

World's Standard Model G6A!

- · Resistant to electromagnetic interference, enables high-density mounting.
- Impulse withstand voltage of 1,500V meets FCC requirements.
- · Gold-clad twin-contacts provide short contact bounce in addition to its high contact reliability.
- · A variety of products that cover a wide range of use.

RoHS Compliant



Model Number Legend



1. Relay Function

- None : Single-side stable
- : Single-winding latching U
- : Double-winding latching κ
- 2. Contact Form
- 2: DPDT (2c)
- 3. Contact Type
- 7: Bifurcated crossbar Ag (Au-Alloy)
- 4. Protective Structure
- 4: Fully sealed

Ordering Information

OLUL /C. LUL. Contributed Medical

- 5. Terminal Shape
- P: PCB Terminals

6. Classification None : Standard

- ST : Stand-off 0.64 mm
- 15 : High-sensitivity (150 mW)
- 40 : Low-sensitivity
 - (Single-side Stable: 400 mW Double-winding Latching: 360 mW)

7. Approved Standards

- None : Standard
- US : UL/C-UL

Application Examples

- Telecommunication equipment
- Security equipment
- Test & measurement equipment

Relay Function	Classification	Contact form	Model	Rated coil voltage (VDC)	Minimum packing unit
	Standard		G6A-274P-ST-US	3, 4.5, 5, 6, 9, 12, 24	
	Stanuaru		G0A-2/4F-51-05	48	
Single-side Stable			G6A-274P-ST40-US	3, 5, 6, 9, 12, 24	
Туре	Low-sensitivity		G0A-2/4P-5140-05	48	
	High-sensitivity		064 074D 0715 US	3, 5, 6, 9, 12, 24	
			G6A-274P-ST15-US	48	05 non/tube
Single-winding	Standard	DPDT (2c)		3, 4.5, 5, 6, 9, 12, 24	25 pcs/tube
Latching Type			G6AU-274P-ST-US	48	
	Other and a well			3, 4.5, 5, 6, 9, 12, 24	
Double-winding	Standard		G6AK-274P-ST-US	48	
Latching Type	1	1		3, 5, 6, 9, 12, 24	
	Low-sensitivity		G6AK-274P-ST40-US	48	

Note: When ordering, add the rated coil voltage to the model number.

Example: G6A-274P-ST-US DC3 Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as VDC.

Α

GUS

Ratings

Coil: Single-side Stable (Standard Models)

Contact form	Rated voltage	Rated current		Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)
		(mA)	(Ω)		% of rated voltage		(11100)
	3 VDC	66.7	45				
	4.5 VDC	44.6	101	- - 70% max.	10% min.	200% (at 23°C)	Approx. 200
	5 VDC	40.0	125				
	6 VDC	33.3	180				
DPDT (2c)	9 VDC	22.2	405				
	12 VDC	16.7	720				
	24 VDC	8.3	2,880				
	48 VDC	4.9	9,750	-			Approx. 235

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.

3. The maximum voltage is the highest voltage that can be imposed on the relay coil.

Coil: Single-side Stable (Low-sensitivity Models)

Contact form	Rated voltage	Rated current	Coil resistance	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)	
		(mA)	(Ω)		% of rated voltage			
	3 VDC	133.3	22.5	70% max.	10% min.	150% (at 23°C)	Approx. 400	
	5 VDC	80	62.5					
	6 VDC	66.7	90					
DPDT (2c)	9 VDC	44.3	203					
	12 VDC	33.3	360					
-	24 VDC	16.7	1,440					
	48 VDC	8.3	5,760					

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.

3. The maximum voltage is the highest voltage that can be imposed on the relay coil.

Coil: Single-side Stable (High-sensitivity Models)

Contact form	Rated voltage	e Rated current	Coil resistance	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)	
		(mA)	(Ω)		% of rated voltage			
	3 VDC	50	60					
	4.5 VDC	33.3	135	- 80% max.	10% min.	200% (at 23°C)	Approx. 150	
	5 VDC	30	167					
	6 VDC	25	240					
DPDT (2c)	9 VDC	16.7	540					
	12 VDC	12.5	960					
	24 VDC	6.3	3,840					
	48 VDC	3.2	15,000					

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

Operating characteristics are measured at a coil temperature of 23°C.
The maximum voltage is the highest voltage that can be imposed on the relay coil.

Coil: Single-winding Latching

Contact form	Rated voltage	Rated current	Coil resistance	Set voltage (V)	Reset voltage (V)	Max. voltage (V)	Power consumption	
Contact Ionn	haleu voltage	(mA)	(Ω)		% of rated voltage	% of rated voltage (n		
	3 VDC	33.7	89		70% max.	200% (at 23°C)	Approx. 100	
	5 VDC	20	250	70% max.				
	6 VDC	16.7	360					
DPDT (2c)	9 VDC	11.1	810					
	12 VDC	8.3	1,440					
	24 VDC	4.2	5,760					
	48 VDC	2.5	19,000				Approx. 120	

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.

3. The maximum voltage is the highest voltage that can be imposed on the relay coil.

Coil: Double-winding Latching (Standard Models)

Contact form	Rated voltage	Rated current	Coil resistance	Set voltage (V)	Reset voltage (V)	Max. voltage (V)	Power consumption
Contact Ionn	haleu vollage	(mA)	(Ω)		% of rated voltage		(mW)
	3 VDC	66.7	45				Approx. 200
	4.5 VDC	40.2	112	- 70% max.	70% max.	200% (at 23°C)	
	5 VDC	36	139				
DPDT (2c)	6 VDC	30	200				Approx. 180
DFDT (20)	9 VDC	20	450				Approx. 160
	12 VDC	15	800				
-	24 VDC	7.5	3,200				
	48 VDC	4.2	11,520				Approx. 200

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.
3. The maximum voltage is the highest voltage that can be imposed on the relay coil.

•Coil: Double-winding Latching (Low-sensitivity Models)

Contact form	Rated voltage	Rated current	Coil resistance	Set voltage (V)	Reset voltage (V)	Max. voltage (V)	Power consumption
Contact Ionn	Haled vollage	(mA)	(Ω)		% of rated voltage		(mW)
	3 VDC	120	25		70% max.	150% (at 23°C)	
	4.5 VDC	79.9	56.3	70% max.			Approx. 360
	5 VDC	72.5	69				
DPDT (2c)	6 VDC	60	100				
DFD1 (20)	9 VDC	40	225				
	12 VDC	30	400				
	24 VDC	15	1,600				
	48 VDC	7.5	6,400				

Note 1. The rated current and coil resistance are measured at a coil temperature of 23° C with a tolerance of $\pm 10\%$.

Operating characteristics are measured at a coil temperature of 23°C.
The maximum voltage is the highest voltage that can be imposed on the relay coil.

Contacts

Load	Resistive load	Inductive load $\begin{pmatrix} \cos\phi = 0.4; \\ L/R = 7 \text{ ms} \end{pmatrix}$	
Contact type	Bifurcated	l crossbar	
Contact material	Ag (Au-Alloy) contact		
Rated load	0.5 A at 125 VAC; 2 A at 30 VDC	0.3 A at 125 VAC; 1 A at 30 VDC	
Rated carry current	3 A		
Max. switching voltage	250 VAC, 220 VDC		
Max. switching current	2 A	1 A	

■Characteristics

Item	Classification	Single-side Stable	Single-winding Latching	Double-winding Latching			
Contact r	esistance *1		50 mΩ max.				
Operate	(set) time	5 ms max.	5 ms max. 5 ms max.				
Release	(reset) time	3 ms max.	5 ms	max.			
Min. set/r	eset signal width	_	10	ms			
Insulatior	resistance *2	1,0	000 MΩ min. (at 500 VDC); except for set-re	eset			
	Between coil and contacts		1,000 VAC, 50/60 Hz for 1 min				
Dielectric strength	Between contacts of the same polarity		1,000 VAC, 50/60 Hz for 1 min				
	Between contacts of different polarity		1,000 VAC, 50/60 Hz for 1 min				
	Between set and reset coils	_	-	250 VAC, 50/60 Hz for 1 min			
Impulse v	vithstand voltage	1,500 V (10 × 160 µs) (conforms to FCC Part 68)					
Vibration	Destruction	10 to 55 to 1	10 to 55 to 10 Hz, 2.5 mm single amplitude (5 mm double amplitude)				
resistanc	e Malfunction	10 to 55 to 10	10 to 55 to 10 Hz, 1.65 mm single amplitude (3.3 mm double amplitude)				
Shock	Destruction		1,000 m/s ²				
resistanc	e Malfunction	500 m/s ²	300	300 m/s²			
Durability	Mechanical	100,0	000,000 operations min. (at 36,000 operation	ons/hr)			
Durability	Electrical	50	0,000 operations min. (at 1,800 operations	/hr)			
Failure ra	te (P level) *3	10 µA at 10 m VDC					
Ambient	operating temperature	-40°C to 70°C (with no icing or no condenstion)					
Ambient	operating humidity		5% to 85%				
Weight		Approx. 3.5 g					

Note: The data shown above are initial values.

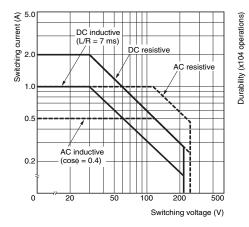
*1. The contact resistance was measured with 10 mA at 1 VDC with a voltage drop method.

*2. The insulation resistance was measured with a 500 VDC megohimmeter applied to the same parts as those used for checking the dielectric strength (except between the set and reset coil).

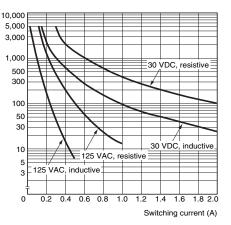
*3. This value was measured at a switching frequency of 60 operations/min and the criterion of contact resistance is 50 Ω. This value may vary, depending on switching frequency, operating conditions, expected reliability level of the relay, etc. It is always recommended to double-check relay suitability under actual load conditions.

Engineering Data

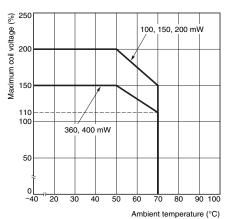
Maximum Switching Power



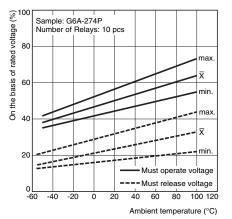
Ourability



•Ambient Temperature vs. Maximum Coil Voltage

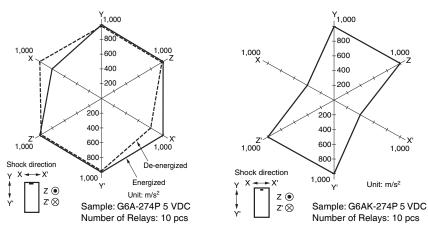






Note: "Maximum voltage" is the maximum voltage that can be applied to the Relay coil.

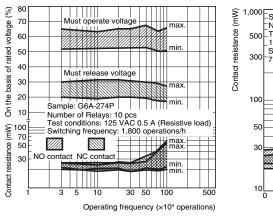
•Shock Malfunction G6A-274P



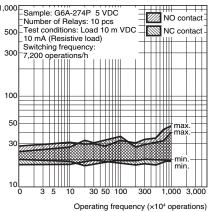
G6AK-274P

Test Conditions: Shock is applied in $\pm X$, $\pm Y$, and $\pm Z$ directions three times each with and without energizing the Relays to check the number of contact malfunctions.

Electrical Durability Test *1



Contact Reliability Test *1, *2



The tests were conducted at an ambient temperature of 23ºC. *2. The contact resistance data are periodically measured reference values and are not values from each monitoring operation. Contact resistance values will vary according to the switching frequency and operating environment, so be sure to check operation under the actual operating conditions before use.

> (%) +10

> > +5

0

_5

0

on the I value ('

Change rate or basis of initial v

(%) +10

rate on the initial value (+5

Change r basis of i _5

Sample

Sample

Must operate voltage

Test

Test

×

Average value

..... - X

Average value

---- Must release voltage

Initial stage

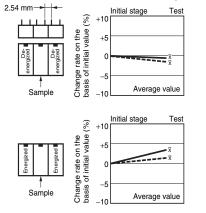
Initial stage

G6A-274P

2.54 mm

Mutual Magnetic Interference G6A-274P



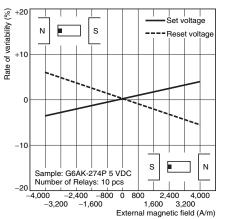


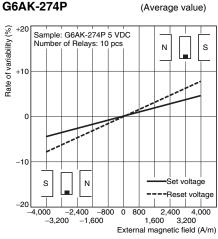
External Magnetic Interference G6AK-274P

(Average value)

Must operate voltage

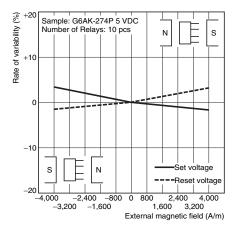
---- Must release voltage







(Average value)

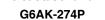


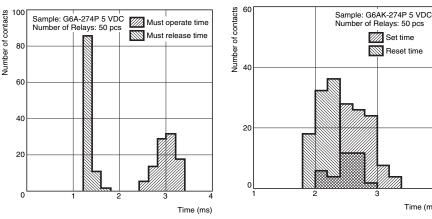
*1.

6

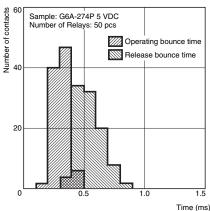
●Time distribution of Operating and Release/Set and Reset *1

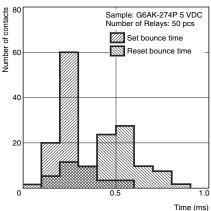
G6A-274P





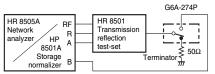
Bounce Time distribution of Operating and Release/Set and Reset *1 G6A-274P G6AK-274P





Time (ms)

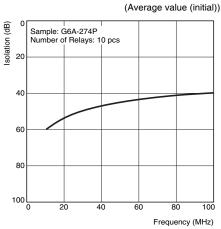
High-frequency Characteristics Measurement Conditions



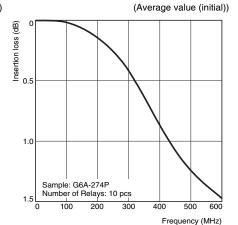
Terminals which were not being measured were terminated with 50 $\ensuremath{\Omega}.$ Measuring impedance: 50 $\boldsymbol{\Omega}$

Note: The high-frequency characteristics data were measured using a dedicated circuit board and actual values will vary depending on the usage conditions. Check the characteristics of the actual equipment being used.

High-frequency Characteristics (Isolation) *1, *2



High-frequency Characteristics (Insertion Loss) *1, *2



High-frequency Characteristics (Return Loss, V.SWR) *1, *2

(Average value (initial)) Return loss (dB) Sample: G6A-274P Number of Relays: 1 of Relays: 10 pcs 5 Return loss SWR 10 15 2.0 20 1.5 v.swr 1.0 25 200 400 600 800 1,000 Frequency (MHz)

G 6

The tests were conducted at an ambient temperature of 23°C. *1.

*2. High-frequency characteristics depend on the PCB to which the Relay is mounted. Always check these characteristics, including durability, in the actual machine before use.

G 6 A

Dimensions Single-side stable PCB Mounting Holes Terminal Arrangement/ G6A-274P-ST-US (BOTTOM VIEW) Internal Connections (BOTTOM VIEW) Tolerance: ±0.1 G6A-274P-ST40-US G6A-274P-ST15-US Eight, 1.0-dia. holes -2.54 10.1max. 20 2max (9.9)* (1.2) 2 54 (20) ⁶ 0.64 8.4max 7.62 (8.2)* ϕ 16 11 13 .16 ╢╢ (1.2) Note: Check carefully the 0.3 coil polarity of the 0.6 -7.62 Note: Orientation marks are indicated as follows: [] $\hfill \square$ Relay. Average value Note: Each value has a tolerance of ±0.3 mm. Single-winding latching PCB Mounting Holes **Terminal Arrangement/** G6AU-274P-ST-US (BOTTOM VIEW) Internal Connections Tolerance: ±0.1 (BOTTOM VIEW) -2 54 Eight, 1.0-dia. holes 10.1max. (1.2) 20.2max (20)* (9.9)* φ Φ 0.64 8.4max (8.2)* 7.62 2 IS R 16 + 13 3.16 (1.2) Note: Check carefully the 0.3 coil polarity of the 0.6 -7.62 Note: Orientation marks are indicated as follows: Relay. Average value Note: Each value has a tolerance of ±0.3 mm. **Double-winding latching** PCB Mounting Holes Terminal Arrangement/ G6AK-274P-ST-US (BOTTOM VIEW) Internal Connections (BOTTOM VIEW) Tolerance: ±0.1 G6AK-274P-ST40-US -2.54 Ten, 1.0-dia. holes 10.1max 20.2max (20)* (9.9)* (1.2) 2.54 모8 0.64 8.4max (8.2)* 7.62 2 Ø ¥ 16브 15 13中 <u>+||_</u> 3.16 (1.2) 5.08 5.08 5.08 (1.2) Note: Check carefully the -0.3 2.54 (1.2)coil polarity of the 0.6 -7.62-Relay. * Average value Note: Orientation marks are indicated as follows: Note: Each value has a tolerance of ±0.3 mm.

Approved Standards

To order the model that is certified for the UL/C-UL standards, add "-US" to the end of the model number.

UL/C-UL Recognized. Wus (File No.E41515)

Classification	Contact form	Coil ratings	Model	Contact ratings	Number of test operations
Single-side stable			G6A-274P-ST-US		
Latching	DPDT (2c)	3 to 48 VDC	G6AK-274P-ST-US G6AU-274P-ST-US	0.6 A, 125 VAC at 40°C 2 A, 30 VAC at 40°C 0.6 A, 110 VAC at 40°C	6,000
Low-sensitivity			G6A(K)-274P-ST40-US	0.6 A, 110 VAC at 40 C	
High-sensitivity			G6A-274P-ST15-US		

■Precautions

•Please refer to "PCB Relays Common Precautions" for correct use.

Correct Use

●Long-term Continuously ON Contacts

Using the Relay in a circuit where the Relay will be ON continuously for long periods (without switching) can lead to unstable contacts because the heat generated by the coil itself will affect the insulation, causing a film to develop on the contact surfaces. We recommend using a latching relay

(magnetic-holding relay) in this kind of circuit. If a single-side stable model must be used in this kind of circuit, we recommend using a fail-safe circuit design that provides protection against contact failure or coil burnout.

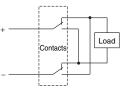
Relay Handling

When washing the product after soldering the Relay to a PCB, use a water-based solvent or alcohol-based solvent, and keep the solvent temperature to less than 40°C. Do not put the Relay in a cold cleaning bath immediately after soldering.

•Double-switching load in two poles

Double-switching in two poles as shown in the figure below, one pole and two pole interval may become MBB (Make Before Break) mechanically according to the timing of the point of contact switching (By the short-circuit mode), and the malfunction might be caused.

In such a circuit, direct electric switching should be avoided, and concern for contact to be carried after the contact of Relay absolutely switches in condition of no load.



Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperty. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

OMRON Corporation Electronic and Mechanical Components Company

Contact: www.omron.com/ecb

Cat. No. K020-E1-15 0118(0207)(O)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Omron:

 G6AK-274P-ST-US-DC5
 G6A-274P-ST-US-DC12
 G6A-274P-ST-US-DC24
 G6A-274P-ST40-US-DC12
 G6A-274P-ST40-US-DC12
 G6A-274P-ST40-US-DC12
 G6A-274P-ST-US-DC48
 G6AK-274P-ST-US-DC3
 G6AK-274P-ST-US-DC3
 G6A

 DC24
 G6A-274P-ST-US-DC5
 G6A-274P-ST-US-DC6
 G6A-274P-ST40-US-DC9
 G6A-274P-ST40-US-DC5
 G6A-274P-ST-US-DC48
 G6A-274P-ST40-US-DC5
 G6A-274P-ST40-US-DC9
 G6A-274P-ST40-US-DC5
 G6A-274P-ST15-US-DC9
 G6A-274P-ST15-US-DC9
 G6A-274P-ST15-US-DC9
 G6A-274P-ST15-US-DC9
 G6A-274P-ST40-US-DC9
 G6A-274P-ST40-US-DC9
 G6A-274P-ST40-US-DC6
 G6A-274P-ST40-US-DC3
 G6A-274P-ST40-US-DC6
 G6AU-274P-ST-US-DC3
 G6AU-274P-ST40-US-DC6
 G6AU-274P-ST-US-DC9
 G6AU-274P-ST-US-DC9
 G6AU-274P-ST-US-DC9
 G6AU-274P-ST-US-DC6
 G6AK-274P-ST-US-DC3
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC9
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC9
 G6AL-274P-ST-US-DC6
 G6AK-274P-ST-US-DC3
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC9
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST-US-DC6
 G6AK-274P-ST



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:** <u>org@eplast1.ru</u> **Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.