

GP01 Series Pushbutton
Product Training Module



Introduction

Purpose:

- To introduce the GP01 Series Ultra-Miniature Right Angle SMT Pushbuttons

Objective:

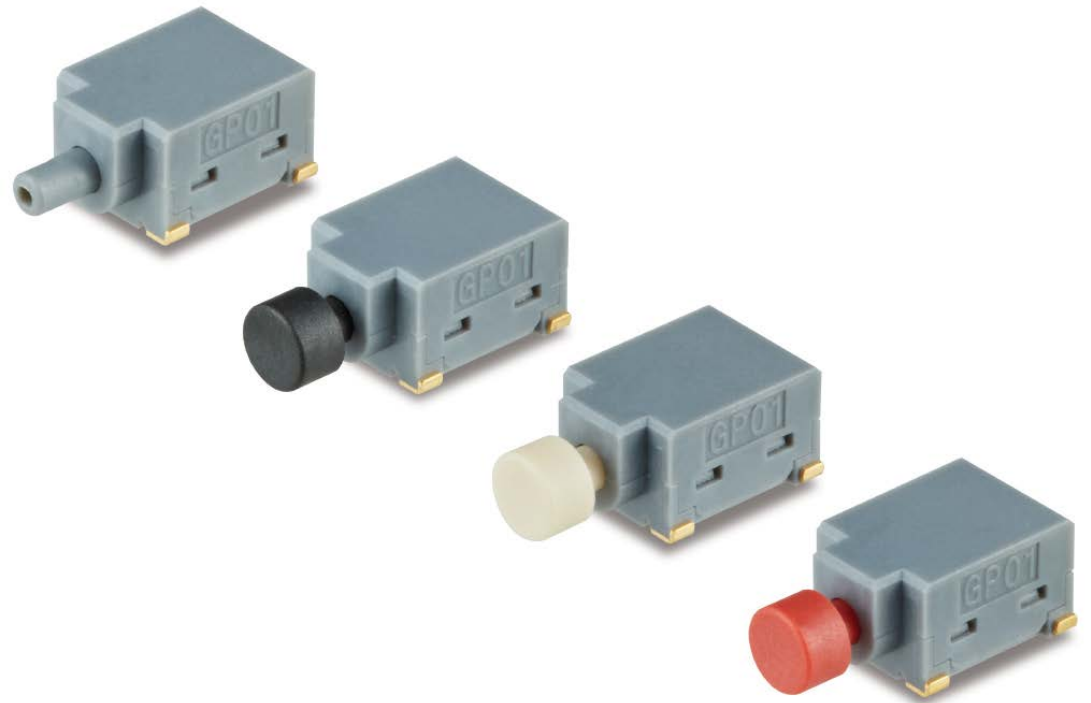
- Discuss the physical and electrical options available
- Present features and benefits with an overview of the part number breakdown
- Review applications

Contents

- 11 pages

GPO1 Series Ultra-Miniature Right Angle SMT Pushbuttons

- Ultra-miniature size allows high density mounting and utilizes reduced space for surface mounting.
- Cap and plunger are one unit, simplifying soldering and cleaning process.
- Greaseless condition contributes to resistance of harsh conditions, including wider operating temperatures
- J bend terminals lend to easy surface mounting and mechanical stability during soldering and simplified solder joint inspection.



GP01 Series Ultra-Miniature Right Angle SMT Pushbuttons

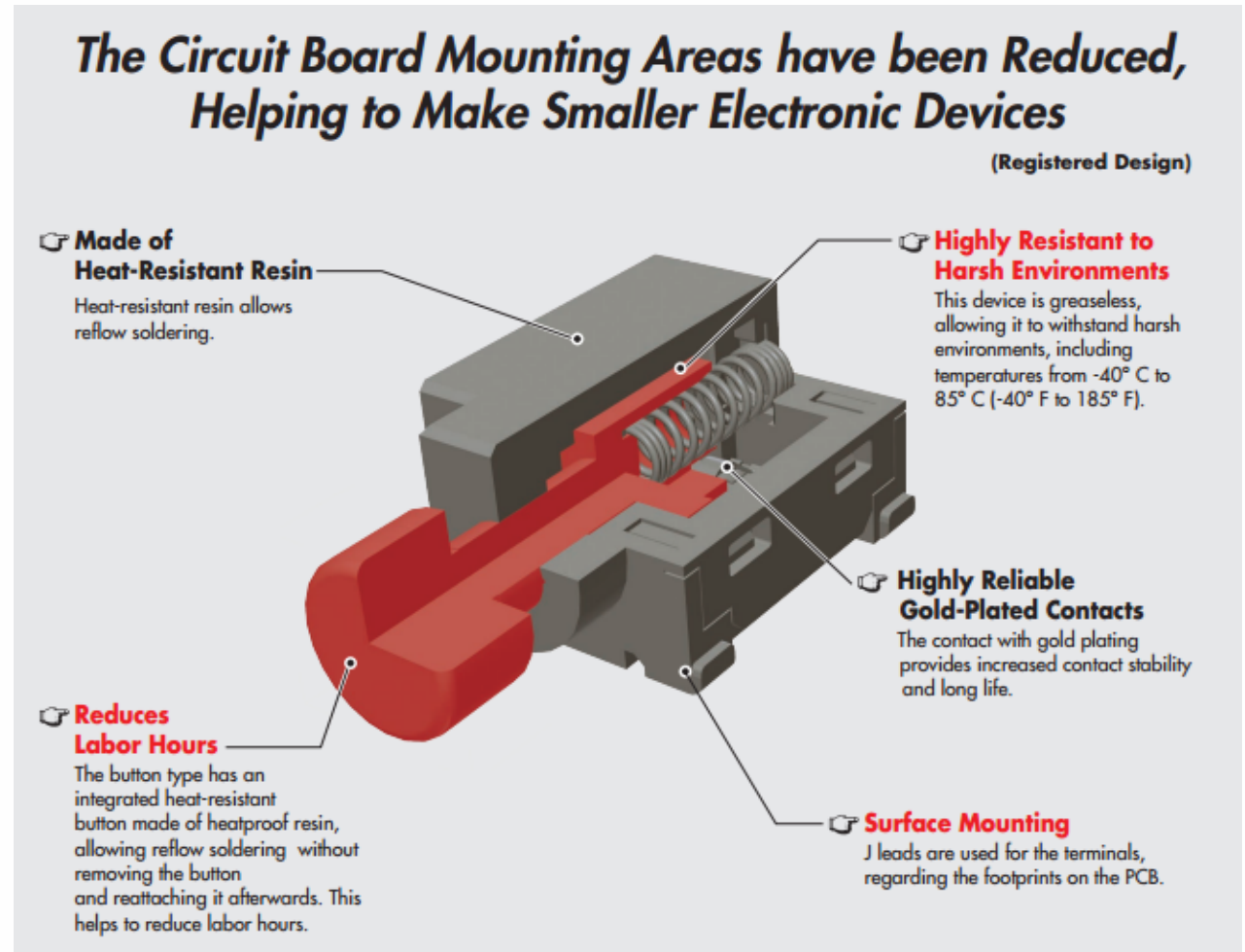
- Available features in the GP01 Series include the following:
 - Full body switch with plunger in one piece
 - Plunger (no cap version)
 - Black, Red, or White caps available
 - Packing partitioned tray or tape-reel of 500 pieces per reel



Features

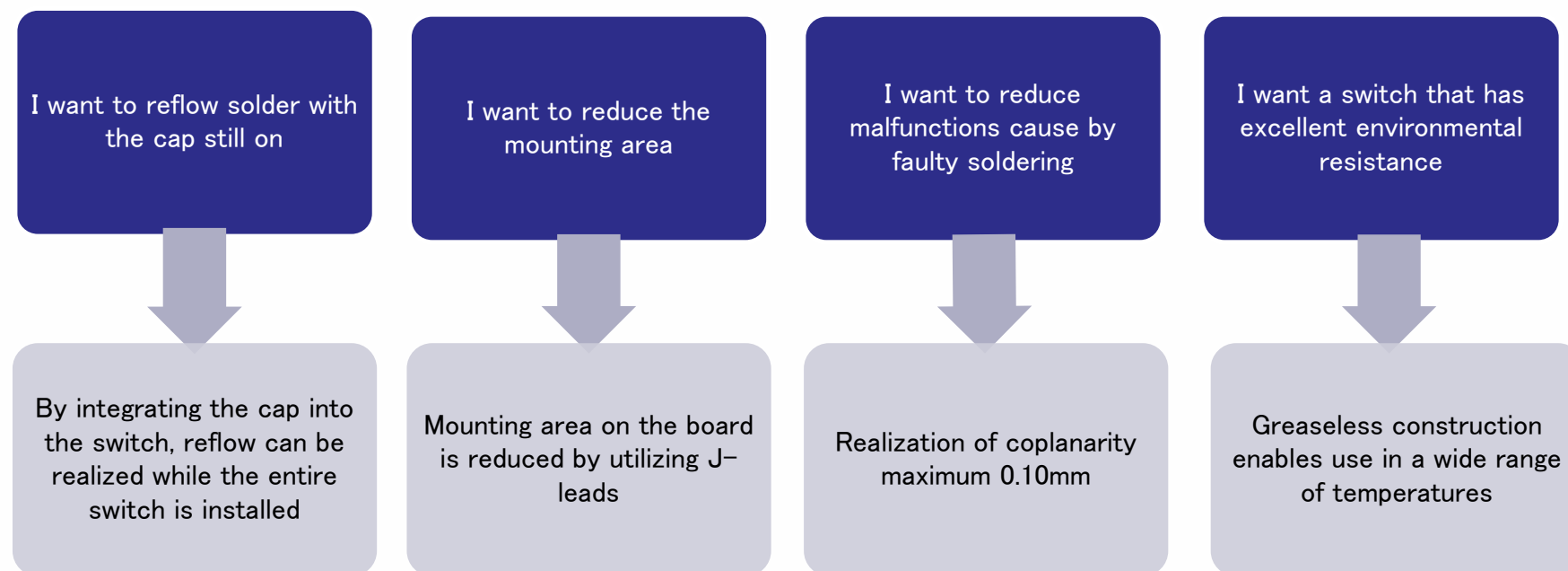
Features

- 40,000 mechanical life/electrical life
- .043" (1.1mm) total actuator travel
- SPST, normally open, momentary action
- Operating temperature range of -40°C through $+85^{\circ}\text{C}$ for harsh conditions

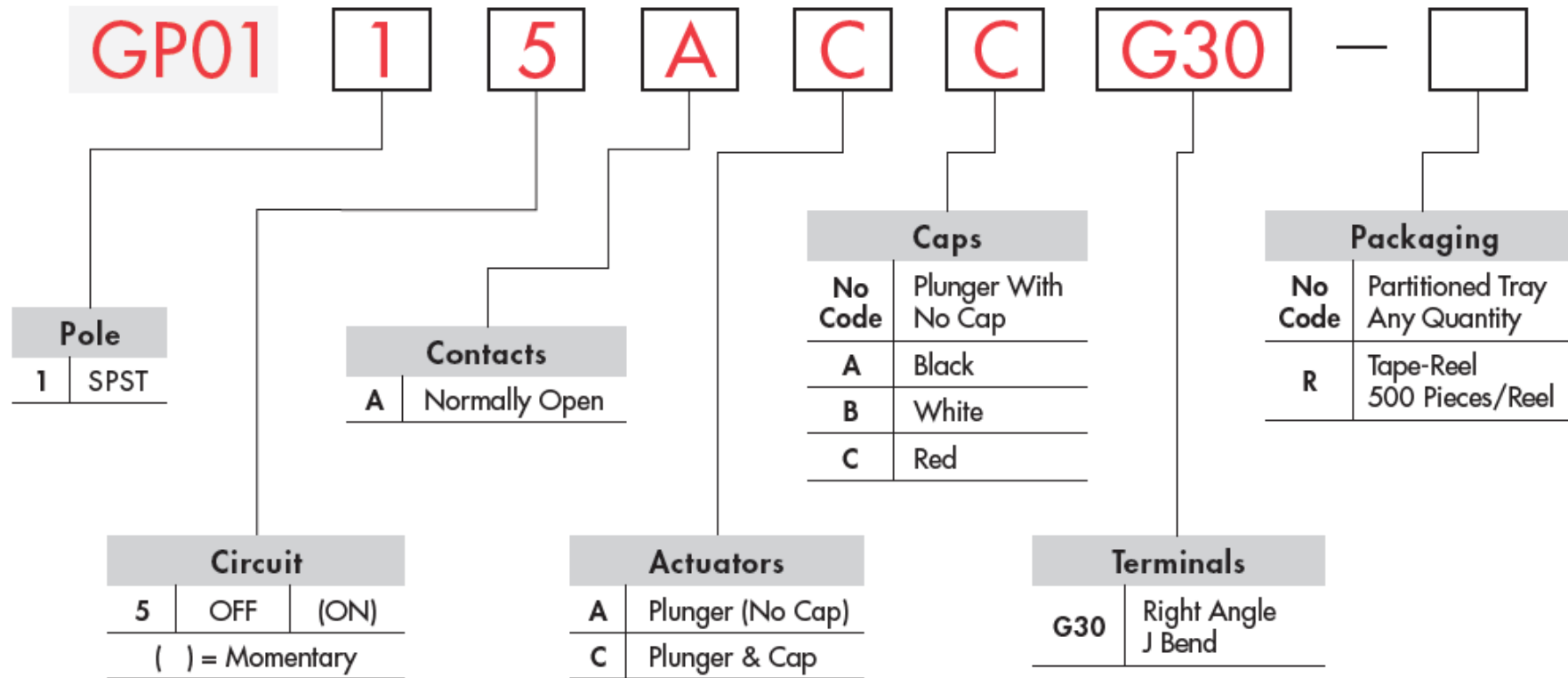




GPO1 Series Ultra-Miniature Right Angle SMT Pushbuttons Designed to respond to a range of customer needs



Nomenclature



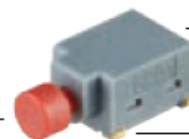
Note: Plunger Actuator (Code A) cannot be combined with Cap.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

GP0115ACCG30

Packaged in Partitioned Tray or Tape-Reel

Plunger & Cap One Unit



SPST OFF-(ON) Circuit

J Bend Terminals

Specifications

Electrical Capacity (Resistive Load)

Logic Level: 0.4VA maximum @ 28V AC/DC maximum
(Applicable Range 0.1 mA ~ 0.1 A @ 20mV ~ 28V)

Other Ratings

Contact Resistance: 80 milliohms maximum
Insulation Resistance: 500 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum for 1 minute minimum
Mechanical Life: 40,000 operations minimum
Electrical Life: 40,000 operations minimum
Total Travel: .043" (1.1mm)

Materials & Finishes

Actuator/Plunger: Glass fiber reinforced polyamide
Case: Glass fiber reinforced polyamide
Moveable Contacts: Beryllium copper
Base: Glass fiber reinforced polyamide
Terminals: Brass with gold plating

Environmental Data

Operating Temperature Range: -40°C through +85°C (-40°F through +185°F)

Processing

Soldering: **Manual Soldering:** 390°C maximum for 4 seconds maximum
Reflow Soldering: Preheat temperature: 180°C ~ 200°C; Preheat time: 120 seconds; Heating temperature: 230°C; Heating time: 60 seconds; Peak temperature (surface): 250°C.
Cleaning: These devices are not process sealed. Hand clean locally using alcohol based solution.

Note: After soldering, use caution to prevent mechanical stress on the terminal area and to avoid warpage of the circuit board.

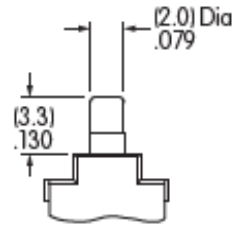
Option Selections

ACTUATORS

A

Plunger with No Cap

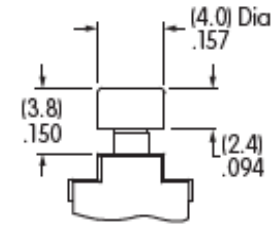
Plunger cannot be combined with cap



C

Plunger & Cap

Plunger may be combined with cap codes A, B or C



POLE & CIRCUIT

		Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematic
Pole	Model	Normal	Down	Normal	Down	
SP	GP0115AA					Note: Terminal numbers are not actually on the switch. SPST
SP	GP0115AC					Note: Terminal numbers are not actually on the switch. SPST

Typical Applications

- Designed for use in:
 - Communication Systems
 - IoT (Internet of Things)
 - Factory Automation
 - Medical
 - Military
 - Aviation





Summary

- Introduced the GP01 Series Ultra-Miniature Right Angle SMT Pushbutton switches
- Ultra-miniature size allows high density mounting and utilizes reduced space for surface mounting
- Cap and plunger are one unit, simplifying soldering and cleaning process.
- Switches may be purchased as all in one piece or with body and plunger only
- The GP01 Series has an operating life of 40,000 cycles minimum and an operating temperature range of -40°C through $+85^{\circ}\text{C}$ to meet harsh conditions.

Additional Resources

With over half of a century of passion for innovation, NKK has continued to elevate the standard for switch solutions while maintaining an unwavering emphasis on quality, stability and reliability.

For additional information visit the NKK Switches website:

www.nkkswitches.com

