

# Type C1Q

## Surface Mount Very Fast-Acting Chip Fuse

**HF** **Pb** C1Q Series - 1206 Size

RoHS 6 Compliant

### Features

- Fast Acting
- Small size, 1206 SMD
- Current rating from 250mA to 7A
- Wide operating temperature range from -55 °C to 125 °C
- Tape & Reel for automatic SMD placement
- Compatible with 260°C IR Pb-free and wave soldering process
- RoHS 6 compliant (MSL = 1)
- Halogen Free
- Leadfree

### 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 = **Pb**  
 HALOGEN FREE = **HF**



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

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 Hrs.	N/A
200%	N/A	5 Sec
300%	N/A	0.2 Sec

### Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
<b>SP</b>	LR39772	250mA - 5A / 125V AC 63V DC 7A / 63V AC & DC	250mA - 5A / 125V AC @ 100A 63V DC @ 50A
<b>UL</b>	E20624		
<b>RU</b>	E20624		

\* 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", "C1Q", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "♻️", "♻️" (China RoHS compliant).

Specifications subject to change without notice



Bel Fuse Inc. +1 201.432.0463  
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 Jersey City, NJ 07302 USA [belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

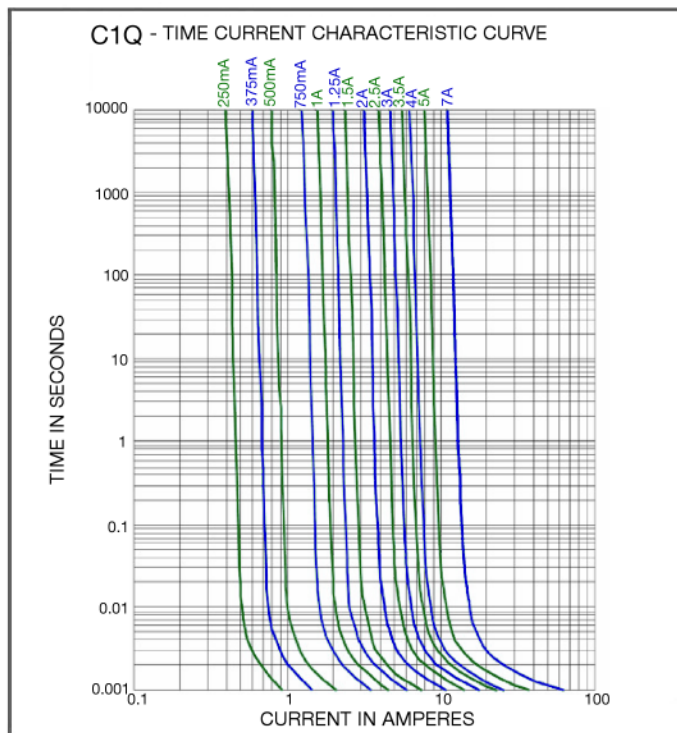
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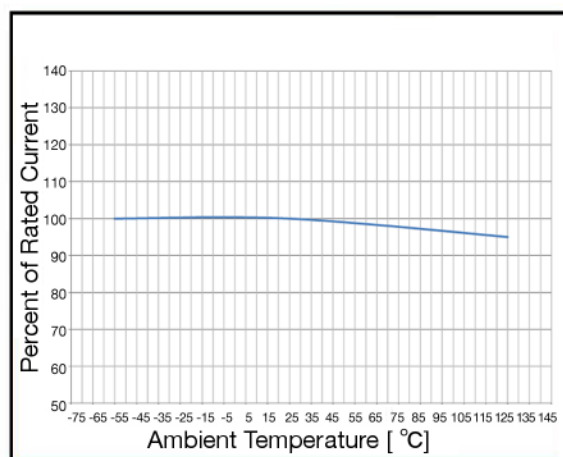
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Average Time Current Curve



Temperature Derating Curve



### Electrical Specifications

Catalog Number	Ampere Rating (A)	Nominal Cold Resistance (ohm)	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		
							UL	CSA	SP
C1Q 250	250mA	0.85	0.250	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.00003	0.06	Y		Y
C1Q 375	375mA	0.48	0.222		0.00006	0.08	Y		Y
C1Q 500	500mA	0.32	0.195		0.00011	0.10	Y		Y
C1Q 750	750mA	0.175	0.163		0.00042	0.12	Y		Y
C1Q 1	1A	0.124	0.156		0.00096	0.16	Y		Y
C1Q 1.25	1.25A	0.092	0.149		0.0020	0.19	Y		Y
C1Q 1.5	1.5A	0.075	0.142		0.0024	0.21	Y		Y
C1Q 2	2A	0.054	0.140		0.005	0.28	Y		Y
C1Q 2.5	2.5A	0.042	0.138		0.008	0.35	Y		Y
C1Q 3	3A	0.035	0.136		0.020	0.41	Y		Y
C1Q 3.5	3.5A	0.030	0.140		0.029	0.49	Y		Y
C1Q 4	4A	0.028	0.144		0.038	0.58	Y		Y
C1Q 5	5A	0.022	0.154		0.075	0.77	Y		Y
C1Q 7	7A	0.015	0.160		0.116	1.12		Y	

Consult manufacturer for other ratings

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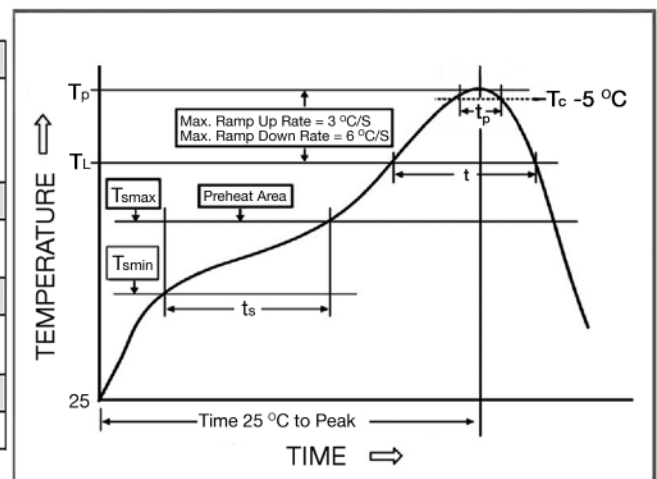
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### Environmental Specifications

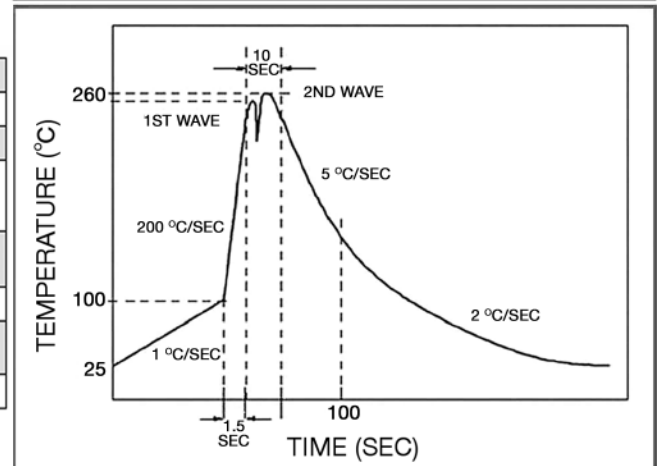
Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform)
Vibration Resistance	MIL-STD-202G, Method 201A(10-55 Hz,0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test Condition B(48 hrs).
Insulation Resistance	MIL-STD-202G, Method 302, Test Condition A (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) 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 <sub>smin</sub> )	150 °C
Temperature max (T <sub>smax</sub> )	200 °C
Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	60 -120 seconds
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3 °C/second max.
Liquidous temperature (T <sub>L</sub> )	217 °C
Time at liquidous (t <sub>L</sub> )	60 - 150 seconds
Peak temperature (T <sub>p</sub> )	260 °C max
Time (t <sub>p</sub> ) within 5 °C of the specified classification temperature (T <sub>c</sub> )	30 seconds
Average ramp-down rate (T <sub>p</sub> to T <sub>smax</sub> )	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 Max 4 °C / second
Final preheat temperature	within 125 °C of soldering temperature
Peak temperature T <sub>p</sub>	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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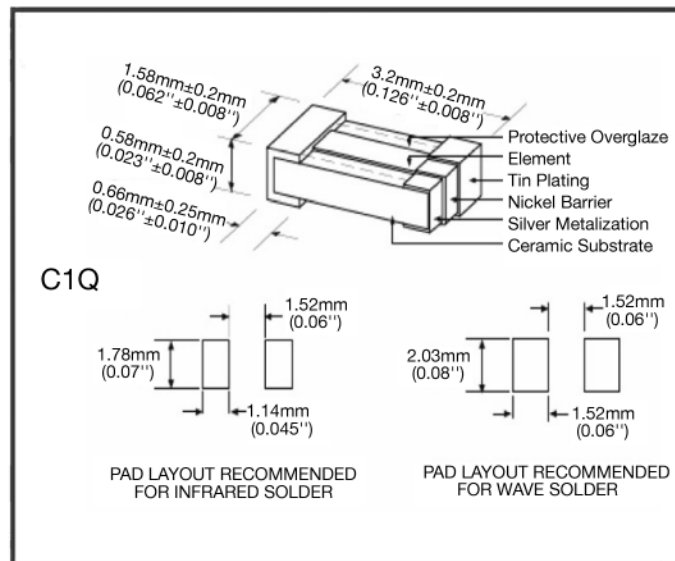
### Fuse FGNO Explanation

0685 - [XXXX] - XX

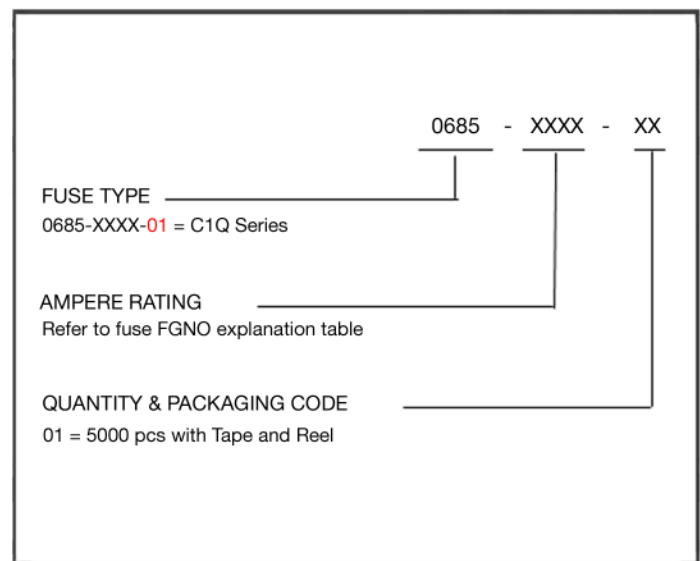
[XXXX]=Ampere Rating; XX=See Ordering Information as below

Fraction	Decimal	Milliamps	Bel FGNO[XXXX]	Fraction	Decimal	Amps	Bel FGNO[XXXX]
1/4	0.250	250	0250		1.0	1	1000
3/8	.375	375	0375	1-1/4	1.25	1.25	1250
1/2	.500	500	0500	1-1/2	1.50	1.5	1500
3/4	.750	750	0750		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
					7.0	7	7000

### 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-01

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