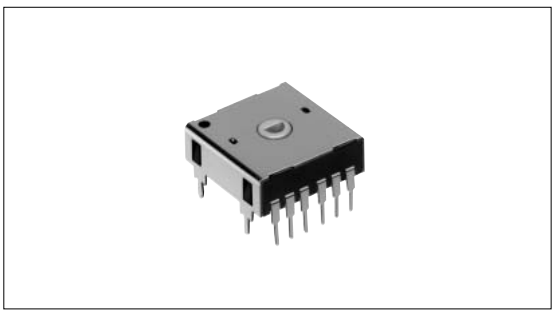
Hollow Shaft Type

SRGA Series

RoHS compliant

Hollow shaft vertical encoders deliver increased ease of use.



Typical Specifications

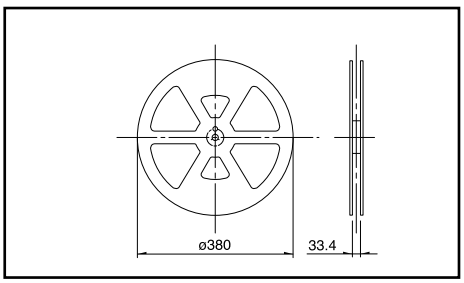
Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 12V DC/50μA 3V DC
Contact resistance (Initial/After operating life)		1Ω max./1Ω max.
Operating life	Without load	10,000cycles
	With load	10,000cycles (0.1A 12V DC)

Product Line

Torque (mN•m)	Operating direction	Output code	Positions	Changeover angle	Type	Minimum order unit (pcs.)	Product No.	Drawing No.
20±10	Vertical	Gray	8	45°	Standard (hollow shaft)	1,680	SRGAV80601	1
			12	30°			SRGAVC0301	
			24	15°			SRGAVQ1100	
Without detent			13		Reflow	900	SRGAR10100	2

Taping Specification (Taping Packaging)

Reel Size Unit:mm



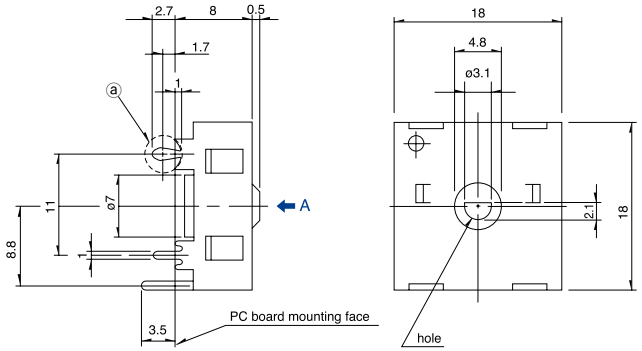
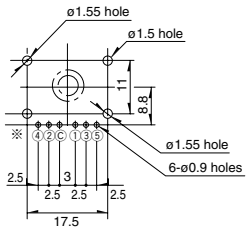
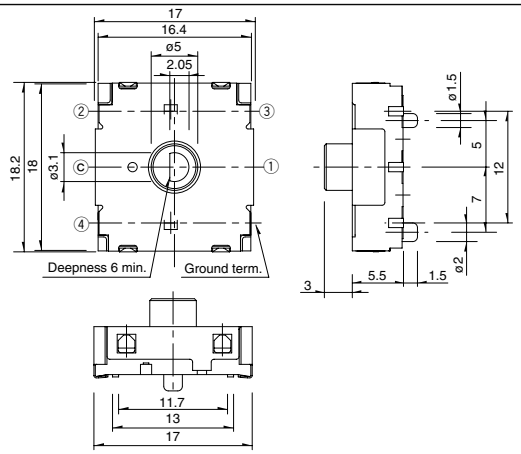
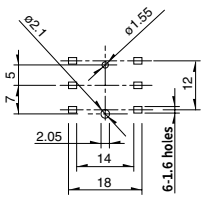
Series	Number of packages (pcs.)			Tape width (mm)
	1 reel	1 case /Japan	1 case /export packing	
SRGAR10100	300	300	600	32

Notes

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. Please contact us for automotive use products.
3. Please place purchase orders per minimum order unit (integer).

Dimensions

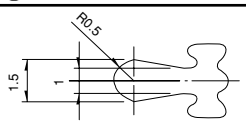
Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from the Direction A)
1		
2		

Detail of ⓐ

Unit:mm

Standard



Note

※④⑤ of SRGAV80601 and ⑤ of SRGAVC0301 are dummy terminals.

Standard Code (Viewed from Direction A)

SRGA

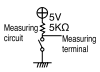
Code	Terminal \ Position / Number of positions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
									8				12												24
Gray	1		●	●			●	●			●	●			●	●			●	●			●	●	
	2			●	●	●	●					●	●	●	●					●	●	●	●		
	3					●	●	●	●	●	●	●	●									●	●	●	●
	4									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5																	●	●	●	●	●	●	●	●

SRGAR

Code	Terminal \ Position / Number of positions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
														13											
Gray	1	●			●	●			●	●			●	●											
	2					●	●	●		●	●	●	●												
	3	●	●	●	●	●	●					●	●	●											
	4			●	●	●	●	●																	

● The marks show the ON position.
※For terminal alignment, please refer to the illustration.
※ Please note that there might be ON output of the dummy terminal in the circuit design.

List of Varieties

Type			Absolute type			
			With Knob	Metal shaft	Hollow shaft	Jog-shuttle
Series			SRRQ	SRGH	SRGA	SRGPHJ
Photo						
Output			Absolute type			
Outline specifications	Shaft types		With knob	Single-shaft	Hollow shaft	Single-shaft/ Dual-shaft
	Operating direction		Vertical/Horizontal	Vertical		
	Number of pulse/ Number of detent		—			
	Push switch (Travel mm)		Without			
	Optional functions		—			
	Changeover angle		22.5°, 36°	40°, 12.8°	15°, 24°, 30°, 45°	Shuttle part:All angles rotation 160° Jog part: All angles rotation 360°
Dimensions (mm)	W		14.4	20	18	35
	D		15.6	19		43.7
	H		7.5	10.5	8	8.6
Soldering	Manual soldering		300±10°C, 3 $^{+1}_{0}$s	350±10°C, 3 $^{+1}_{0}$s		300±10°C, 3 $^{+1}_{0}$s
	Dip soldering		260±5°C, 10±1s			260±5°C, 5±1s
	Reflow soldering		—		Please see P.209	—
Operating temperature range			-10°C to +60°C	-40°C to +85°C	-10°C to +60°C	
Electrical performance	Initial contact resistance		1Ω max.			—
	Output voltage	Shuttle part	—			4V min. at 1mA 5V DC (resistive load) 
		Jog part				
	Insulation resistance		100MΩ min. 100V DC			
Mechanical performance	Voltage proof		100V AC for 1minute			
	Rotational torque		Shall be in accordance with individual specifications.			
	Terminal strength		5N for 1minute			
	Resistance to soldering heat	Rotational direction	—			0.6 N·m
		Push direction	5N	100N		
	Vibration		10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively			
Environmental performance	Cold		-20±2°C for 96h			
	Dry heat		85±2°C for 96h			
	Damp heat		40±2°C, 90 to 95%RH for 96h			
Page			202	204	206	208

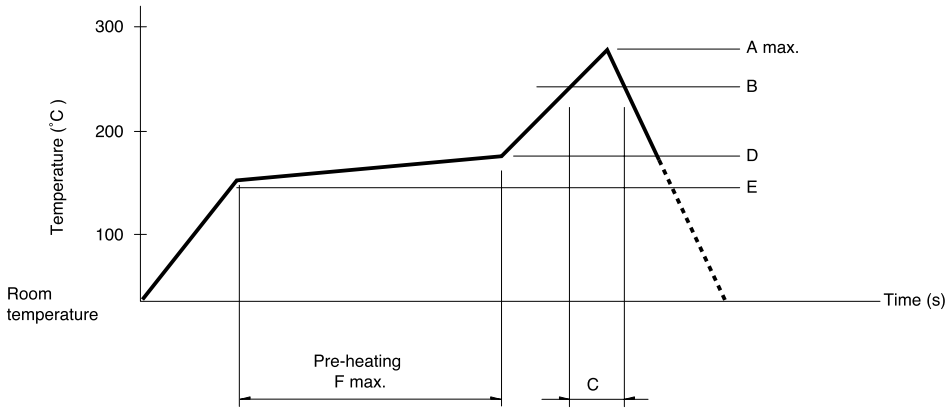
Note

The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2ϕ 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 (°C) max.	B (°C)	C (s)	D (°C)	E (°C)	F(s)
SRGP30	240	230	20	150	150	120
SRGP30	260		40	180		
SRGAR10100	240	220	30	160		

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, 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.

Attached Parts

The following parts are included with the product.

SRGH Series

Unit:mm