

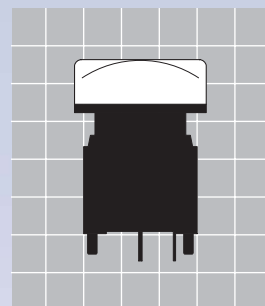
New Product

CONTACT No.100



Series **KP01**

Audio/Video Illuminated Pushbuttons



Actual Size



KP0115ANAKG03CF



KP0115ANBKG03CF



KP0115ANBKG03

Audio/Video Illuminated Pushbuttons

Series KP01

Quiet, Smooth, and Light Touch

Highly Visible Status Indication

- Use of Super bright, full face illumination gives exceptionally clear status indication.
- Red/Green bicolor LED produces amber by simultaneous illumination.

Legends

- Easy installation of film inserts.

Compact Size with Long Stroke

- Low profile of 23.0 mm from PC board to top of cap, plus distinct, long stroke of 4.5 mm.

Environmentally Friendly

- Suited to lead-free solder processing applications because of heat resistant resin materials.
- Components and packaging materials meet RoHS directive restricting use of hazardous substances such as lead, cadmium, mercury, hex chrome, PBB, and PBDE.



Unique Design

- Specially designed actuator mechanism creates smooth and silent operation.

Unique Internal Mechanism

- Tactile or nontactile versions achieved by distinctive design of internal mechanism.

Industry Standard Caps

- Choice of three standard cap sizes 12 mm, 15 mm, and 17.4 mm square.

Standoffs

- Specially designed snap-in standoffs for secure PC board mounting and alignment.

Long Life and High Reliability

- Twin contacts with gold plating assure high reliability and long life of 5,000,000 operations minimum.

► Applications

Professional Audio Consoles, Telecommunication, Electronic Measurement, Machine Tools, Amusement Equipment.

► Available

April 16, 2004

► Specifications

Switch	
Electrical Capacity (Resistive Load)	100 mA 12 V DC
Contact Resistance	200 mΩ max. at 20 mV 10 mA
Insulation Resistance	100 MΩ min. at 250 DC
Dielectric Strength	1,000V AC min between contacts for 1 minute min. 1,500V AC min between contacts & case for 1 minute min.
Mechanical Life	5,000,000 operations min.
Electrical Life	5,000,000 operations min.
Operating Temp. Range	-25 through +50
Total Travel	4.5 mm
Nominal Operating Force	1.9 ± 0.6 N
Soldering Time & Temperature	Manual Soldering 4 seconds max at 410°C max. Soldering Bath 6 seconds max at 270°C max. 60 seconds max at 140°C max for solder pot preheat temperature.

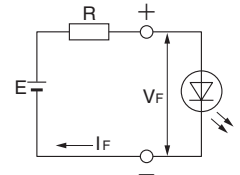
► LED Specifications

Super Bright LED			Ta = 25°C
LED Color	CF	Red/Green	Unit
Power Peak Voltage Pd		100/75	mW
Forward Peak Current	I _{FM}	30/25	mA
Continuous Forward Current	I _F	20/20	mA
Forward Voltage	V _F	2.0/3.7	V
Reverse Peak Voltage	V _{RM}	5/5	V
Wavelength of Peak Emission	λ	520 ~ 535/619 ~ 630	nm
Minimum Brightness		30/60	mcd
Standard Brightness		50/115	mcd
Current Reduction Rate Above 25°C ΔI _F		0.38/0.32	mA/°C
Ambient Temperature Range		-25°+50°C	

Ballast Resistor Calculation for LED

A ballast resistor must be connected in series with LED.

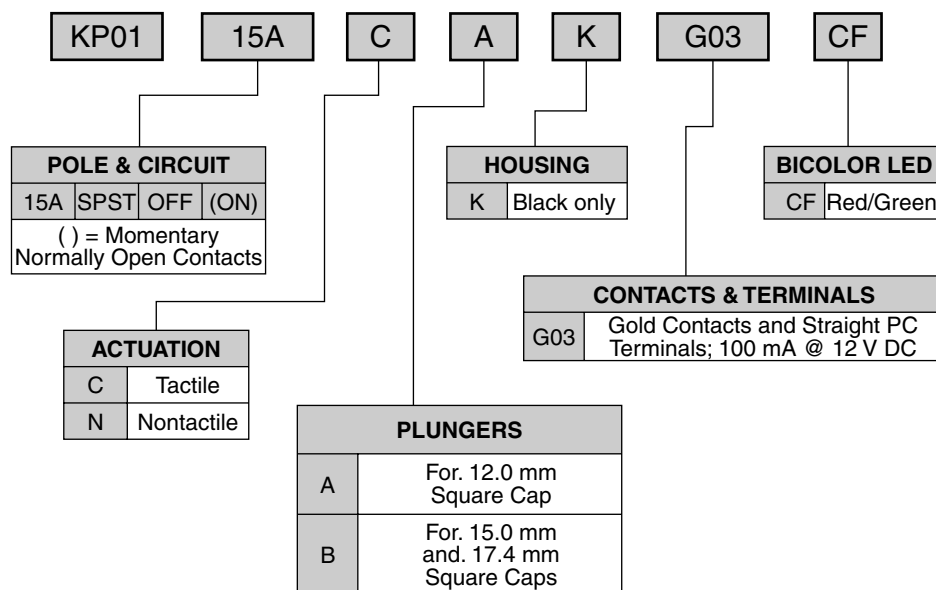
The following circuit diagram and formula will assist in calculating the value of the ballast resistor.



R = Resistor Value (Ω)
E = Source Voltage (V)
V_F = Forward Voltage (V)
I_F = Forward Current (mA)

$$R = \frac{E - V_F}{I_F}$$

► Typical Switch Ordering Example



► Pushbuttons

Plunger Position < > = Momentary		Model		Connected Terminals			
Normal 	Down 	Plunger	Actuation		Pole & Circuit	Normal 	Down
			Tactile	Nontactile			
OFF	<ON>	A	KP0115ACA KG03CF	KP0115ANA KG03CF	SPST	Normally Open	1-1a
		B	KP0115ACB KG03CF	KP0115ANB KG03CF			

► A: 10 mm Plunger for AT3078
 ► B: 12 mm Plunger for AT3079/AT3080

Cap Size	Dimensions & Foot Print
12 mm Square Cap KP01-15AN 100mA/12VDC MKK JAPAN	 Foot Print (View from the switch side)
15 mm Square Cap KP01-15AN 100mA/12VDC MKK JAPAN	 Foot Print (View from the switch side)
17.4 mm Square Cap KP01-15AN 100mA/12VDC MKK JAPAN	 Foot Print (View from the switch side)

LED Circuit	CAPS		
	AT3078	AT3079	AT3080
	12 Square	15 Square	17.4 Square
	Clear Lens, White Diffuser		

OPTIONAL PROTECTIVE GUARD
AT4170 Open 180°; Closes automatically
Protective Guard for snap-in mounting of models with 15 mm square caps

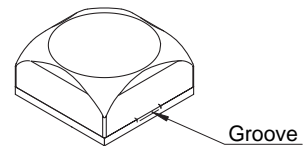
▶ Operating Instructions

⚠ Handling and Storage Precautions

- Protection from ESD is needed in handling, storage, and transportation.
- A conductive mat or metal plate and ESD handset are required when the switches are handled.
- An ESD bag or ESD packaging is required for storage.

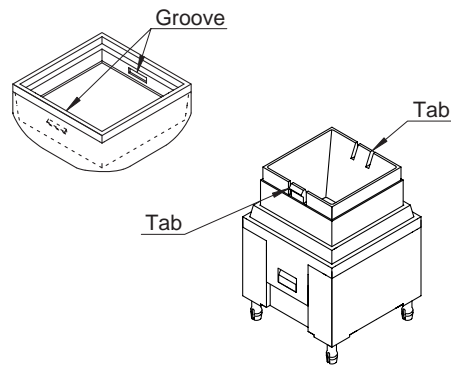
Diffuser Installation

- Use the groove on the plunger to lift the cap out of plunger.



Cap Installation

- Match the indentations on the button with notches on the plunger. Push the button in.
- Actuate several times to assure smooth operation.

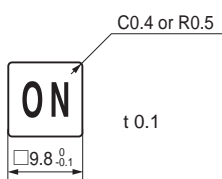


Legends

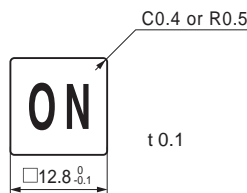
Film insert thickness; 0.1 mm max.

Suggested printable area for film insert

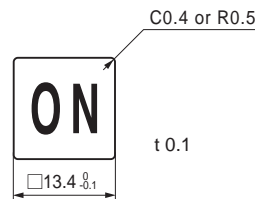
AT3078 (12 square)



AT3079 (15 square)



AT3080 (17.4 square)



*Note that the specifications are subject to change without notice.

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NIHON KAIHEIKI IND. CO., LTD.

715-1, Unane, Takatsu-ku, Kawasaki-shi,
213-8553 JAPAN

Tel: +81 (44) 813-8008 Fax: +81 (44) 813-8038

<http://www.nikkaiswitches.com> E-mail: overseas@nikkai.co.jp

