

EOL – Last Buy Date is December 31, 2019  
The replacement series is the C1T(0685Txxxx-01)

## Type C1S

### Surface Mount Slow Blow Chip Fuse

HF  C1S Series – 1206 Size

RoHS 2 Compliant

#### Features

- Slow Blow
- Small size, 1206 SMD
- Current rating from 750mA to 5A
- Wide operating temperature range from -55°C to 125°C
- Tape and Reel for automatic SMD placement
- Compatible with 260°C IR Pb-free and wave soldering process
- RoHS 2 compliant (MSL = 1)
- Halogen Free
- Lead Free



#### Applications

- Notebook
- LCD monitor
- PC computer
- Office electronic equipment
- Industrial equipment
- Medical equipment
- POE, POE+
- LCD / LED monitor
- Power supply
- LCD / LED TV
- DC-DC Converter

LEAD FREE =   
HALOGEN FREE = 

#### Electrical Characteristics (UL STD.248-14)

| Testing Current | Blow Time |          |
|-----------------|-----------|----------|
|                 | Minimum   | Maximum  |
| 100%            | 4 Hrs.    | N/A      |
| 200%            | 1 Sec     | 120 Sec  |
| 300%            | 0.1 Sec   | 3 Sec    |
| 800%            | 0.002 Sec | 0.05 Sec |

#### Safety Agency Approvals

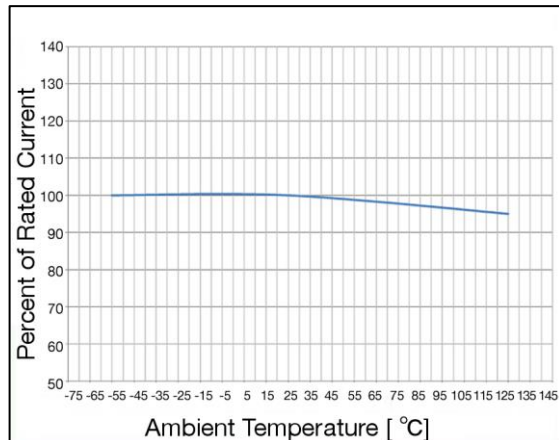
| Safety Agency                                                                       | Safety Agency Certificate | Voltage Rating (V)     | Ampere Range / Volt @ I.R. ability* |
|-------------------------------------------------------------------------------------|---------------------------|------------------------|-------------------------------------|
|  | E20624                    | 750mA-5A/<br>63V AC&DC | 750mA-5A/63V AC&DC@50A              |
| *I.R.= Interrupting Rating = Short Circuit Rating(Amps)                             |                           |                        |                                     |

#### Physical Specifications

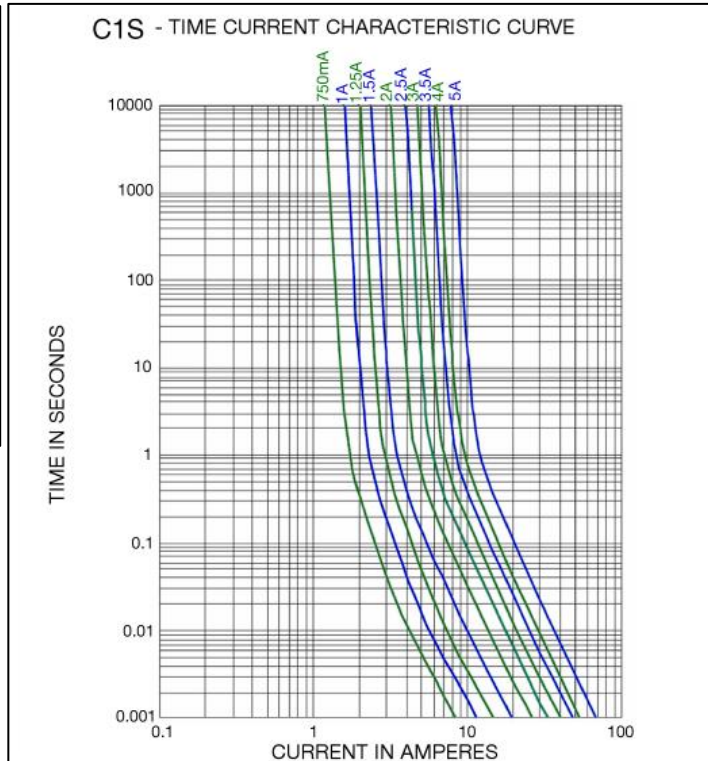
|           |                                                                                                                                                                                                                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Materials | Body : Ceramic Substrate                                                                                                                                                                                                                                                                                   |
|           | Terminations : Ag / Ni / Sn (100% Lead-free)                                                                                                                                                                                                                                                               |
|           | Element Cover Coating : Lead-free Glass                                                                                                                                                                                                                                                                    |
| Marking   | On Fuse :                                                                                                                                                                                                                                                                                                  |
|           | None                                                                                                                                                                                                                                                                                                       |
|           | On Label :                                                                                                                                                                                                                                                                                                 |
|           | "bel", "C1S", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and  ,  "(China RoHS compliant). |

## Type C1S

Temperature Derating Curve



Average Time Current Curve



## Electrical Specifications

| Catalog Number | Ampere Rating (A) | Nominal Cold Resistance (ohms) | Nominal Volt-drop @100% In (Volt) | Voltage and Interrupting Ratings                                                        | Melting I <sup>2</sup> T @10 In (A <sup>2</sup> Sec) | Nominal Power Dissipation @100% In (W) | Agency Approvals                                                                      |
|----------------|-------------------|--------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------|
|                |                   |                                |                                   |                                                                                         |                                                      |                                        |  |
| C1S 750        | 750mA             | 0.350                          | 0.333                             | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.01                                                 | 0.25                                   | Y                                                                                     |
| C1S 1          | 1A                | 0.285                          | 0.349                             |                                                                                         | 0.05                                                 | 0.35                                   | Y                                                                                     |
| C1S 1.25       | 1.25A             | 0.225                          | 0.346                             |                                                                                         | 0.14                                                 | 0.43                                   | Y                                                                                     |
| C1S 1.5        | 1.5A              | 0.182                          | 0.348                             |                                                                                         | 0.20                                                 | 0.52                                   | Y                                                                                     |
| C1S 2          | 2A                | 0.105                          | 0.254                             |                                                                                         | 0.26                                                 | 0.51                                   | Y                                                                                     |
| C1S 2.5        | 2.5A              | 0.072                          | 0.221                             |                                                                                         | 0.40                                                 | 0.55                                   | Y                                                                                     |
| C1S 3          | 3A                | 0.050                          | 0.182                             |                                                                                         | 0.83                                                 | 0.55                                   | Y                                                                                     |
| C1S 3.5        | 3.5A              | 0.040                          | 0.171                             |                                                                                         | 1.18                                                 | 0.60                                   | Y                                                                                     |
| C1S 4          | 4A                | 0.032                          | 0.160                             |                                                                                         | 2.05                                                 | 0.64                                   | Y                                                                                     |
| C1S 5          | 5A                | 0.022                          | 0.140                             |                                                                                         | 3.10                                                 | 0.70                                   | Y                                                                                     |

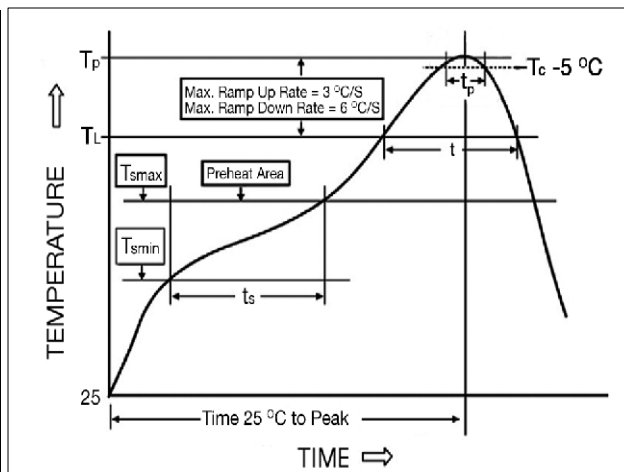
Consult manufacturer for other ratings

## Environmental Specifications

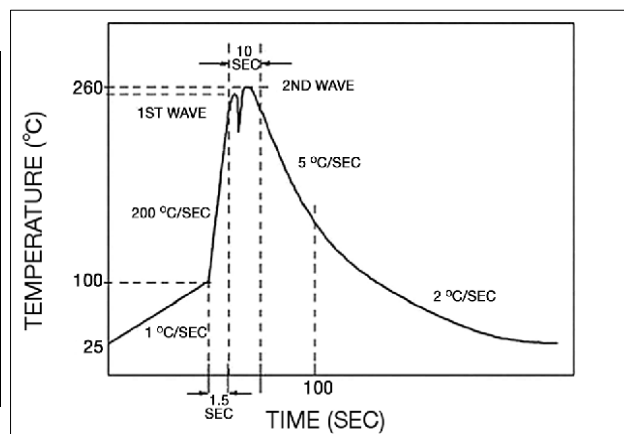
|                            |                                                                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock Resistance           | MIL-STD-202G, Method 213B, Test Condition 1<br>(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 A<br>(After Opening) 10,000 ohms minimum.                                                                |
| Solderability              | MIL-STD-202G, Method 208H                                                                                                                         |
| Resistance to solder Heat  | MIL-STD-202G, Method 210F, Test Condition C. Top Side (260°C, 20 sec)<br>MIL-STD-202G, Method 210F, Test Condition D. Bottom Side (260°C, 10 sec) |
| Thermal Shock              | MIL-STD-202G, Method 107G, Test Condition B (-65°C to +125°C).                                                                                    |
| Operating Temperature      | -55°C to +125°C                                                                                                                                   |
| Moisture Sensitivity Level | 1 (According to IPC J-Std-020)                                                                                                                    |

## Soldering Parameters

| IR Reflow Profile (IPC/JEDEC J-STD-020D)                                        |                 |
|---------------------------------------------------------------------------------|-----------------|
| <b>Preheat &amp; Soak</b>                                                       |                 |
| Temperature min ( $T_{smin}$ )                                                  | 150°C           |
| Temperature max ( $T_{smax}$ )                                                  | 200°C           |
| Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )                                     | 60-120 seconds  |
| Average ramp-up rate ( $T_{smax}$ to $T_p$ )                                    | 3°C/second max. |
| Liquidous temperature ( $T_L$ )                                                 | 217°C           |
| Time at liquidous ( $t_L$ )                                                     | 60-150 seconds  |
| Peak temperature ( $T_p$ )                                                      | 260°C max       |
| Time ( $t_p$ ) within 5°C of the specified classification temperature ( $T_c$ ) | 30 seconds      |
| Average ramp-down rate ( $T_p$ to $T_{smax}$ )                                  | 6°C/second max. |
| Time 25°C to peak temperature                                                   | 8 minutes max.  |



| 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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## Fuse FGNO Explanation

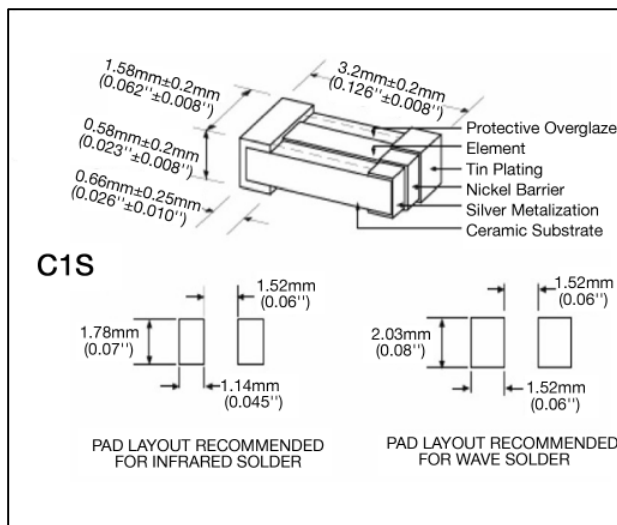
0685 - [XXXX] -XX

[XXXX]=Ampere Rating; XX=See Ordering Information as below

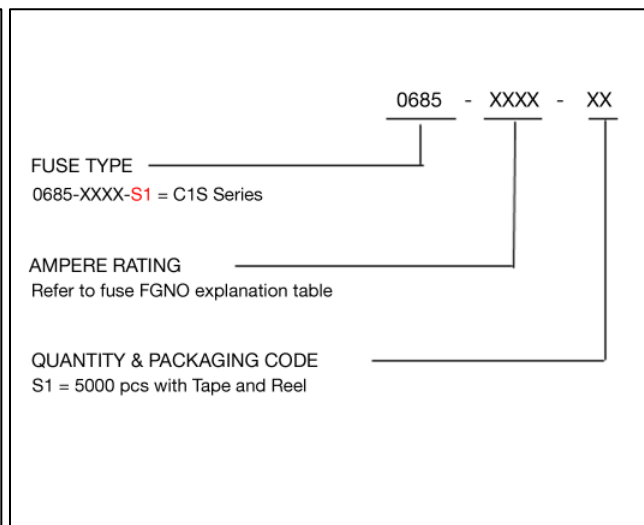
| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 3/4      | 0.750   | 750       | 0750           |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |

| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
| 1-1/2    | 1.50    | 1.5  | 1500           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 2.5  | 2500           |
|          | 3.0     | 3    | 3000           |
| 3-1/2    | 3.5     | 3.5  | 3500           |
|          | 4.0     | 4    | 4000           |
|          | 5.0     | 5    | 5000           |

## Mechanical Dimensions



## Ordering Information



## Packaging

| Packaging Tape & Reel                      | Packaging Specification | Quantity | Quantity & Packaging Code |
|--------------------------------------------|-------------------------|----------|---------------------------|
| 8 mm wide tape with 7 inches Diameter reel | EIA Standard 481-E      | 5000     | 0685-XXXX-S1              |



Specifications subject to change without notice

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