

Type C2Q

Surface Mount Very Fast-Acting Chip Fuse

HF  C2Q Series – 0603 Size

RoHS 2 Compliant

Features

- Fast-acting
- Small size, 0603 SMD
- Current rating from 250mA 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%	N/A	5 Sec
300%	N/A	0.2 Sec

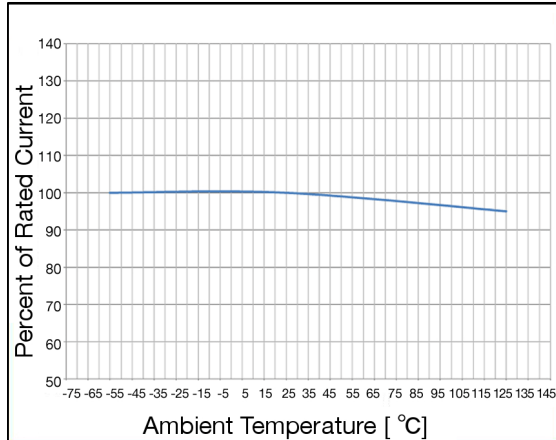
Safety Agency Approvals

Safety Agency	Safety Agency Certificate	Voltage Rating (V)	Ampere Range / Volt @ I.R. ability*
	E20624	250mA-4A/32V AC 63V DC	250mA-4A/32V AC @ 35A 63V DC @ 50A
		5A / 32V AC & DC	5A / 32V AC & DC @ 50A
*I.R.= Interrupting Rating = Short Circuit Rating(Amps)			

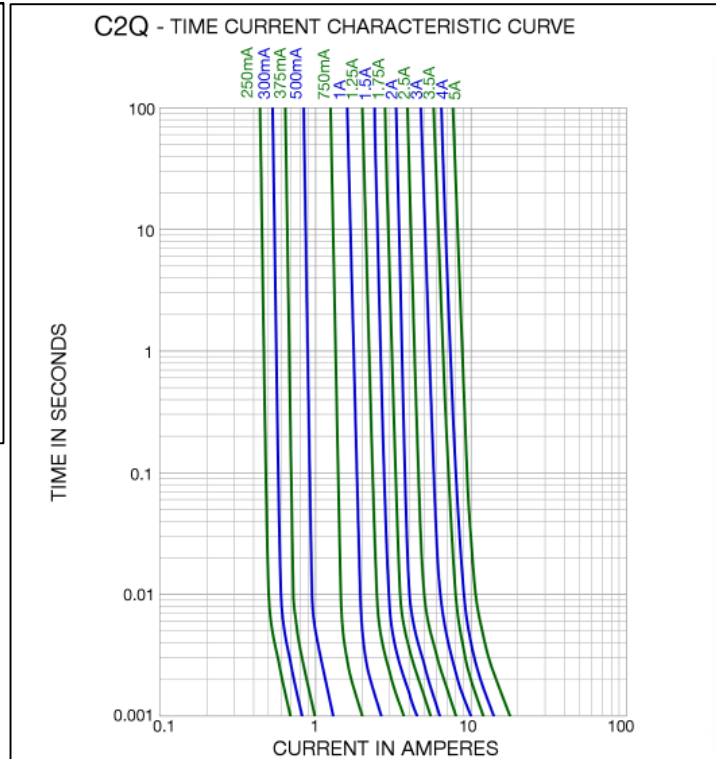
Physical Specifications

Materials	Body : Ceramic Substrate
	Terminations : Ag / Ni / Sn (100% Lead-free)
	Element Cover Coating : Lead-free Glass
Marking	On Fuse :
	None
	On Label :
	"bel", "C2Q", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and   "(China RoHS compliant)." 

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	Nominal Melting I ² T @10 In (A ² Sec)	Nominal Power Dissipation @100% In (W)	Agency Approvals
							 US
C2Q 250	250mA	0.77	0.243	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.00001	0.06	Y
C2Q 300	300mA	0.54	0.217		0.00003	0.07	Y
C2Q 375	375mA	0.42	0.196		0.00004	0.07	Y
C2Q 500	500mA	0.28	0.171		0.00015	0.09	Y
C2Q 750	750mA	0.17	0.159		0.0005	0.12	Y
C2Q 1	1A	0.122	0.154		0.0010	0.15	Y
C2Q 1.25	1.25A	0.092	0.152		0.0018	0.19	Y
C2Q 1.5	1.5A	0.073	0.146		0.0025	0.22	Y
C2Q 1.75	1.75A	0.063	0.144		0.0044	0.25	Y
C2Q 2	2A	0.053	0.133		0.0063	0.27	Y
C2Q 2.5	2.5A	0.042	0.130		0.0074	0.33	Y
C2Q 3	3A	0.034	0.130		0.018	0.39	Y
C2Q 3.5	3.5A	0.028	0.131		0.021	0.46	Y
C2Q 4	4A	0.023	0.131		0.042	0.52	Y
C2Q 5	5A	0.019	0.131		0.055	0.66	Y

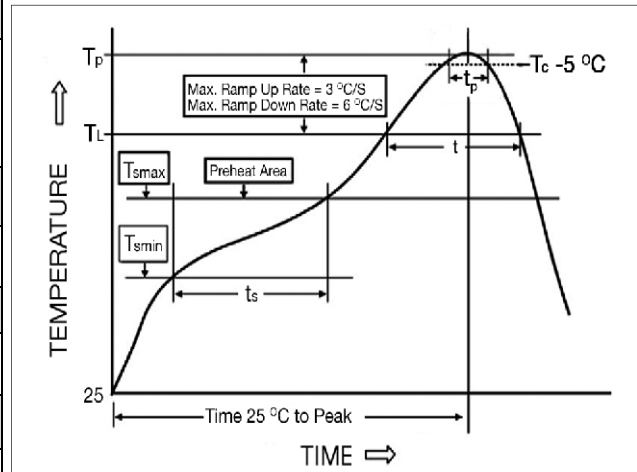
Consult manufacturer for other ratings

Environmental Specifications

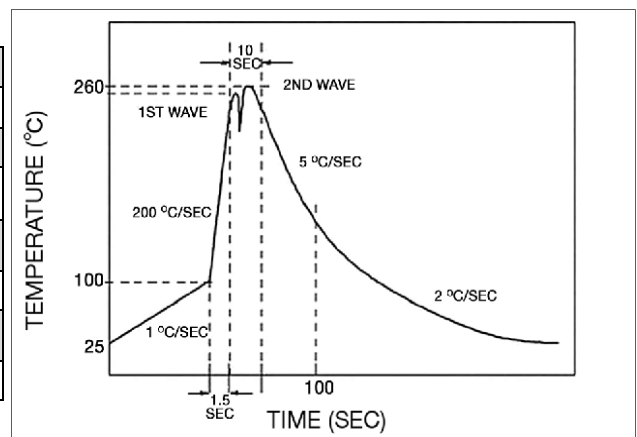
Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform)
Vibration Resistance	MIL-STD-202G, Method 201A (10-55 Hz, 0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test Condition B (48 hrs.).
Insulation Resistance	MIL-STD-202G, 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)	
Preheat & Soak	
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 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.



Type C2Q

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Fuse FGNO Explanation

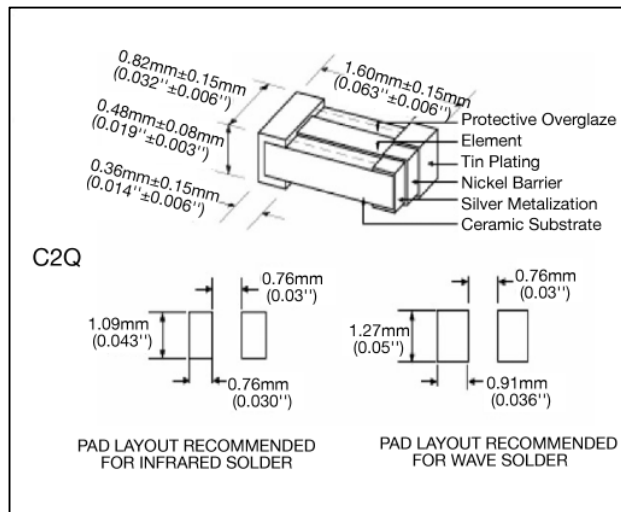
0686 - [XXXX] -XX

0686=C2Q; [XXXX]=Ampere Rating; XX=See Ordering Information as below

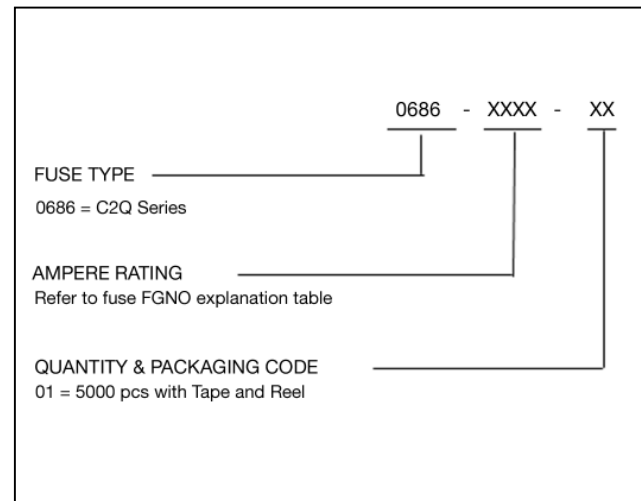
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/4	0.250	250	0250
3/10	.300	300	0300
3/8	.375	375	0375
1/2	.500	500	0500
3/4	.750	750	0750

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
	1.75	1.75	1750
	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	0686-XXXX-01



Specifications subject to change without notice

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