

## SPECIFICATION AND PERFORMANCE

Series	217B-BC02	File	217B-BC02_spec_1	Date	2018/ 09/ 10
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### Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of 217B-BC02

### Performance and Descriptions:

The product is designed to meet the electrical, mechanical and environmental performance requirements specification. Unless otherwise specified, all tests are performed at ambient environmental conditions.

### RoHS:

All material in according with the RoHS environment related substances list controlled.

MATERIAL AND FINISH		
INSULATOR	Material	LCP, UL94V-0, Black
CONTACT	Material	Copper Alloy
	Plating	Contact Area: 5u" min. Gold Plating Solder Tails: 100u" min. Tin Plating Under-Plate: 50u" min. Nickel Plating
SHELL	Material	Stainless Steel 304
	Plating	50u"~ 100u" Ni
SHIELD	Material	Stainless Steel 301
	Plating	Tin plating over Nickel
RATING	Operation Voltage: 5V Current Rating: 5A Max. Temperature Range: -55°C to + 85°C	

ELECTRICAL	
Item	Requirement & Test Condition
Contact Resistance	1. 40mΩ (Max) initial for VBUS, GND and all other contacts. 2. Maximum change (Delta) of +10mΩ after environmental stresses. 3. Measure at 20mV (Max) open circuit at 100mA.  (EIA 364-23B)

Insulation Resistance	A minimum of 100MΩ insulation resistance is required between adjacent contacts of unmated and mated connectors.  (EIA 364-21)
Dielectric Withstanding Voltage	No breakdown shall occur when 100VAC (RMS) is applied between adjacent contacts of unmated and mated connectors.  (EIA 364-20)
Current Rating	A current of 5.0A shall be applied collectively to VBUS pins (i.e., pins A4, A9, B4, and B9) and 1.25A applied to the VCONN pin (i.e., B5 of the plug connector) with the return path through the corresponding GND pins (i.e., pins A1, A12, B1, and B12).. A minimum current of 0.25 A shall also be applied individually to all the other contacts. When the currents are applied to the contacts, the temperature rise shall not exceed 30°C at any point on the USB Type-C mated plug and receptacle under test, when measured at an ambient temperature of 25°C.  (EIA 364-70, Method 2)

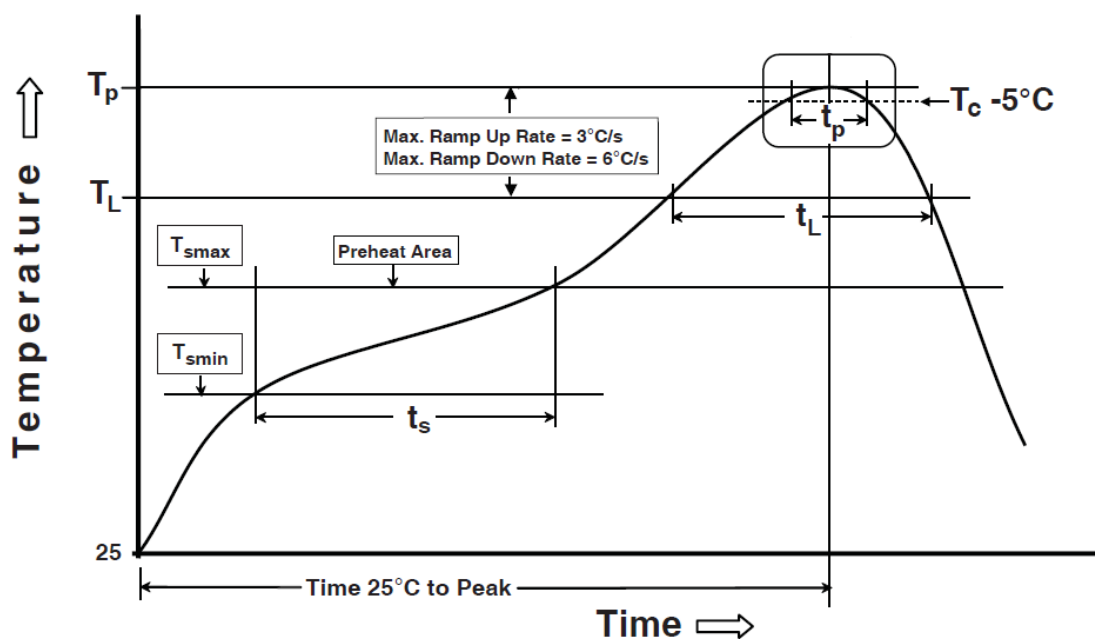
<b>MECHANICAL</b>	
Item	Requirement & Test Condition
Mating Cycle	The durability rating shall be 10,000 cycles minimum for the USB Type-C connector family. The durability test shall be done at a maximum rate of 200 cycles per hour and no physical damage to any part of the connector and cable assembly shall occur.)  (EIA 364-09)
Total Insertion Force	The initial connector insertion force shall be within the range from 5N to 20N at a maximum rate of 12.5mm (0.492") per minute. This requirement does not apply when the connectors are used in a docking application  (EIA 364-13)
Total Withdrawal Force	The connector extraction force shall be within the range of 8 N to 20 N up to 1,000 mating cycles and within the range of 6 N to 20 N after the specified insertion/extraction or durability cycles (at a maximum rate of 12.5 mm (0.492") per minute). This requirement does not apply when the connectors are used in a mechanical docking application.  (EIA 364-13)
Durability or Insertion/Extraction Cycles	The durability rating shall be 10,000 cycles minimum for the USB Type-C connector family. The durability test shall be done at a maximum rate of 200 cycles per hour and no physical damage to any part of the connector and cable assembly shall occur.  Durability – 1000 cycles (Normal) → 1500 cycles (Normal) → 2500 cycles (Reverse) → 2500 cycles (Normal) → 2500 cycles (Reverse)

	(EIA 364-09)
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ENVIRONMENTAL	
Item	Requirement & Test Condition
Humidity test	25~65°C in temperature and 90~95% RH for 48 hours. After testing connector shall be left alone for 1 to 2 hours in a room ambient. No damage, electrical shall be satisfied.
Salt mist test	Similar to MIL-STD-1344, Method 1001.1, condition B Salt concentration: 5% Test time: Shell: 24±2 hours Contact gold plating area: 8±2 hours Temperature: 35±2°C After salt is removed by running water and a drop is removed, it is measured. No damage, electrical shall be satisfied.
Thermal shock	-55°C to +85°C, 15 minutes at each temperature and 10 cycles No breaking insulation

SOLDER ABILITY		
Item	Requirement	Test Condition
Solder ability	95% of immersed area must show no voids, Pinholes	Soldered at temperature 255°C±5°C For immersion duration 5 Sec.

## Reflow Profile



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Profile Feature	Pb-Free Assembly
Preheat/ Soak	
Temperature Min ( $T_{smin}$ )	150°C
Temperature Max ( $T_{smax}$ )	200°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Ramp-up rate ( $T_L$ to $T_p$ )	3°C/ second max.
Liquidous temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained above $T_L$	60-150 seconds
Peak package body temperature ( $T_p$ )	260°C
Time ( $t_p$ )* within 5°C of specified classification temperature ( $T_c$ )	30 seconds
Ramp-down rate ( $T_p$ to $T_L$ )	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

( According to IPC/JEDEC J-STD-020D.1 March 2008 STANDARD )