

MUSB Rugged USB

Product Specification S6046C Rev 1.3

Amphenol

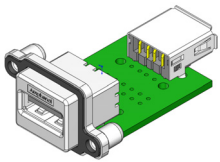
Now you're connected!

About Amphenol Commercial Products

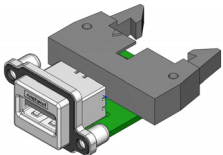
Amphenol's commercial connector products are used in a variety of end user applications including networking, telecom, server & computer, storage & HDD, consumer electronics and entertainment, professional audio & Industrial & Military/Aerospace.

Related Products

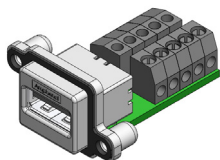
With matching USB



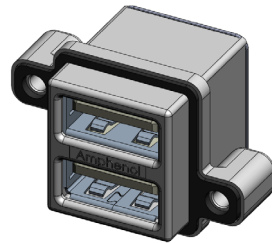
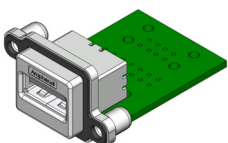
With Cable Header



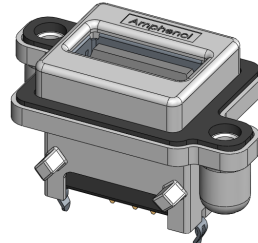
With Terminal Block



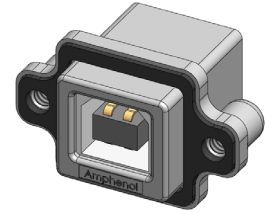
With PCB for wiring



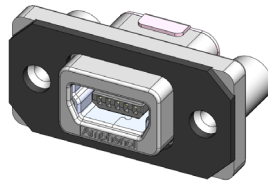
MUSB-C111-30
SERIES A, RIGHT
ANGLE, STACKED



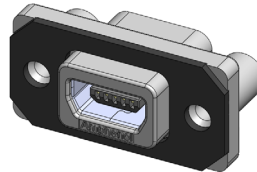
MUSB-A511-00
SERIES A,
VERTICAL



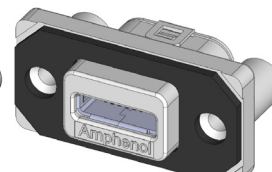
MUSB-D111-30
SERIES B,
RIGHT ANGLE



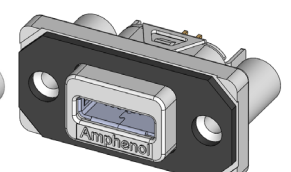
MUSB-B151-34
SERIES MINI-B,
RIGHT ANGLE



MUSB-E151-04
SERIES MINI-AB,
RIGHT ANGLE



MUSB-K152-X0
SERIES MICRO-AB,
RIGHT ANGLE



MUSB-K552-X0
SERIES MICRO-AB,
VERTICAL

Overview

This Product Specification defines the general use and performance parameters for Amphenol's MUSB series of connector.

Availability: Series A (single & stacked), series B, series Mini-B, series Mini-AB, series Micro-AB with right angle and vertical PCB tails. Right angle connectors mounted on a PCB with matching USB, cable headers or terminal blocks are available for all series. Dust covers for enhanced mating area protection are also available.

Usage

These connectors meet military shock & vibration levels and are IP67 rated per IEC 60529 in mated and unmated conditions. The connector system is designed to provide a standard USB interface for enclosures exposed to harsh environments. Connectors mate with any standard USB 2.0 plug. Connectors achieve data rates of up to 480 Mb/s (USB 2.0).

Applications

Intended for use in applications such as:

- Medical equipment
- Microwave transmitters
- GPS, positioning equipment
- Military vehicles, radios, computers
- Test equipment
- Mobile entertainment systems
- Traffic control & monitoring systems

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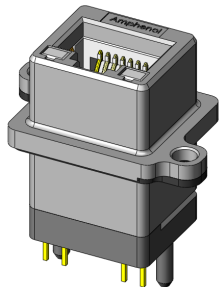
Related Products

MDB

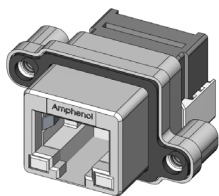


9 POSITION CONNECTOR SHOWN

MRJ



MRJ-5480-01 SHOWN VERTICAL, PCB TAIL, 8 POSITION RJ45



MRJ-5380-01 SHOWN RIGHT ANGLE, PCB TAIL, 8 POSITION RJ45

Connector Electrical Characteristics

Parameter	Series A & B	Series Mini-B & Mini-AB	Series Micro-AB
Current Rating:	1.5A per contact	1.0A per contact	Up to 1.8A per contact (see dwg)
Contact Resistance:	30 mΩ max	50 mΩ max	30 mΩ max
Insulation Resistance:	1000 MΩ min	100 MΩ min	100 MΩ min
DWV:	500V AC @ sea level	100V AC @ sea level	100V AC @ sea level

Connector Mechanical Characteristics

Thermal Shock: 5 cycles @ -40° to +125° C
 Physical Shock: Per EIA364-27 Condition H (11ms 30G)
 Humidity: Per EIA364-31 Condition C, Method III
 Vibration: Per EIA364-28 per Condition V, Letter A
 Salt Spray: Per EIA364-26, 250 Hrs

Process Characteristics

Recommended Soldering Process: Hand or wave soldering peaked at 260°C for 8 seconds max.
 Recommended Torque for #4-40 or M3 Panel Mount Screws: 0.45 to 0.65 Nm (4 – 5.75 in-lbs).
 Recommended Torque for #2-56 or M2.5 Panel Mount Screws: 0.23 to 0.34 Nm (2 - 3 in-lbs).
 Solder tails suitable for PCB thickness of 1.52mm (.062”).
 Mating Cycles: 1500 (Series A & B)
 5000 (Series Mini-B & Mini-AB)
 10000 (Series Micro-AB)

Material Requirements

MUSB connectors are RoHS compliant.

Unless otherwise specified, the materials for each component shall be:

- Contacts: Phosphor Bronze with 30μ” (0.76μm) min Gold over 50μ” (1.27μm) min Nickel
- Housing: Engineering thermoplastic, UL94V-0 rated, black. White for series B.
- Shell: Die-cast Zinc alloy, Nickel plating

Temperature rise: Meets the requirement of 30° C ΔT

Operating temperature -40° to +105° C

Available Documents

Drawing Numbers:

P-MUSB-A211-XX	MUSB Rugged Series A, R/A on PCB with R/A Cable Header, Thread & Dust Cover Options
P-MUSB-A511-XX	MUSB Rugged Series A, Vertical PCB Mount
P-MUSB-B151-XX	MUSB Rugged Series Mini-B, Right Angle PCB Tail
P-MUSB-CA11-XX	MUSB Rugged Series A, Stacked, Right Angle on PCB, Thread & Dust Cover Options
P-MUSB-D411-3X	MUSB Rugged Series B, Right Angle on PCB with Terminal Block
P-MUSB-E151-XX	MUSB Rugged Series Mini-AB, Right Angle PCB Tail, Thread & Dust Cover Options
P-MUSB-K152-X0	MUSB Rugged Series Micro-AB, Right Angle PCB Tail, Thread & Dust Cover Options
P-MUSB-K552-XX	MUSB Rugged Series Micro-AB, Vertical PCB Tail, Thread & Dust Cover Options

Contact factory, authorized Amphenol representative or website www.amphenolcanada.com for additional configurations.

Quality Test Reports

QTR9300377	Series Mini-B & Mini-AB
QTR9300378	Series A & B
QTR9300482	Series Micro-AB

Now you're connected!

Product Numbering System

MUSB		X	X	X	X	X	X	X	X
MUSB	Rugged USB Receptacle, Generation 1								
	Receptacle Type Per USB 2.0								
	A – Standard A Series								
	B – Mini B Series								
	C – Standard A Series Stacked								
	D – Standard B Series								
	E – Mini AB Series								
	K – Micro AB Series ¹								
	Termination Style								
	1 – Right Angle								
	2 – Right Angle on PCB with Right Angle Cable Header ²								
	3 – Right Angle on PCB with Right Angle Matching USB Type Connector ²								
	4 – Right Angle on PCB with Terminal Blocks ²								
	5 – Vertical ²								
	8 – Right Angle on PCB with Vertical Cable Header ³								
	A – Right Angle on PCB with Holes for Wiring (Style 3 PCB) ^{2, 4}								
	B – Right Angle on PCB with Vertical Single Row Isolated Header ⁵								
	D – Right Angle on PCB with Vertical Dual Row Isolated Header ⁶								
	E – Right Angle on PCB with Vertical Matching USB Type Connector ⁷								
	Number of Contacts								
	1 - Standard 4 per Port for Types A, C & D								
	5 - Standard 5 per Port for Types B, E & K								
	Insulator Housing Colour								
	1 – Black for Types A, B, C & E, White for Type D								
	2 – Grey for Type K								
	Rear Shield and Thread Options^{8, 9}								
	0 – No Rear Shield, Unified Thread								
	3 – With Rear Shield, Unified Thread								
	M – With Rear Shield, Metric Thread								
	N – No Rear Shield, Metric Thread								
	Dust Cover Options¹⁰								
	0 – With No Dust Cover ¹¹								
	1 – With Grey Dust Cover								
	5 – With Black Dust Cover								
	Unique Special Code¹²								
	No Digit – Standard part defined by previous 10 digits								
	1 to 9 – Unique special feature								

Notes

- 1) Receptacle type K (Micro AB) is a generation 2 epoxy free design. It is currently available in right angle only. Consult with Amphenol for the availability of the vertical version.
- 2) Termination styles 2, 3, 4, 5 & A are currently available for receptacle types A, B, C, D & E only.
- 3) Termination style 8 is currently available for receptacle types A, C & D only.
- 4) Termination style A uses the pcb from termination style 3.
- 5) Termination style B is currently available for receptacle types A & D only.
- 6) Termination style D is currently available for receptacle type C only.
- 7) Termination style E is currently available for receptacle types A & C only.
- 8) Rear shields are optional for receptacle types B & E (Mini B & Mini AB) with right angle termination style. Rear shields are required for all other types with right angle terminations. Rear shields are not available for vertical termination style.
- 9) For receptacle types A, C & D (Standard A & B Series), the unified thread is #4-40UNC and the metric thread is M3x0.5. For receptacle types B, E & K (Mini B, Mini AB & Micro AB), the unified thread is #2-56UNC and the metric thread is M2.5x0.45.
- 10) When dust covers are supplied with the connector, they are not installed. They are supplied in bulk inside each package of connectors. For receptacle type C (Standard A Series Stacked), two dust covers are supplied per connector.
- 11) For receptacle types B & E (Mini B & Mini AB), dust cover code 4 is frequently used. Code 4 connectors are identical to code 0. For example, part number MUSB-B151-34 is identical to MUSB-B151-30.
- 12) Consult with Amphenol for additional termination styles, solder cup contacts, mounting styles, conductive gaskets or other requirements of interest. See catalogue Accessories pages for dust cover options.

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