

# Type 0651C/0651P

## Quick-acting Fuse Series (Low Breaking Capacity)

HF Pb 0651C/ 0651P Series, 5x20mm Glass Tube Quick-acting Fuse

RoHS Compliant

### Description

5x20mm Quick-acting low breaking capacity, glass tube body cartridge fuse designed, approved and refer to IEC 60127-2, standard sheet 2.

### Features

- Reference IEC standard 60127-2, sheet 2
- Wide operating temperature range
- Bulk and Tape packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = Pb  
HALOGEN FREE = HF

### Physical Specifications

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Materials | Body : Glass                                                                                                                                                           |
|           | Cap : Nickel Plated Brass Caps                                                                                                                                         |
|           | Leads : Tin Plated Copper                                                                                                                                              |
| Marking   | On Fuse :                                                                                                                                                              |
|           | "F", "Current Rating", "L", "250V",                                                                                                                                    |
|           | "bel", "Appropriate Safety Logos"                                                                                                                                      |
|           | On Label :                                                                                                                                                             |
|           | "bel", "0651C" or "0651P", "F", "Current Rating", "L", "Voltage Rating",<br>"Interrupting Rating", "Appropriate Safety Logos" and "RoHS", "CE" (China RoHS compliant). |



### Electrical Characteristics (Reference IEC-127-2)

| Rated Current | 1.5 In |      | 2.1 In |     | 2.75 In |     | 4 In |     | 10 In |
|---------------|--------|------|--------|-----|---------|-----|------|-----|-------|
|               | MIN    | MAX  | MIN    | MAX | MIN     | MAX | MIN  | MAX | MAX   |
| 500mA to 6.3A | 1      | 30   | 50     | 2   | 10      | 300 | 20   |     |       |
| 8A to 10A     | 1      | 30   | 50     | 2   | 10      | 400 | 40   |     |       |
|               | hr.    | min. | ms     | sec | ms      | ms  | ms   |     |       |

### Safety Agency Approvals

| Safety Agency | Safety Agency Certificate                                                        | Ampere Rating/ Voltage Rating | Ampere Range / Volt @ I.R. ability*                 |
|---------------|----------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------|
| CULUS         | E506667                                                                          | 500mA-10A /250V AC            | 500mA-10A/250V AC@35A or 10 In whichever is greater |
| TÜV           | J 50691095<br>Tested according to<br>EN 60127-1:2006+A1+A2<br>EN 60127-2:2014+A1 | 500mA-10A /250V AC            | 500mA-10A/250V AC@35A or 10 In whichever is greater |

\*I.R.= Interrupting Rating = Short Circuit Rating (Amps)

## Environmental Specifications

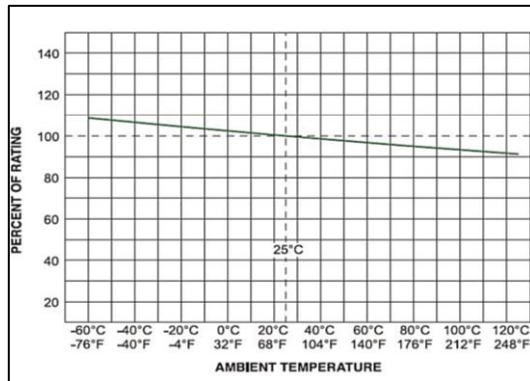
|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Shock Resistance          | MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform) |
| Vibration Resistance      | MIL-STD-202G, Method 201A (10-55 Hz, 0.06 inch, total excursion).                                |
| Salt Spray Resistance     | MIL-STD-202G, Method 101E, Test Condition B (48 hrs.)                                            |
| Insulation Resistance     | MIL-STD-202G, Method 302, Test Condition B (After Opening) 100,000 ohms minimum.                 |
| Solderability             | MIL-STD-202G, Method 208H                                                                        |
| Resistance to solder Heat | MIL-STD-202G, Method 210F, Test Condition B (260+/-5°C, 10+/-1 sec)                              |
| Thermal Shock             | MIL-STD-202G, Method 107G, Test Condition B (-65°C to +125°C).                                   |
| Operating Temperature     | -55°C to +125°C                                                                                  |
| Terminal Strength         | IEC-68-2-21                                                                                      |

## Electrical Specifications

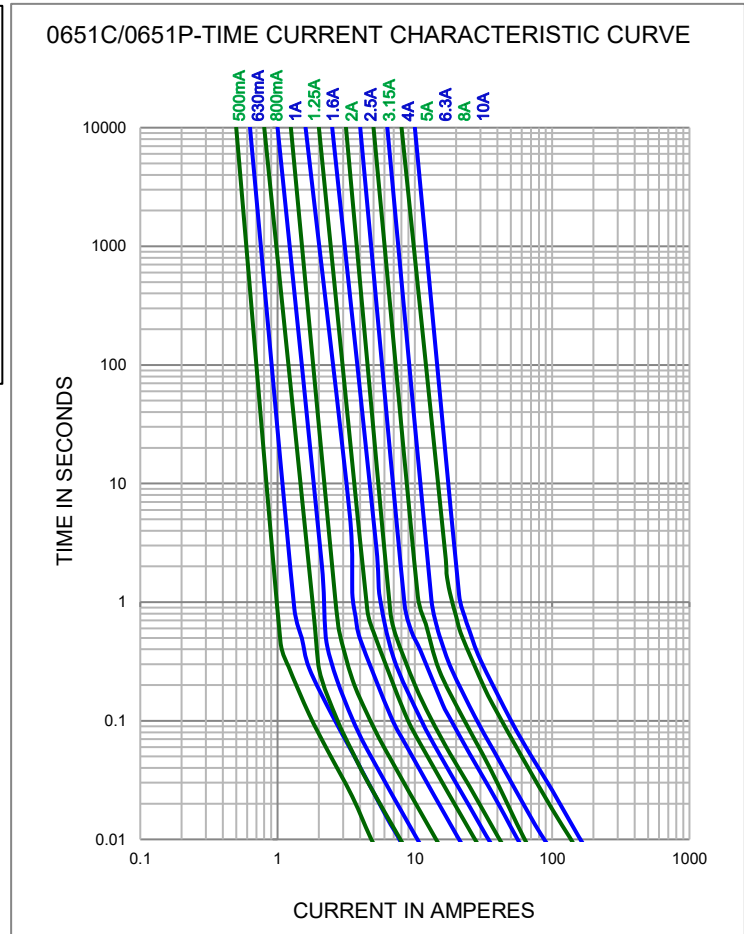
| Catalog Number | Ampere Rating | Typical Cold Resistance (ohms) | Volt-drop @100%In (Volt) Max. | Voltage and Interrupting Ratings                                                        | Melting I <sup>2</sup> T <10 mSec (A <sup>2</sup> Sec) | Maximum Power Dissipation (W) | Agency Approvals                                                                    |                                                                                     |
|----------------|---------------|--------------------------------|-------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                |               |                                |                               |                                                                                         |                                                        |                               |  |  |
| 0651C0500-XX   | 500mA         | 0.382                          | 0.330                         | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.230                                                  | 0.165                         | Y                                                                                   | Y                                                                                   |
| 0651P0500-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C0630-XX   | 630mA         | 0.225                          | 0.220                         |                                                                                         | 0.596                                                  | 0.138                         | Y                                                                                   | Y                                                                                   |
| 0651P0630-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C0800-XX   | 800mA         | 0.138                          | 0.160                         |                                                                                         | 0.614                                                  | 0.128                         | Y                                                                                   | Y                                                                                   |
| 0651P0800-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C1000-XX   | 1A            | 0.103                          | 0.140                         |                                                                                         | 1.09                                                   | 0.140                         | Y                                                                                   | Y                                                                                   |
| 0651P1000-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C1250-XX   | 1.25A         | 0.074                          | 0.130                         |                                                                                         | 2.04                                                   | 0.163                         | Y                                                                                   | Y                                                                                   |
| 0651P1250-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C1600-XX   | 1.6A          | 0.048                          | 0.110                         |                                                                                         | 4.40                                                   | 0.176                         | Y                                                                                   | Y                                                                                   |
| 0651P1600-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C2000-XX   | 2A            | 0.037                          | 0.100                         |                                                                                         | 7.50                                                   | 0.200                         | Y                                                                                   | Y                                                                                   |
| 0651P2000-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C2500-XX   | 2.5A          | 0.030                          | 0.100                         |                                                                                         | 11.76                                                  | 0.250                         | Y                                                                                   | Y                                                                                   |
| 0651P2500-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C3150-XX   | 3.15A         | 0.025                          | 0.100                         |                                                                                         | 17.12                                                  | 0.315                         | Y                                                                                   | Y                                                                                   |
| 0651P3150-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C4000-XX   | 4A            | 0.018                          | 0.100                         |                                                                                         | 31.46                                                  | 0.400                         | Y                                                                                   | Y                                                                                   |
| 0651P4000-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C5000-XX   | 5A            | 0.014                          | 0.100                         |                                                                                         | 40.18                                                  | 0.500                         | Y                                                                                   | Y                                                                                   |
| 0651P5000-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C6300-XX   | 6.3A          | 0.011                          | 0.100                         |                                                                                         | 75.78                                                  | 0.630                         | Y                                                                                   | Y                                                                                   |
| 0651P6300-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C8000-XX   | 8A            | 0.0077                         | 0.090                         |                                                                                         | 187.72                                                 | 0.720                         | Y                                                                                   | Y                                                                                   |
| 0651P8000-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |
| 0651C9100-XX   | 10A           | 0.0067                         | 0.090                         |                                                                                         | 257.07                                                 | 0.900                         | Y                                                                                   | Y                                                                                   |
| 0651P9100-XX   |               |                                |                               |                                                                                         |                                                        |                               | Y                                                                                   | Y                                                                                   |

Consult manufacturer for other ratings

## Temperature Derating Curve

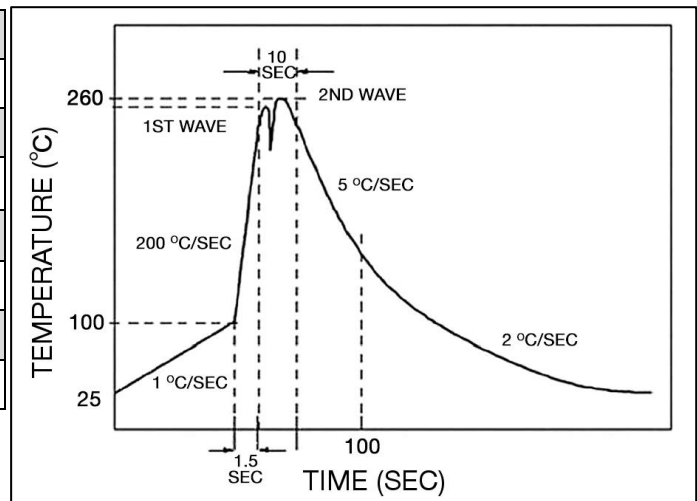


## Average Time Current Curve



## Soldering Parameters

| Lead-free Wave Soldering Profile                   |                                              |
|----------------------------------------------------|----------------------------------------------|
| Wave Soldering Parameter                           |                                              |
| Average ramp-up rate                               | 200°C / second                               |
| Heating rate during preheat                        | typical 1 - 2°C / second<br>Max 4°C / second |
| Final preheat temperature                          | within 125°C of soldering temperature        |
| Peak temperature $T_p$                             | 260°C                                        |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds                                   |
| Ramp-down rate                                     | 5°C / second max.                            |



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4 / 4

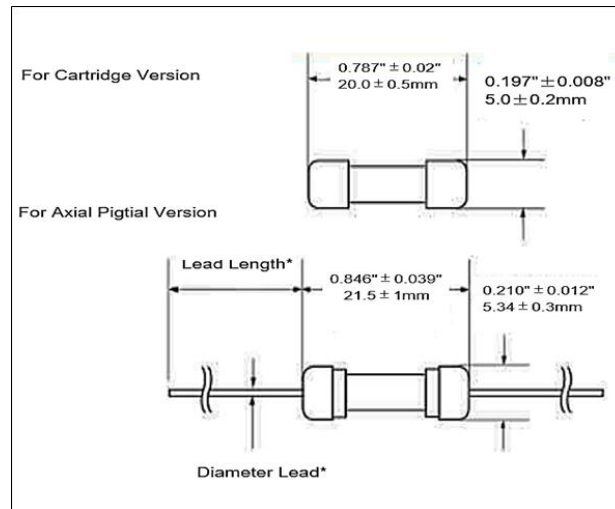
## Fuse FGNO Explanation

0651X [XXXX]-XX

0651C/P=0651C/P; [XXXX]=Ampere Rating; XX=See Ordering Information as below

| Milliamps | Bel FGNO[XXXX] | Amps | Bel FGNO[XXXX] | Amps | Bel FGNO[XXXX] |
|-----------|----------------|------|----------------|------|----------------|
| 500       | 0500           | 1.6  | 1600           | 5    | 5000           |
| 630       | 0630           | 2    | 2000           | 6.3  | 6300           |
| 800       | 0800           | 2.5  | 2500           | 8    | 8000           |
| 1         | 1000           | 3.15 | 3150           | 10   | 9100           |
| 1.25      | 1250           | 4    | 4000           |      |                |

## Mechanical Dimensions



## Ordering Information

**0651 X XXXX - XX**

**FUSE TYPE** \_\_\_\_\_  
0651= 0651 Series

**Mounting Tab Style** \_\_\_\_\_  
C = For Cartridge Version  
P = For Axial Pigtail Version

**AMPERE RATING** \_\_\_\_\_  
Refer to fuse FGNO explanation table

**PACKAGING & QUANTITY CODE** \_\_\_\_\_  
11 = Bulk 1000/box, For cartridge version  
13 = Bulk 500/box, For axial pigtail standard length  
16 = 1500/box Tape & Reel (pigtail version)

\*Ratings 6.3A and less have 0.032"±0.002" diameter lead, Lead length 1.5"±0.08".

\*Ratings 8A and above have 0.039"±0.002" diameter lead, Lead length 1.5"±0.08".

## Packaging

| Packaging Option             | Packaging Specification | Quantity | Packaging Code | Inside Tape Spacing |
|------------------------------|-------------------------|----------|----------------|---------------------|
| Bulk (Cartridge version)     | N/A                     | 1000     | 11             | N/A                 |
| Bulk (Axial Pigtail version) | N/A                     | 500      | 13             | N/A                 |
| Tape & Reel                  | N/A                     | 1500     | 16             | 10mm Pitch and 63mm |