

## SPECIFICATION AND PERFORMANCE

<b>Series</b>	<b>115Q-BCAO</b>	<b>File</b>	<b>115Q-BCAO_SPEC_2</b>	<b>Date</b>	<b>2021/01/21</b>
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### Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of **115Q-BCAO**

### 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.

### MATERIALS

NO.	PART NAME	DESCRIPTION
1	HOUSING	LCP E130i, UL94V-0, Black
2	CONTACT	C5210R-H, 0.12t, 5u" min gold on contact area, 1u" min gold on tail area, under plated: 50u" min nickel
3	SPRING	SWP-B, 0.20d, 65u" min nickel Plating over all
4	CRANK	SUS304, 0.35d
5	SHELL	SUS304CSP-3/4H, 0.15t, 50u" min nickel plated
6	SLIDER	LCP E130i, UL94V-0, Black

### RATING

Rated Voltage	10V DC/AC
Rated Current	0.5A DC/AC
Operating Temperature	-40~+85°C
Storage Temperature	-40~+85°C
Durability	5000 CYCLES

### ELECTRICAL

Item	Requirement	Test Condition
Contact Resistance (Low level)	Contact terminals: 100mΩ max. Switch terminals: 140mΩ max.	Subject mated contacts assembled in housing to 20mV max., Open circuit at 10mA. Refer to Figure 1
Insulation Resistance	1000MΩ min. initial 100MΩ min. after test	Impressed voltage 500V DC for 1 minute. Test between adjacent circuit EIA364-21
Dielectric Withstanding	No creeping discharge nor	500V AC for 1 minute. Test between adjacent



Voltage	flash over shall occur. Current leakage: 1mA max.	circuit. EIA364-20
Temperature Rise	30°C max. under loaded rating current	The contacts shall be wired in series and apply rated current. Measure the temperature rising on contact.

### MECHANICAL

Item	Requirement	Test Condition
Durability	Max. change from initial contact resistance 40mΩ max. no physical damage to connector shall occur	Cycle rate: 400 to 600 cycles per hour No. of cycle: 5,000 cycles. EIA 364-09
Insertion Force	1.0kgf (10N)Max	Measure the module card insertion force at 25±3mm/min. EIA364-13
Withdrawal Force	0.05kgf (0.5N) Min.	Measure the mated module card extraction force from the socket at 25±3mm/min. EIA364-13
Mechanical Shock	Max. Change from initial contact Resistance 40 mΩ Max no electrical discontinuity greater than 100nsec. shall occur	Accelerated Velocity: 50 G (490 m/sec <sup>2</sup> ) Waveform: Semi Sine Duration: 11 m sec. No of Shocks: 6/dir., 3 axis, ( total of 18 Shocks), EIA364-27
Vibration	Max. Change from initial contact Resistance 40 mΩ Max no electrical discontinuity greater than 100nsec. shall occur	Frequency Range: 10-55-10 Total Amplitude: 1.52 mm p-p or 9.81m/sec <sup>2</sup> . Duration: 2 hours tree axes( 6 hours in total ) EIA364-28

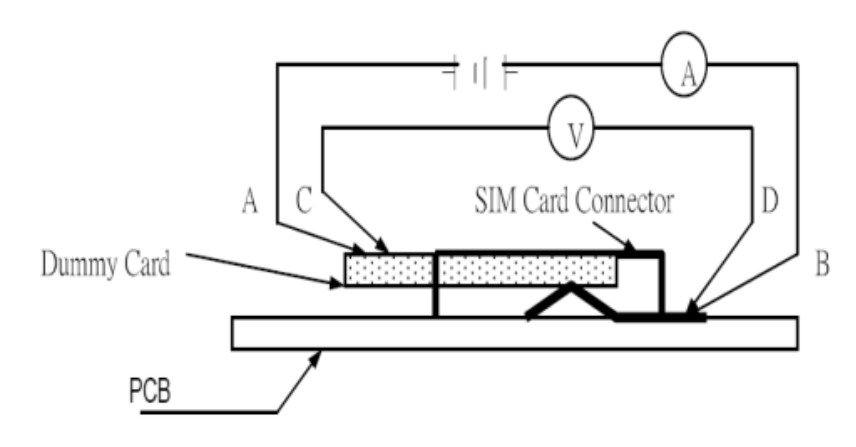
### ENVIRONMENTAL

Item	Requirement	Test Condition
Humidity-Thermal Cycling	Max. Change from initial contact Resistance 40 mΩ Max Insulation Resistance: 1000 MΩ Min. initial 100 MΩ Min. after test No physical damage to connector shall occur.	Ambient Temp.: 25 to 60°C Relative humidity: 90 to 95 % Duration: 10 cycles EIA364-31
Thermal Shock	Max. Change from initial contact Resistance 40 mΩ Max No physical damage to connector shall occur.	Temperature Range: -55 to 85°C No. of Cycles: 5 cycles for 30 minutes EIA364-32
Temperature Life	Max. Change from initial	Chamber Temperature: 85±2°C

	contact Resistance 40 mΩ Max No physical damage to connector shall occur.	Duration: 250 hours EIA364-17
Low Temperature Resistance	Max. Change from initial contact Resistance 40 mΩ Max No physical damage to connector shall occur.	Chamber Temperature: - 40±2°C  Duration: 96 hours  Dummy card engaged during test EIA364-59
Salt Spray Test	Max. Change from initial contact Resistance 40 mΩ Max No physical damage to connector shall occur.	Salt Solution: 5±1.0% Length of Test: 48 hours Dummy card engaged during test EIA364-26

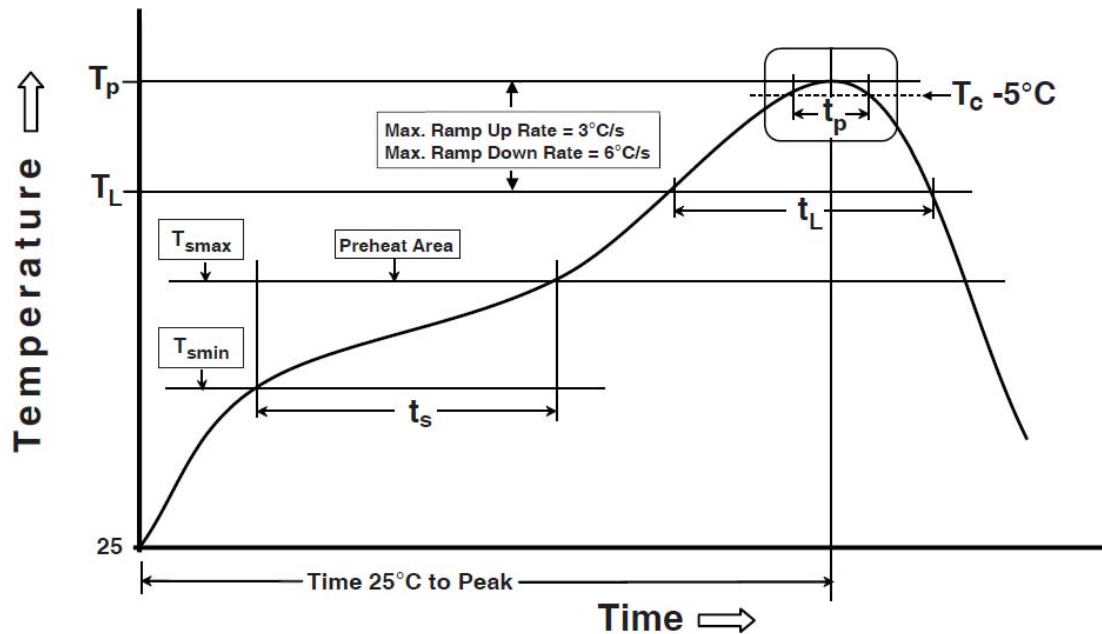
SOLDER ABILITY		
Item	Requirement	Test Condition
Solder ability	Wet Solder Coverage: 95% Min.	Solder Temperature: 245±3°C Immersion Duration: 3 ±0.5 sec. Solder: Sn-3Ag-0.5Cu Flux: RMA 25%
Solder-Heat Resistance	No evidence of deformation or fusion of housing and no physical damage after test.	Refer to Reflow Profile

**FIGURE I: CONTACT RESISTANCE**





## Reflow Profile



Preheating temperature: 150 ~ 200°C, 60~120 seconds

Liquidus temperature ( $T_L$ ): 217°C, 60~150 seconds

Peak temperature: 260°C

Time within 5 °C of peak temperature ( $T_c$ ): 255°C, 30seconds

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