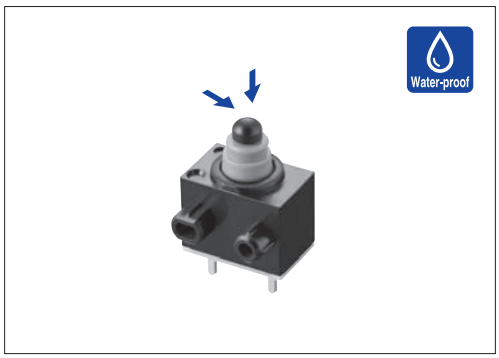
SPVQ8 Water-proof Type

Industry's smallest size, with main unit dimensions of 8.3×5.3×7mm



Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 12V DC / 50μA 5V DC
Contact resistance (Initial / After operating life)		500mΩ max. / 1Ω max. (Standard type) 500mΩ max. / 3Ω max. (Long-life type)
Operating force		1±0.5N
Operating life	Without load	300,000cycles (Standard type) 1,000,000cycles (Long-life type)
	With load	300,000cycles (Standard type) 1,000,000cycles (Long-life type)

Product Line

Poles	Positions	Circuit	Terminal type	Main body form	Minimum order unit (pcs) Japan	Minimum order unit (pcs) Export	Packing specifications type	Product No. Standard type	Product No. Long-life type	Drawing No.
1	1	N.O.	For PC board	Boss-both sides	1,755	7,020	A	**SPVQ810101**	**SPVQ830101**	1
			Angle	Boss-single side				**SPVQ810301**	**SPVQ830301**	2
				Without boss				**SPVQ810401**	**SPVQ830401**	3
			For PC board					**SPVQ810501**	**SPVQ830501**	4
				Boss-single side				**SPVQ810601**	**SPVQ830601**	5
			For Lead					**SPVQ810703**	**SPVQ830701**	6
				Boss-both sides				**SPVQ810801**	**SPVQ830801**	7
			Press fit	Boss-single side				**SPVQ811004**	**SPVQ831001**	8
		N.C.	For PC board	Boss-both sides				**SPVQ820101**	—	1
			Angle	Boss-single side				**SPVQ820301**	—	9
				Without boss				**SPVQ820401**	—	3
			For PC board					**SPVQ820501**	—	4
				Boss-single side				**SPVQ820601**	—	10
			For Lead					**SPVQ820704**	—	11
				Boss-both sides				**SPVQ820801**	—	7
			Press fit	Boss-single side				**SPVQ821004**	—	12
		N.O.	With wire (Downwards)	Boss-single side	400	1,600	B	**SPVQ850100**※	—	13
			With wire (Downwards)	Boss-both sides				**SPVQ850200**※	—	14
			With wire (Left side)	Boss-single side				**SPVQ850300**※	—	15
			With wire (from side)	Boss-both sides				**SPVQ850500**※	—	16
		N.C.	With wire (Downwards)	Boss-single side				**SPVQ860100**※	—	17
			With wire (Downwards)	Boss-both sides				**SPVQ860200**※	—	14
			With wire (Left side)	Boss-single side				**SPVQ860300**※	—	18
			With wire (from side)	Boss-both sides				**SPVQ860500**※	—	16

Notes

1. ※ Products with a wire will be supplied as follows.
   ·Unless specified, the length of the lead wire is 250mm. Color is either red or black.
   Please consult us for length modification.
   ·Please specify circuits (N.O. or N.C.) for wired (side) types. Unless specified, the circuit will apply N.O.
   ·Product with wire will be build-to-order.
2. This unit cannot be used in water (IP67 rating, except for terminal).

Packing Specifications

Tray

Packing specifications type	Number of packages (pcs.) 1 case /Japan	Number of packages (pcs.) 1 case /export packing	Export package measurements (mm)
A	1,755	7,020	540×360×270

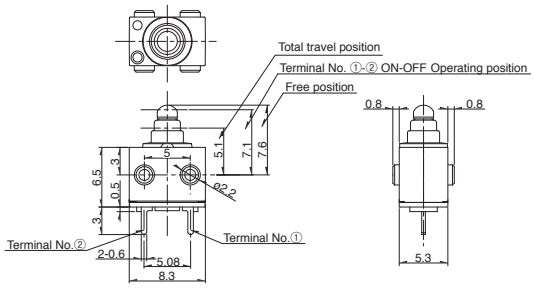
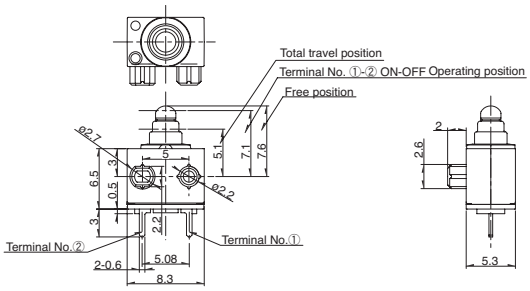
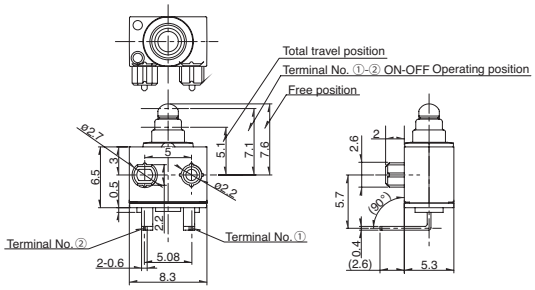
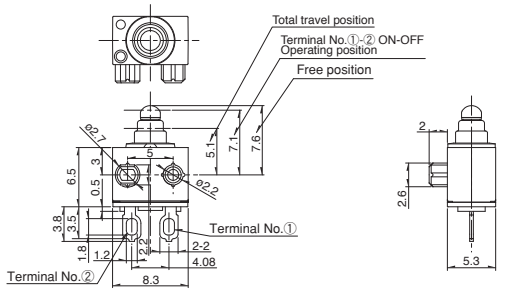
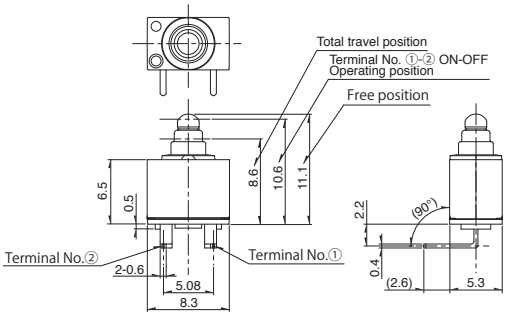
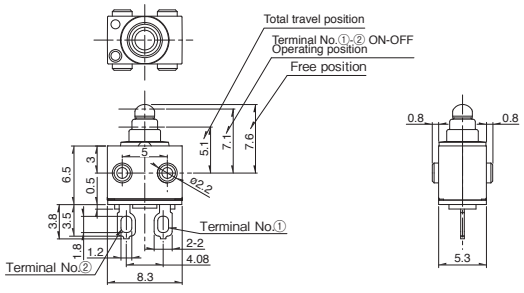
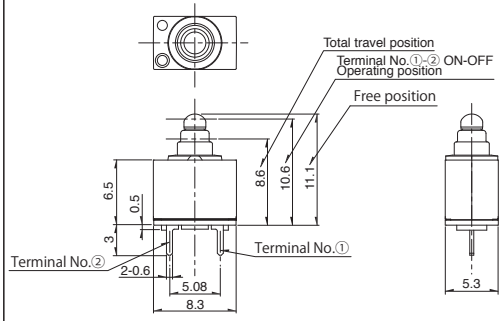
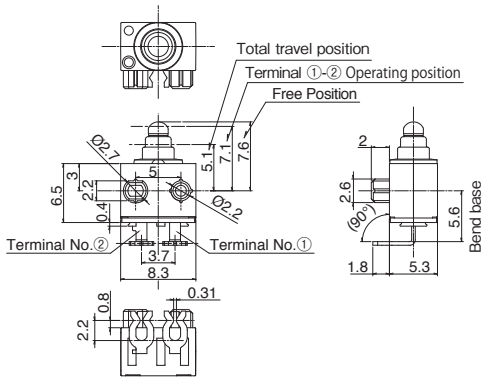
Bulk

Packing specifications type	Number of packages (pcs.) 1 case /Japan	Number of packages (pcs.) 1 case /export packing	Export package measurements (mm)
B	400	1,600	555×375×223

Refer to P.73 for soldering conditions.

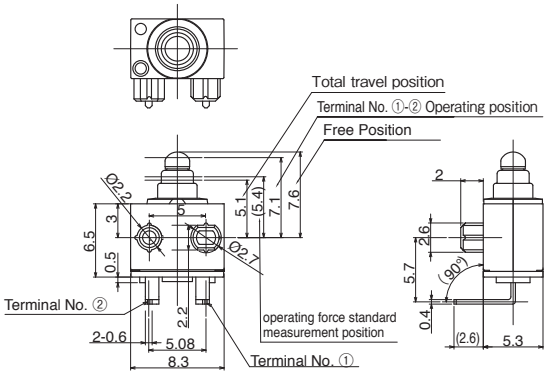
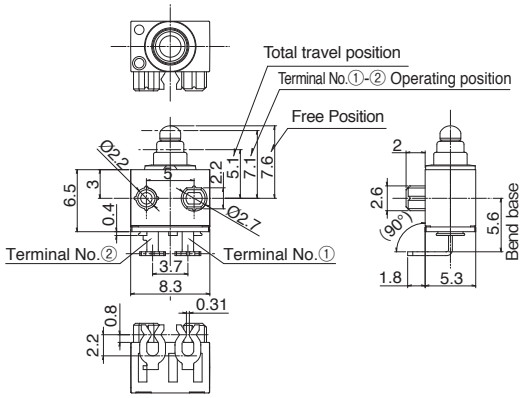
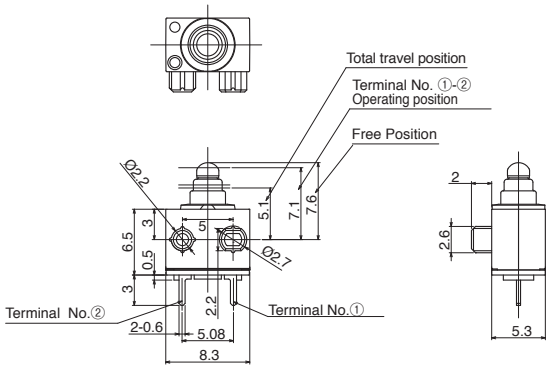
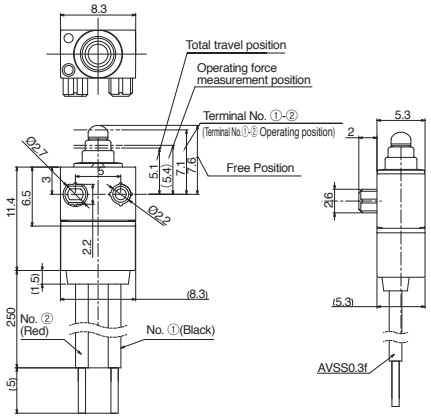
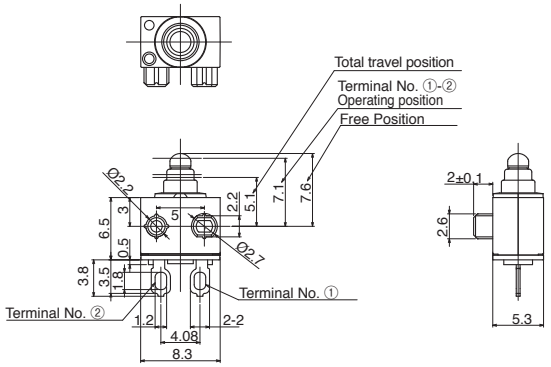
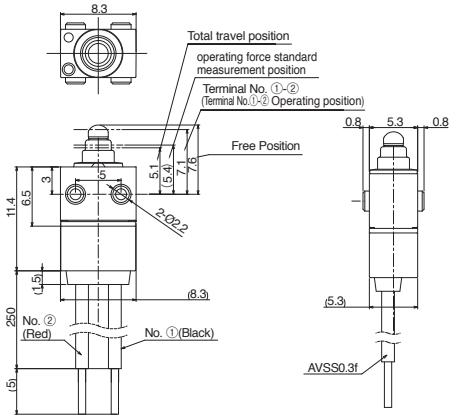
Dimensions

Unit:mm

No.	Style	No.	Style
1		5	
2		6	
3		7	
4		8	

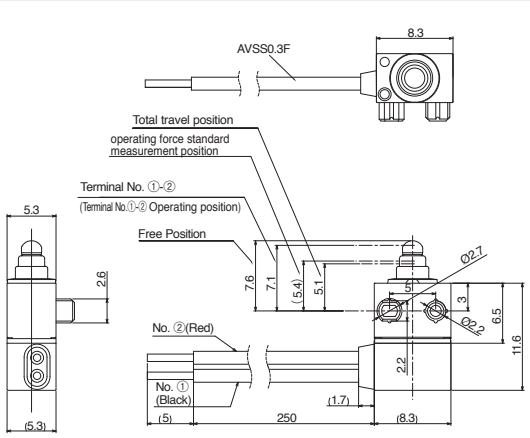
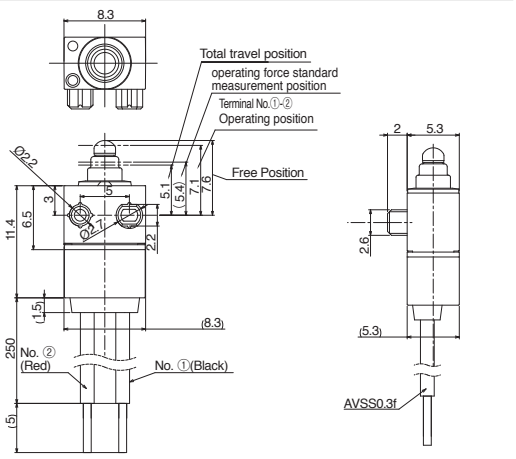
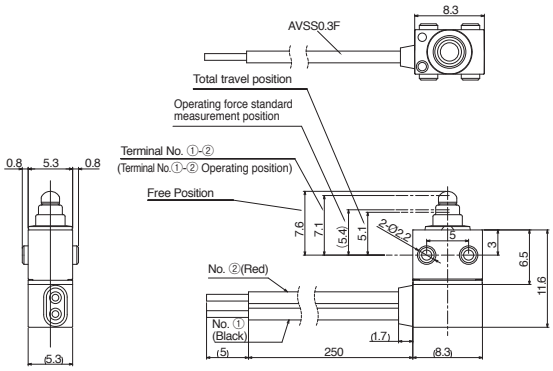
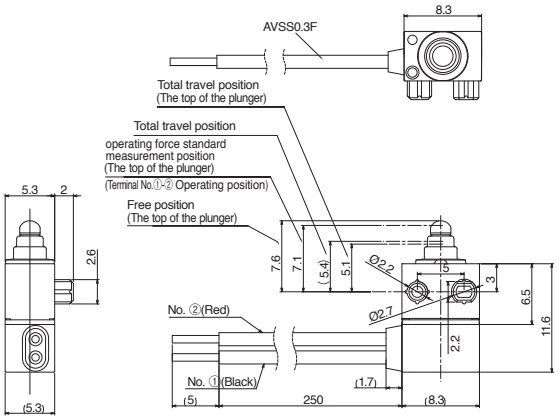
Dimensions

Unit:mm

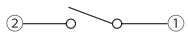
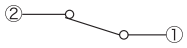
No.	Style	No.	Style
9		12	
10		13	
11		14	

Dimensions

Unit:mm

No.	Style	No.	Style
15		17	
16		18	

Circuit Diagram

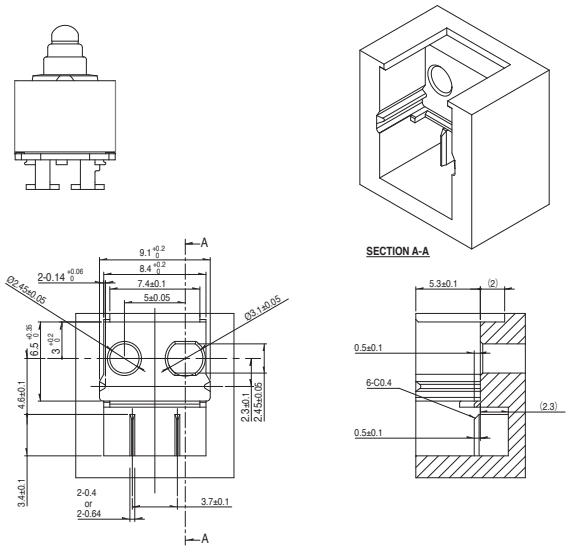
Normal Open	Normal Close
	

Recommended Unit Terminal Shape for Press-Fit Terminals (Normally Open)

Unit:mm

Style

SPVQ811004, SPVQ831001

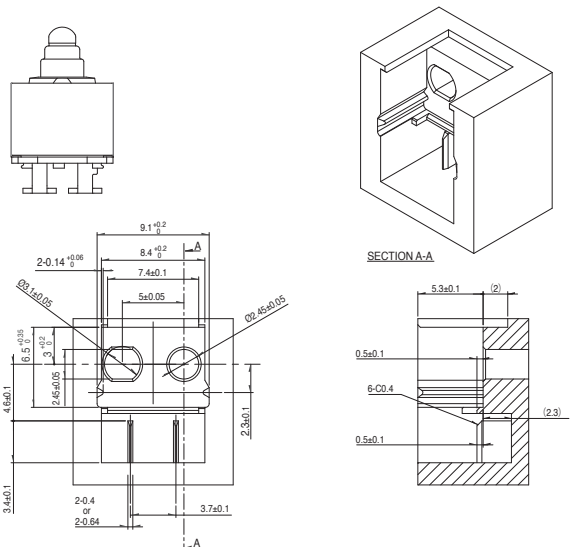


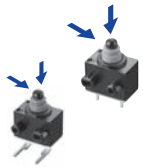
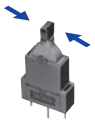
Recommended Unit Terminal Shape for Press-Fit Terminals (Normally Closed)

Unit:mm

Style

SPVQ821004



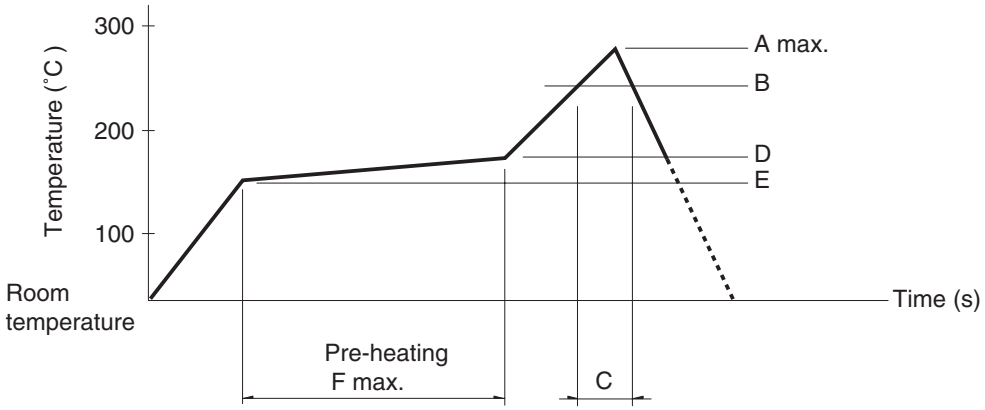
Series		Water-proof Type			Fast Switching Type		
		SPVQ8	**SPVQA**	**SSCN**	**SPVQ9**	**SPVQC**	**SPVQE**
Photo							NEW
Operation type		Two-way					
Dimensions (mm)	W	8.3	15.2	13	15.4	15.4	17.2
	D	5.3	6.4	5	8.4	7.4	12
	H	6.5	7.95	15	7.5	7.5	7.5
Operating temperature range		−40℃ to +85℃					
Automotive use		●	●	●	●	●	●
Life cycle (availability)		★3	★3	★3	★3	★3	★3
Poles / Positions		1/1	1/1 1/2	1/2	2/2	2/2	3/2
Rating (max.) (Resistive load)		0.1A 12V DC			50mA 26V DC	50mA 18V DC	
Rating (min.) (Resistive load)		50μA 5V DC		100μA 5V DC	50μA 5V DC		
Durability	Operating life without load	300,000cycles 1Ω max. or 1,000,000cycles 3Ω max.	300,000cycles 1Ω max.	100,000cycles 1Ω max.	300,000cycles 200mΩ max.		300,000 cycles CIRCUIT ①-②-③ and ⑤-⑥-⑦ 200mΩ max. CIRCUIT ④-⑧-⑨-⑩ 1Ω max.
	Operating life with load Rating (max.) (Resistive load)	300,000cycles 1Ω max. or 1,000,000cycles 3Ω max.	300,000cycles 1Ω max.	100,000cycles 1Ω max.	300,000cycles 200mΩ max.		300,000 cycles CIRCUIT ①-②-③ and ⑤-⑥-⑦ 200mΩ max. CIRCUIT ④-⑧-⑨-⑩ 1Ω max.
Electrical performance	Initial contact resistance	500mΩ max.			75mΩ max.		CIRCUIT ①-②-③ and ⑤-⑥-⑦ 75mΩ max. CIRCUIT ④-⑧-⑨-⑩ 250mΩ max.
	Insulation resistance	100MΩ min. 500V DC				100MΩ min. 250V DC	100MΩ min. 100V DC
	Voltage proof	500V AC for 1minute				250V AC for 1minute	100V AC for 1minute
Mechanical performance	Terminal strength	3N for 1minute (with terminal) Wire strength 30N for 1minute (with wire)	3N for 1minute				
	Actuator strength	20N		10N	20N		
Environmental performance	Cold	−40℃ 500h					
	Dry heat	85℃ 500h					
	Damp heat	60℃, 90 to 95% RH 500h					
Operation force		1±0.5N		2N max.	1±0.5N		
Page		61	66	69	70	71	72

Detector Switches Soldering Conditions · · ·

Detector Switches Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple φ0.1 to 0.2 CA (K) or CC (T) at soldering portion (copper foil surface).
   A heat resisting tape should be used for fixed measurement.
3. Temperature profile



Series (Reflow type)	A (℃) 3s max.	B (℃)	C (s)	D (℃)	E (℃)	F (s)
SPPB	250	230	40	180	150	120
SPPW8			35			
SPVE	260		40			
SPVL						
SPVM						
SPVN						
SPVR						
SPVS						
SPVT						
SSCM						
SSCQ						
SPVQC, SPVQE	250					

Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, surface depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

Reference for Hand Soldering

Series	Soldering temperature	Soldering time
SPVS, SPVN, SPVT, SPVM, SPVR, SPVE, SPPW8,SSCQ, SSCM, SPVL, SSCT, SPVQC, SPVQE	350±5℃	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	300±10℃	3 +1 / 0s
SPPB (Reflow)	300±5℃	5s max.
SSCF, SPPB (For Lead, Dip)	350±10℃	3 +1 / 0s

Reference for Dip Soldering

(For PC board terminal types)

Series	Items		Dip soldering	
	Preheating temperature	Preheating time	Soldering temperature	Duration of immersion
SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	100±10℃	60s max.	260±5℃	5±1s
SPPW8, SPPB	100 ℃ max.	60s max.	255±5℃	5±1s
SSCF	—		260±5℃	5±1s

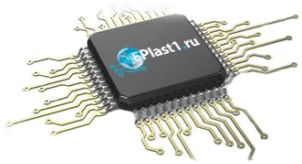
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.