four line 7004 series features convenient customer side working space, added wire management features, an extra subscriber bridge location and improved cosmetics. The 7004 and 7090 series are very versatile, rugged and are ideal for single or multiline residential / commercial installations. Sealed switching subscriber jacks which simplify the test point are available with four lugs for inside wire connections. Your company's logo can be embossed on the cover. Please contact Bourns' sales department for more information.

	Dimensions in inches									
	Model	Pair	Height	Width	Depth					
	7004	4	7.5	7.7	2.7					
	7090	6	9	8.5	2.7					
the second	7090-01	-DF		7004-01-WS-	P1					
85122-T4 85122	2 2 85039-T	85	122-T-IDC	85	8512 122-IDC	22-В				

		/	1004 / 7090 - 08 - 7	
Number of	Iwisted Pair Line	es — — — — — — — — — — — — — — — — — — —		
1 - One 2 - Two	3 - Three 4 - Four	5 - Five (7090) 6 - Six (7090)	)	
Station Pro	tector Options –			
D <sup>1</sup> - 455HS-	-MSP (2377-45-I	HS) Voice / DSL / Da	ata (UL, cUL)	
U <sup>3</sup> - 455HS-	-MSP (2377-45-I	HS-IDC) Voice/DSL/	Data (UL,cUL)	
Z <sup>1</sup> - 455HS-	BC* (2377-45-B	C) Balance-sensitiv	ve DSL (UL, cUL)	
W <sup>3</sup> - 455BC-	-MSP* (2377-45-	BC-IDC) Balance-Ser	nsitive DSL (UL,cUL)	
E² - 155HS-	MSP (2378-35-H	HS) Voice / DSL / Da	ata (UL, cUL)	
Y² - 155HS-	·BC* (2378-35-B	C) Balance-sensitiv	ve DSL (UL, cUL)	
K - 356G (2	377-35-G) Balar	nced GDT, no Back-I	Up-Gap (UL,cUL)	
R³ - 356G (2	377-35-G-IDC) Ba	alanced GDT, no Bacl	k-Up-Gap (UL,cUL)	
B - 125EW	(2374-01) Dual (	Gas Tube (UL, cUL, T	Telcordia analyzed)	
C - 125EW-	R (2375-01) Dua	al Gas Tube (UL, cUI	L, RUS)	
Note $1 = Digi$ . Note $2 = Digi$ . Note $3 = Insu$	Guard® - 356 size, R Guard® II - 125 size, lation Displacement	US Max Duty RUS Heavy Duty Connectors (IDCs)		
Special Opt	ions ———			
G - Security	Screw in Telco (	Cover (not available	e on 7004)	
H - Security	/ Screw in Securi	ty Plate		
S - Sealed S	Switching Jack w	ı/ IDC (85122-T-IDC	])	
F - Sealed S	Switching Jack 4	-post (85122-T4) Si	upplied with DSL	
B - Expansi	on Bridge w/ Bir	nding Posts (85122	-B)	
I - IDC Type	Expansion Bridg	ge – 4 Jacks (85122-	-IDC)	
5 - Expansi	on Bridge Slot (7	7004)		
0 - No Opti	ons (ships w/sta	ndard 85122 Switc	h Jack)	
DSL Option	s ———			
P1 1) 361	10A2	P2 2)	3610A2	
P1-I 1) 361	IOA2-IDC	P2-I 2)	3610A2-IDC	
B1 1) 367	70-01			

#### **7004C and 7091 Series NIDs** (**UL** Listed per 497

he 7091 series of NIDs combines protection options for twisted pair and coaxial cable into one multi-purpose enclosure. Up to four twisted pair lines or two DSL and two twisted pairs can be combined with the 1740 series coax protectors. The 7004C series offers similar features with two less twisted pair connections. Sealed switching subscriber jacks and custom logos are optional.

Dimensions in inches								
Model Pair Height Width Depth								
7004C	2	7.5	7.7	2.7				
7091	4	9	8.5	2.7				



#### **Telecom Protection Application Guide** Meets Meets **UL** Listed Meets Name Part Number Technology Telcordia Telcordia **Application Notes RUS PE-80** per 497 974 1361 **DigiGuard**<sup>®</sup> 2377-45-HS-IDC 3 Element GDT/SS Multi-Stage Yes Yes Yes Yes Maximum Performance, Broadband 155HS 2378-35-HS 3 Element GDT/SS Multi-Stage Yes Yes Heavy Duty, Broadband Yes Yes IPA Yes Yes Heavy Duty, Broadband 2360-35 Series 3 Element GDT/SS Multi-Stage Yes Yes 2377-01 3 Element Gas Discharge Tube N/A Yes Heavy Duty 356M Yes N/A 2374-01/ **Dual 2 Element Gas** 125EW/EWR Yes N/A Yes Yes Heavy Duty 2375-01 **Discharge Tube** 356G 2377-35-G 3 Element Gas Discharge Tube Yes Yes Yes Yes Heavy Duty, Broadband 356G 2377-35-G-IDC 3 Element Gas Discharge Tube Yes Yes Yes Heavy Duty, Broadband Yes 2022-60-A / Well Type 2 Element Gas Discharge Tube N/A Yes Yes Heavy Duty Yes 2022-84-A















2360-35-MP

2377-45-HS

2375-01 (125EW-R)

EW-R)

2378-35-HS

2377-45-HS-IDC

2377-35-G-IDC

2022-60-A / 2022-84-A

### **Bourns® DSL/NID Products Application Guide**

The charts below show the interoperability of Bourns<sup>®</sup> DSL products with our own NID line as well as other NID boxes.

The 3610A2 and 3660 models can fit into any NID that supports a 355/356 type station protector.

Bourns <sup>®</sup> NID Product Line									
DSL Product	Product Description 7004 7032 7040 7043 7070 7090 7091								
	361X								
3610A2/3610A2-IDC	ADSL/ADSL2+/	Х	Х	Х		Х	Х	Х	Х
3611A2						Х			
3612A2/3612	VDSL2 I OIS Splittel	Fits 2003/2006 style NIDs							
3617-01	BalUn / Splitter Combination Adapter	Х	Х	Х		Х	Х	Х	Х
3617-02		Х	Х	Х		Х	Х	Х	Х
3670-01	BalUn Coax Adapter	Х	Х	Х		Х	Х	Х	Х



#### **Compact Network Interface Devices**

(IL Listed per 497 | RUS Approved

he 708X NID series is a compact two-line unit. All industry standard station protectors fit these units. Measuring less than 7 " x 4 " x 2 ", the 708X series is designed to fit a variety of flush-mounted utility boxes. These products can be ordered without the exterior cover for use indoors.

Dimensions in inches								
Model Pair Height Width Depth								
708x	2	6.6	3.5	2				



**Protection Assemblies** 

**B** ourns' surge protection assemblies for the premises provide binding post, ground point and surge protection using 1/2 x 20 " Gas Discharge Tube (GDT) well protectors. Outdoor models offer secure and weather resistant enclosures for Telco service for residential or commercial installations. These units feature grommets for convenient cable access and generous working space for wire management. These mature products offer good maintainability, high insulation resistance, low moisture absorption and excellent transmission quality.



# Higher Line Count NIDS UL Listed per 497 | RUS Approved

The 7032 NID series includes units with maximum counts from 6 to 100 lines. Termination, protection and demarcation are provided in five series of enclosures. Maximum counts of six, twelve, twenty-five, fifty and one-hundred twisted pair subscriber lines are available, and accommodate Bourns<sup>®</sup> 3610A ADSL and 3610A2 ADSL2+ POTS splitters. All enclosures are made from UL Listed materials.

Bourns<sup>®</sup> 7101 NIDs feature individual lockable modules for maximum security in locations such as apartment buildings. In addition to the standard closure, each module can be fitted with a padlock. They are available in maximum pair counts of six, twelve, twenty-five and fifty lines, sealed switching jacks are available for additional weather resistance and test point simplification. They also accept Bourns<sup>®</sup> 3610A and 3610A2 ADSL POTS splitters.

7032 Dimensions in inches								
Enclosure	Pair	Height	Width	Depth				
А	6	11	11	4				
В	12	17.5	11	5				
С	25	17	16	3				
D	50	36	20	4.5				
E	100	36	20	7				
F	25	18.5	17.5	5.5				

7101 Dimensions in inches								
Enclosure	Pair	Height	Width	Depth				
А	6	10	11	3				
В	12	18.5	11.5	3.5				
С	25	19	19	4.5				
D	50	32.5	17.5	3.5				





7101-25-ECO

#### **Building Entrance Terminals** *UL Listed per 1863*

he compact Bourns<sup>®</sup> 7040 station protection enclosure can accommodate protectors for one or two twisted pair subscriber lines or one twisted pair with DSL. The 7041 is similar to the 7040 series, but is modified to accept a station protector and a 1740 model coaxial cable protector. Bourns<sup>®</sup> 7070 series of station protector enclosures are available in five sizes with maximum counts from twelve to one-hundred lines. For applications that do not require a subscriber test point, these units save space by fitting more pairs per enclosure. The Bourns<sup>®</sup> 7009 family of empty enclosures can be adapted to a variety of customer-specific applications.



#### Accessories

**B** ourns<sup>®</sup> 80545-A, 80545-C, 80535 and 80534 conduit adapters provide alternatives to the standard grommets supplied in the 7005 and 709X NIDs. The 85122-T-IDC and 85122-B are IDC and binding post expansion bridges for multiplying the home run terminations on Bourns<sup>®</sup> NIDs. The 85122-T4 and the 85039-T are modified subscriber test bridges. The standard RJ11 plug is eliminated and an internal switch within the jack disconnects the premises wiring during test. A rubber cover is supplied with the jacks to provide maximum resistance. Environmental sealant promotes longer life and fewer trouble reports. Bourns also offers binding post and IDC style expansion bridges for increased home run capability and wiring flexibility.



### **Surge Protector Test Sets**

he 4010 general and 4020 station and 5-pin protector test sets are convenient handheld units for testing the clamping and DC breakdown voltage of surge protectors. They feature true slow-rise circuitry for precise voltage measurements.





#### Bourns<sup>®</sup> Outside Plant Products

Phone: 877-4BOURNS (877-426-8767) Fax: 951-781-5006 Web: www.bourns.com



"Bourns", "DigiGuard" and "MSP" are registered trademarks of Bourns, Inc. in the U.S. and other countries. "TBU" is a trademark of Bourns, Inc Copyright © 2010, Bourns, Inc. • Litho in USA • WAG • 08/10 • 2M/OSP1010





Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.З, офис 1107

#### 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.З, 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