ADAM TECH
ADVANCED INTERCONNECT PRODUCTS AND SYSTEMS

USB, MINI USB, MICRO USB FIREWIRE & MINI FIREWIRE

UNIVERSAL SERIAL BUS & IEEE 1394 FIREWIRE
USB & FWC SERIES

INTRODUCTION:
Adam Tech USB, Mini USB & Micro USB (Universal Serial Bus) and IEEE 1394 (Firewire) Series connectors are a complete line of shielded, hot pluggable, high speed I/O interface connectors available in a variety of body styles, sizes, positions and mounting orientations. Each is shielded for superior EMI/RFI protection and features spring contacts for exceptional connectivity properties. Specially designed shells with flares eliminate misconnection and kinked boardlocks add a strong, stable PCB attachment. An ideal solution for a low cost, high speed connection to peripheral devices.

FEATURES:
USB-IF Compatible
High Speed I/O applications
Variety of Circuit sizes
Variety of Body Styles
Standard and Mini versions
Shielded for EMI/RFI protection

MATING CONNECTORS:
Adam Tech USB, Mini USB & Micro USB and IEEE 1394 series connectors and all industry standard USB and IEEE 1394 connectors.

SPECIFICATIONS:

Material:
Standard insulator: PBT, Glass filled, rated UL94V-0
Optional Hi-Temp insulator: Nylon PA9T, rated UL94V-0
Insulator Color: Black (White optional)
Contacts: Phosphor Bronze or Brass
Shell: Steel, nickel plated

Contact Plating:
Gold over Nickel on mating area,
Tin over Copper underplate on tails

Electrical:
Operating Voltage: 30V AC
Current Rating: 1 Amp max.
Contact Resistance: 30 mΩ max.
Insulation Resistance: 1000 MΩ min.
Dielectric Withstanding Voltage: 100V AC for 1 minute

Mechanical:
Insertion force: 3 oz max.
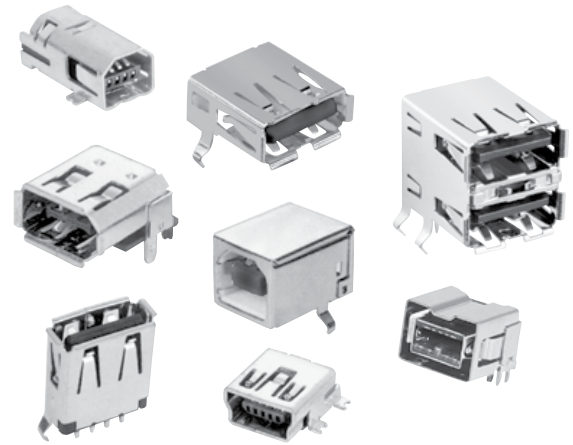Withdrawal force: 0.5 oz min.

Temperature Ratings:
Operating Temperature: -55°C to +85°C
Soldering process temperature:
    Standard insulator: 235°C
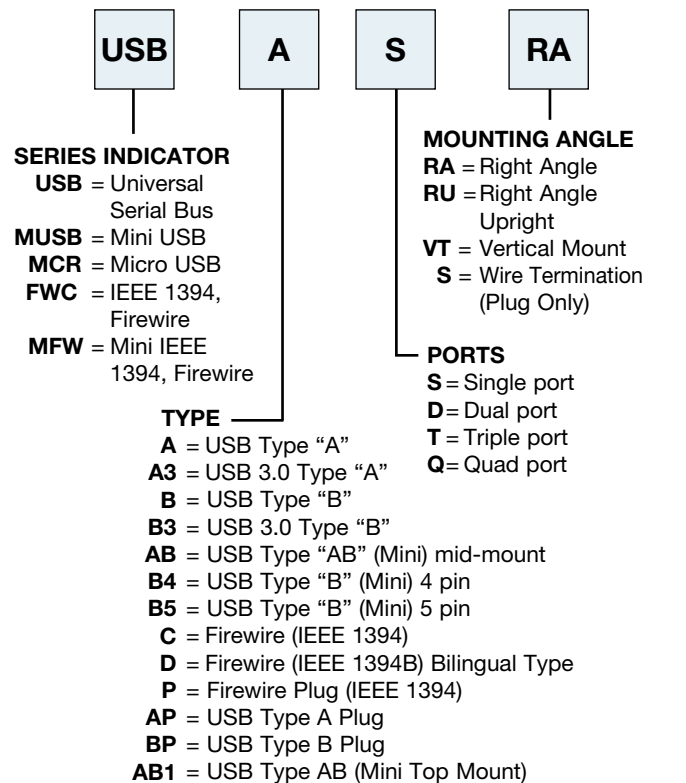   Hi-Temp insulator: 260°C

PACKAGING:
Anti-ESD plastic trays or tubes

APPROVALS AND CERTIFICATIONS:
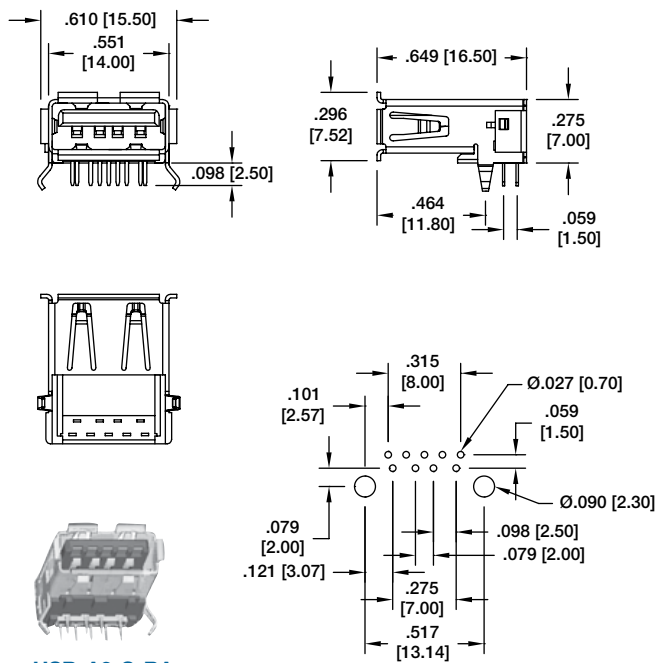UL Recognized & CSA Certified, File no. E224053

ORDERING INFORMATION

| USB | A | S | RA |

SERIES INDICATOR
USB = Universal Serial Bus
MUSB = Mini USB
MCR = Micro USB
FWC = IEEE 1394, Firewire
MFW = Mini IEEE 1394, Firewire

TYPE
A = USB Type "A"
A3 = USB 3.0 Type "A"
B = USB Type "B"
B3 = USB 3.0 Type "B"
AB = USB Type "AB" (Mini) mid-mount
B4 = USB Type "B" (Mini) 4 pin
B5 = USB Type "B" (Mini) 5 pin
C = Firewire (IEEE 1394)
D = Firewire (IEEE 1394B) Bilingual Type
P = Firewire Plug (IEEE 1394)
AP = USB Type A Plug
BP = USB Type B Plug
AB1 = USB Type AB (Mini Top Mount)

MOUNTING ANGLE
RA = Right Angle
RU = Right Angle Upright
VT = Vertical Mount
S = Wire Termination (Plug Only)

PORTS
S = Single port
D = Dual port
T = Triple port
Q = Quad port

OPTIONS:
Add as Suffix to basic part no.
SMT = Surface Mount Leads with Hi-Temp insulator for Hi-Temp soldering processes up to 260°C
TSMT = True Surface Mount Leads with Hi-Temp insulator for Hi-Temp soldering processes up to 260°C
30 = 30 µin gold plating in contact area
WT = White color insulator
HT = Hi-Temp insulator for Hi-Temp soldering processes up to 260°C *(Add this option for thru-hole products only. All SMT products are manufactured with Hi-Temp insulators)*
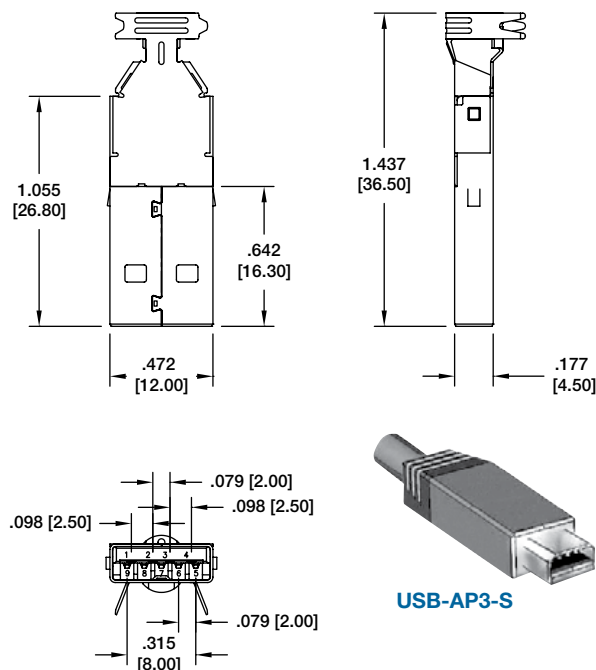**T/R** = Tape & Reel packaging

www.adam-tech.com

USB 3.0, TYPE A
RIGHT ANGLE THRU-HOLE

.610 [15.50]
.551 [14.00]
.649 [16.50]
.296 [7.52]
.275 [7.00]
.098 [2.50]
.464 [11.80]
.059 [1.50]

.315 [8.00]
.101 [2.57]
Ø.027 [0.70]
.059 [1.50]
Ø.090 [2.30]
.079 [2.00]
.098 [2.50]
.079 [2.00]
.121 [3.07]
.275 [7.00]
.517 [13.14]

USB-A3-S-RA

Recommended PCB Layout

USB 3.0, TYPE A
PLUG

1.055 [26.80]
.642 [16.30]
1.437 [36.50]
.472 [12.00]
.177 [4.50]

.079 [2.00]
.098 [2.50]
.098 [2.50]
1 2 3 4
.079 [2.00]
.315 [8.00]

USB-AP3-S

USB 3.0, TYPE B
RIGHT ANGLE THRU-HOLE

USB-B3-S-RA

.472 [12.00]

.078 [2.00]
.079 [2.02]
5X Ø.027 [0.70]
.078 [2.00]
.078 [2.00]
4X Ø.036 [0.92]
.106 [2.71]
Ø.090 [2.30]
.187 [4.77]
.098 [2.50]
.474 [12.04]

Recommended PCB Layout

PIN 5   PIN 9
2 1
3 4
.425 [10.80]
.098 [2.50]
.332 [8.45]

.722 [18.35]
.508 [12.90]
.405 [10.30] ref.

USB 3.0, TYPE B PLUG

1.134 [28.80]
.636 [16.15]
1.419 [36.05]
.315 [8.00]
.411 [10.44]

.291 [7.40]
.252 [6.39]
.039 [1.00]
.130 [3.29]
.098 [2.50]
.230 [5.83]

USB-BP3

USB 2.0, TYPE A
RIGHT ANGLE THRU-HOLE

.563 [14.3]
.492 [12.50]
.275 [7.0]
.110 [2.8]
.024 [0.6]

.571 [14.5]
.202 [5.12]
.106 [2.7]
.405 [10.3]

ø.037 [0.95]
.275 [7.0]
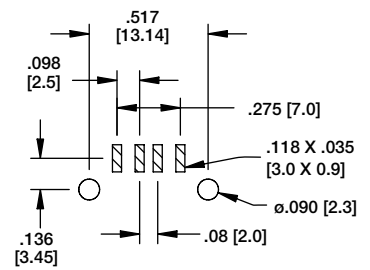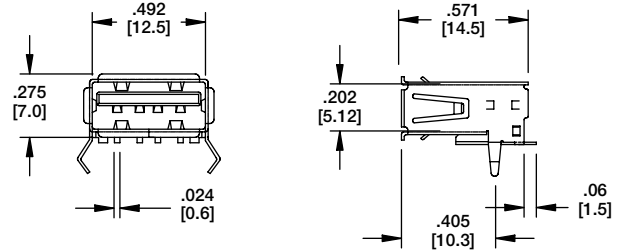.079 [2.0]
.107 [2.71]
ø.090 [2.3]
.517 [13.14]
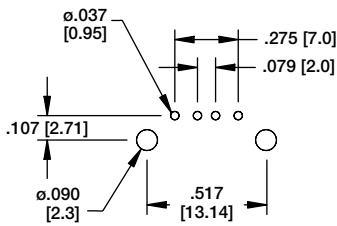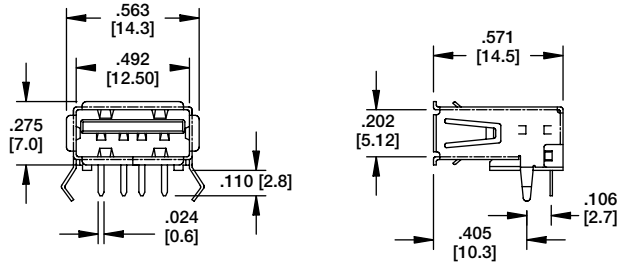
Recommended PCB Layout
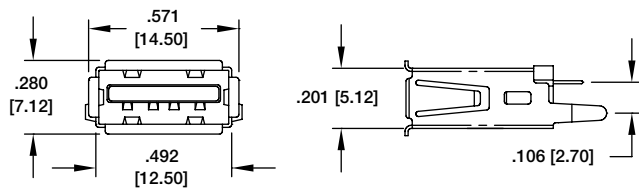
USB-A-S-RA

USB 2.0, TYPE A
RIGHT ANGLE SMT

.492 [12.5]
.275 [7.0]
.024 [0.6]

.571 [14.5]
.202 [5.12]
.06 [1.5]
.405 [10.3]

.517 [13.14]
.098 [2.5]
.275 [7.0]
.118 X .035 [3.0 X 0.9]
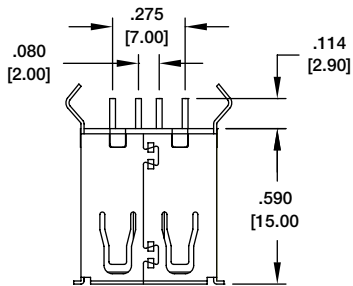ø.090 [2.3]
.136 [3.45]
.08 [2.0]

Recommended PCB Layout

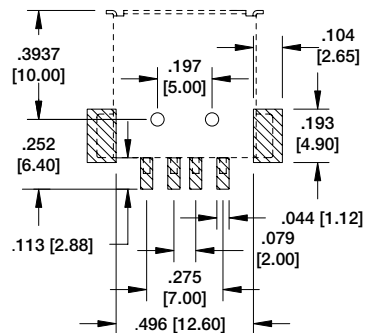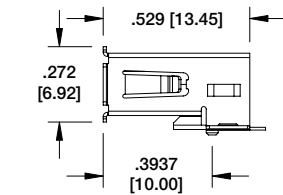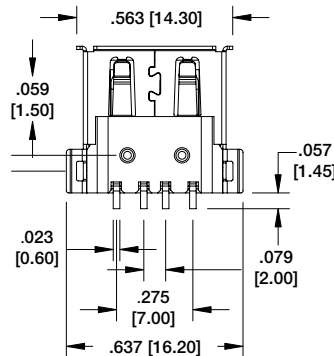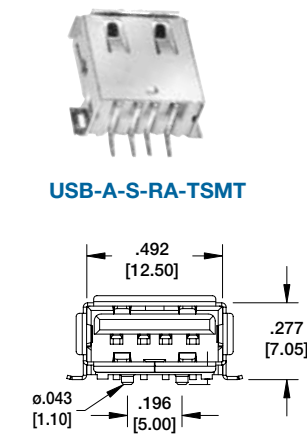**USB-A-S-RA-SMT**

USB 2.0, TYPE A
VERTICAL THRU-HOLE
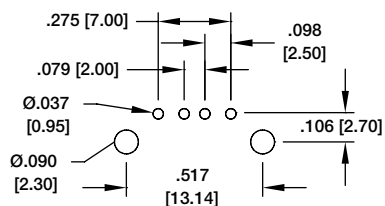
USB-A-S-VT

USB-A-S-RA-TSMT

USB 2.0, TYPE A
RIGHT ANGLE TRUE SMT

.275 [7.00]
.080 [2.00]
.114 [2.90]
.590 [15.00]

.571 [14.50]
.280 [7.12]
.201 [5.12]
.492 [12.50]
.106 [2.70]

.275 [7.00]
.098 [2.50]
.079 [2.00]
Ø.037 [0.95]
Ø.090 [2.30]
.517 [13.14]
.106 [2.70]

Recommended PCB Layout

.492 [12.50]
.277 [7.05]
ø.043 [1.10]
.196 [5.00]

.529 [13.45]
.272 [6.92]
.3937 [10.00]

.563 [14.30]
.059 [1.50]
.057 [1.45]
.023 [0.60]
.079 [2.00]
.275 [7.00]
.637 [16.20]

.3937 [10.00]
.197 [5.00]
.104 [2.65]
.252 [6.40]
.193 [4.90]
.113 [2.88]
.044 [1.12]
.079 [2.00]
.275 [7.00]
.496 [12.60]

Recommended PCB Layout

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USB 2.0, TYPE A
ANGLE UPRIGHT, THRU-HOLE

.271 [6.90]
.204 [5.20]
.760 [19.30]
.523 [13.30]
.500 [12.70]
.574 [14.60]
.098 [2.50]
.214 [5.44]
.287 [7.30]
11.6
.275 [7.00]

.275 [7.00]
.028 [0.73]
.107 [2.72]
ø.053 [1.35]
.214 [5.44]
ø.036 [0.92]
.079 [2.00]
.157 [4.00]
.236 [6.00]
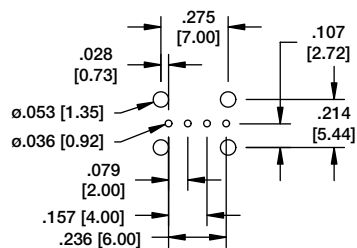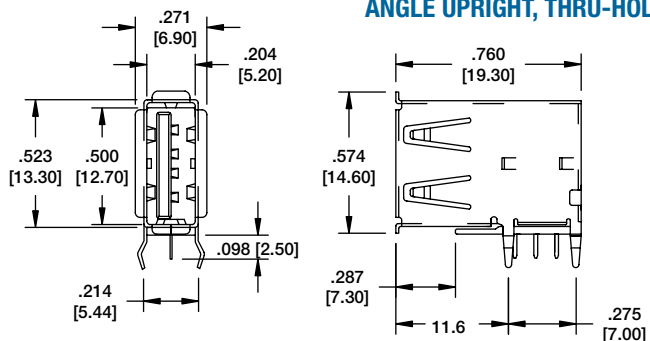
Recommended PCB Layout

USB-A-S-RU

USB 2.0, TYPE A
RIGHT ANGLE, THRU-HOLE
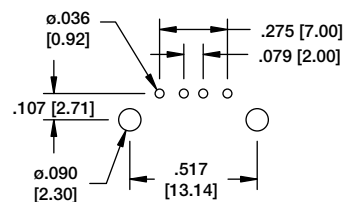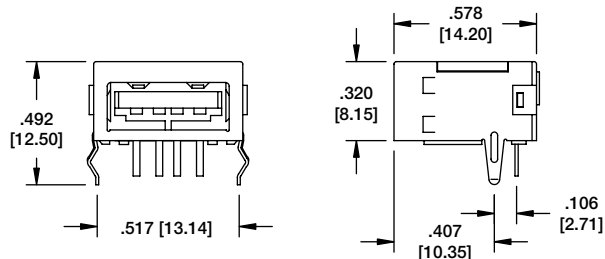
.578 [14.20]
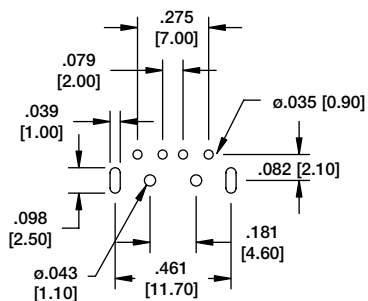.492 [12.50]
.320 [8.15]
.106 [2.71]
.517 [13.14]
.407 [10.35]

ø.036 [0.92]
.275 [7.00]
.079 [2.00]
.107 [2.71]
ø.090 [2.30]
.517 [13.14]

USB-A-S-RA-FS

Recommended PCB Layout

USB 2.0, TYPE A PLUG
RIGHT ANGLE, THRU-HOLE

.740 [18.80]
.177 [4.50]
.106 [2.70]
.082 [2.10]
.079 [2.00]
.275 [7.00]
.461 [11.70]

ø.039 [1.00]
.472 [12.00]
.181 [4.60]

.275 [7.00]
.079 [2.00]
.039 [1.00]
ø.035 [0.90]
.082 [2.10]
.098 [2.50]
.181 [4.60]
ø.043 [1.10]
.461 [11.70]

USB-AP-S-RA

Recommended PCB Layout

USB 2.0, TYPE A PLUG
RIGHT ANGLE, SMT

.740 [18.80]
.004 [0.10]
.177 [4.50]
.079 [2.00]
.275 [7.00]
.461 [11.70]

ø.039 [1.00]
.472 [12.00]
.181 [4.60]

.275 [7.00]
.079 [2.00]
.043 x .079 [1.1 x 2.00]
.039 [1.00]
.098 [2.50]
.098 [2.50]
.181 [4.60]
ø.043 [1.10]
.461 [11.70]

USB-AP-S-RA-SMT

Recommended PCB Layout

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ADVANCED INTERCONNECT PRODUCTS AND SYSTEMS

USB 2.0, TYPE A, 2 PORT
STACKED, RIGHT ANGLE, THRU-HOLE

.594 [15.1]
.492 [12.5]
.543 [13.8]
.024 [0.6]
.110 [2.8]
.670 [17.0]
.634 [16.1]
.224 [5.7]
.41 [10.3]

USB-A-D-RA

.512 [13.0]
.275 [7.0]
.098 [2.5]
ø.037 [0.95]
.104 [2.65]
.224 [5.7]
ø.090 [2.3]
.079 [2.0]
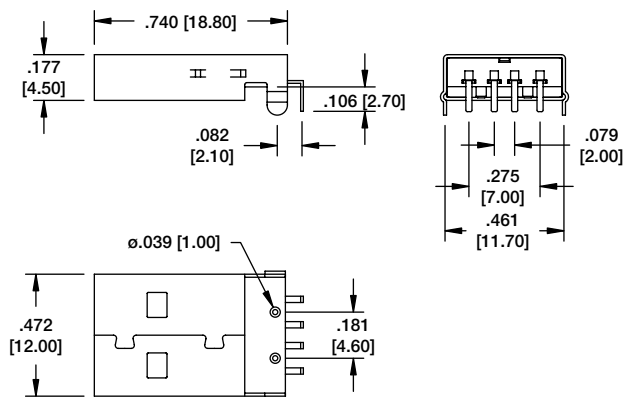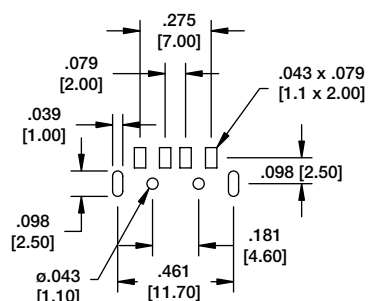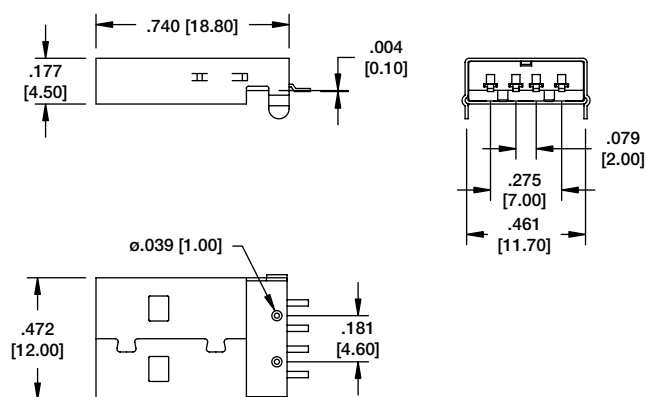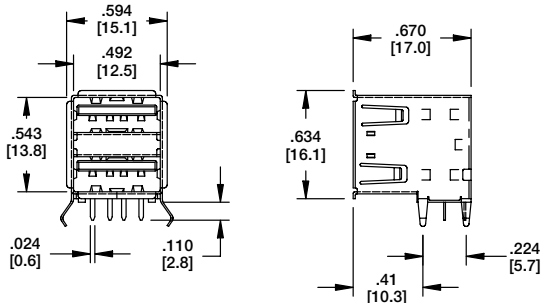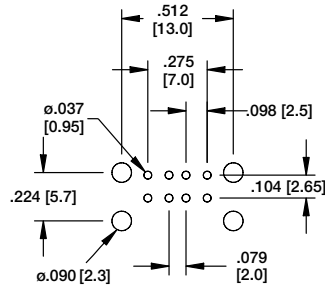
Recommended PCB Layout (Bottom View)

USB 2.0, TYPE A, 4 PORT
STACKED, RIGHT ANGLE, THRU-HOLE

.586 [14.9]
.982 [24.90]
1.300 [33.02]
.137 [3.5]
.035 [0.9]
.102 [2.6]
.023 [0.6]
.275 [7.0]
.531 [13.5]
.405 [10.28]
.106 [2.71]
.223 [5.68]
.216 [5.50]

USB-A-Q-RA

.313 [7.95]
.210 [5.33]
.106 [2.71]
.103 [2.62]
ø.090 [2.30]
PCB EDGE
.079 [2.0]
.275 [7.0]
.404 [10.28]
.223 [5.68]
ø.037 [0.95]

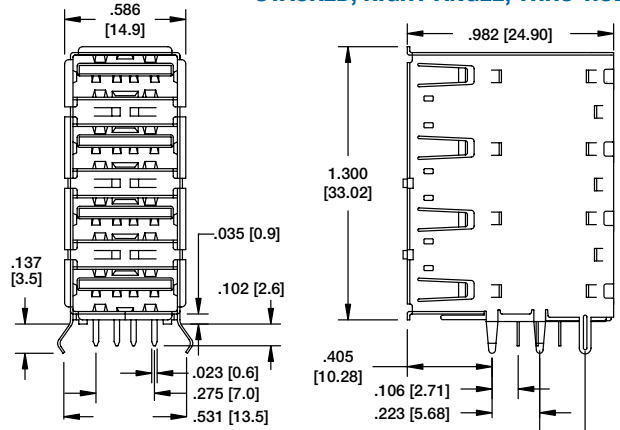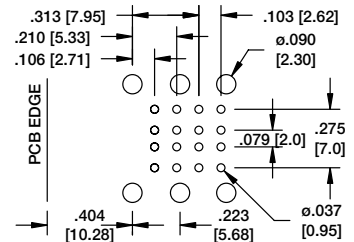**Recommended PCB Layout**

USB 2.0, TYPE A, 3 PORT
STACKED, RIGHT ANGLE, THRU-HOLE

.586 [14.9]
.874 [22.2]
.137 [3.5]
.035 [0.9]
.102 [2.6]
.023 [0.6]
.078 [2.0]
.275 [7.0]
.531 [13.5]
.874 [22.2]
.962 [24.45]
.010 [0.25]
.104 [2.65]
.208 [5.3]
.224 [5.7]

USB-A-T-RA

5.3
ø.090 [2.30]
2.65
PCB EDGE
.275 [7.00]
.405 [10.3]
.313 [5.7]
ø.037 [0.95]
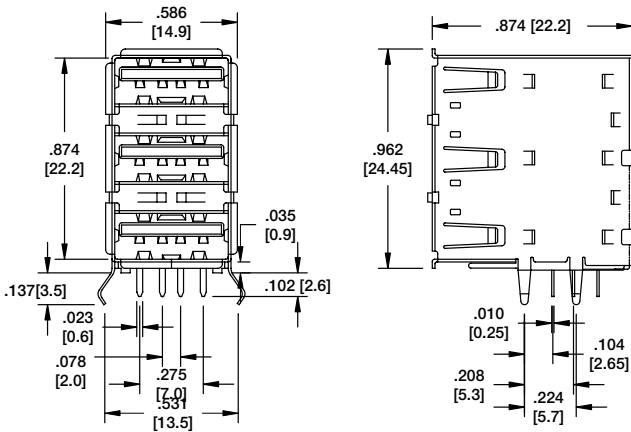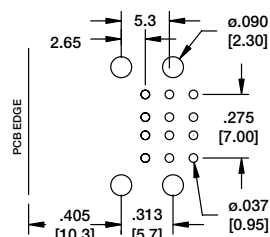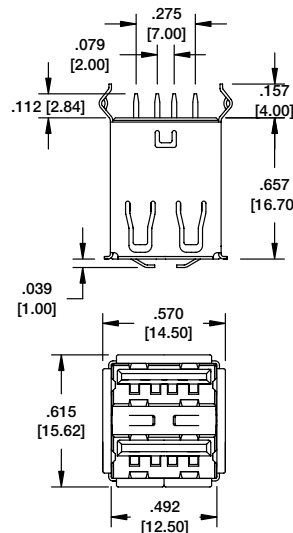
Recommended PCB Layout (Bottom View)

USB 2.0, TYPE A, 2 PORT
STACKED, VERTICAL, THRU-HOLE
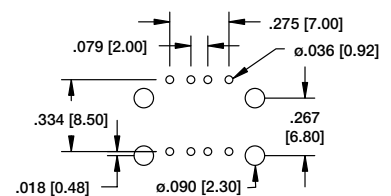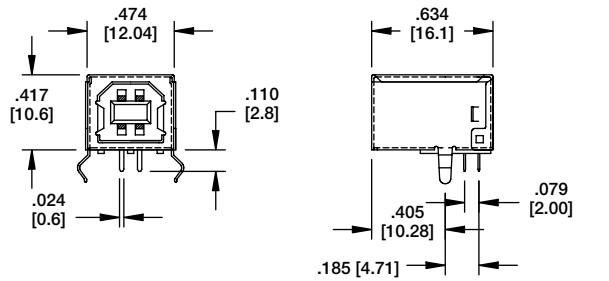
.275 [7.00]
.079 [2.00]
.157 [4.00]
.112 [2.84]
.657 [16.70]
.039 [1.00]
.570 [14.50]
.615 [15.62]
.492 [12.50]
.267 [6.80]
.146 [3.71]

USB-A-D-VT

.275 [7.00]
.079 [2.00]
ø.036 [0.92]
.334 [8.50]
.267 [6.80]
.018 [0.48]
ø.090 [2.30]

Recommended PCB Layout

ADAM TECH
ADVANCED INTERCONNECT PRODUCTS AND SYSTEMS

USB 2.0 CONNECTOR
TYPE B CONNECTOR & PLUG
USB SERIES

USB 2.0, TYPE B
RIGHT ANGLE, THRU-HOLE

.474 [12.04]
.417 [10.6]
.110 [2.8]
.024 [0.6]
.634 [16.1]
.079 [2.00]
.405 [10.28]
.185 [4.71]
.504 [12.8]
.098 [2.5]

USB-B-S-RA

.474 [12.04]
.107 [2.71]
.098 [2.5]
ø.036 [0.92]
ø.090 [2.3]

Recommended PCB Layout

USB 2.0, TYPE B
RIGHT ANGLE, TRUE SMT

.472 [12.0]
.417 [10.6]
.216 [5.5]
.638 [16.2]
.630 [16.0]
.354 [9.0]
.045 [1.15]
.024 [0.6]

USB-B-S-RA-TSMT

.148 [3.75]
.049 [1.25]
ø.055 [1.40]
.028x.118 [0.7x3.0]
.630 [16.0]
.378 [9.58]
.354 [9.0]
.134x.238 [3.4x6.04]
.670 [17.0]
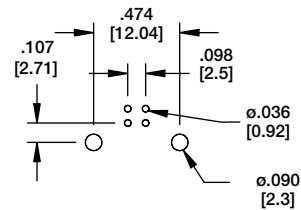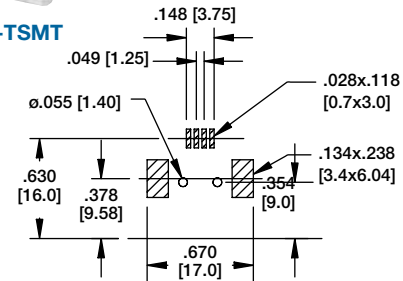
Recommended PCB Layout

USB 2.0, TYPE B
VERTICAL, THRU-HOLE

.472 [12.0]
.439 [11.15]
.335 [8.5]
.633 [16.10]
.08 [2.0]
.366 [9.3]
.295 [7.5]
.098 [2.5]
.118 [3.0]

USB-B-S-VT

.474 [12.04]
.126 [3.2]
ø.036 [0.92]
.098 [2.5]
.107 [2.71]
ø.090 [2.3]
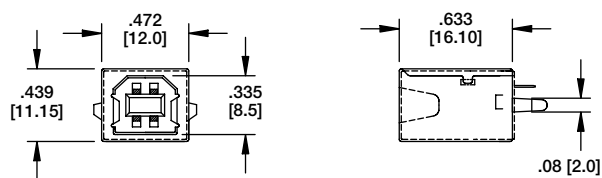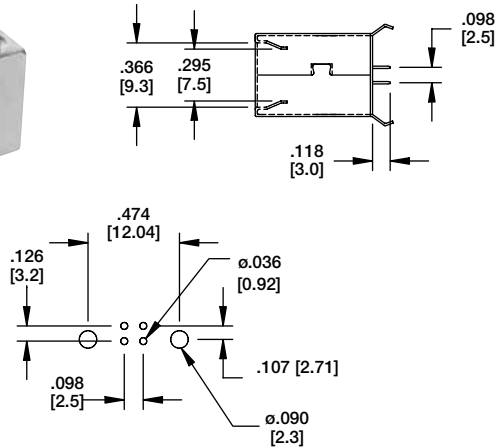
**Recommended PCB Layout
(Component Side)**

USB 2.0, TYPE B
PLUG

USB-BP-S

1.48 [36.80]
.285 [7.26]
.315 [8.00]
.570 [14.50]
.346 [8.80]
.315 [8.00]

MINI USB 2.0, TYPE A RIGHT ANGLE, TRUE SMT

MUSB-A-S-RA-TSMT

.059 [1.5]
.216 [5.50]
.303 [7.70]
.272 [6.90]
.031 [0.80]
.122 [3.10]
.039 [1.00]
.173 [4.4]
.366 [9.30]
.157 [4.00]
.232 [5.90]

ø.035 [0.90]
.091x.020 [2.30x0.50]
PCB EDGE
.350 [8.90]
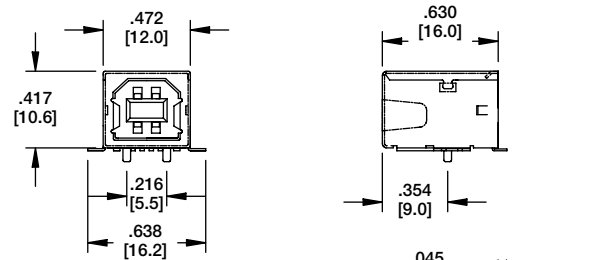.173 [4.4]
.126 [3.20]
.207 [5.25]
.098x.079
.354 [9.00]

Recommended PCB Layout

MINI USB 2.0, TYPE B RIGHT ANGLE, TRUE SMT

MUSB-B4-S-RA-TSMT

.390 [9.90]
.177 [4.50]
.157 [4.00]
.213 [5.40]
.179 [4.55]
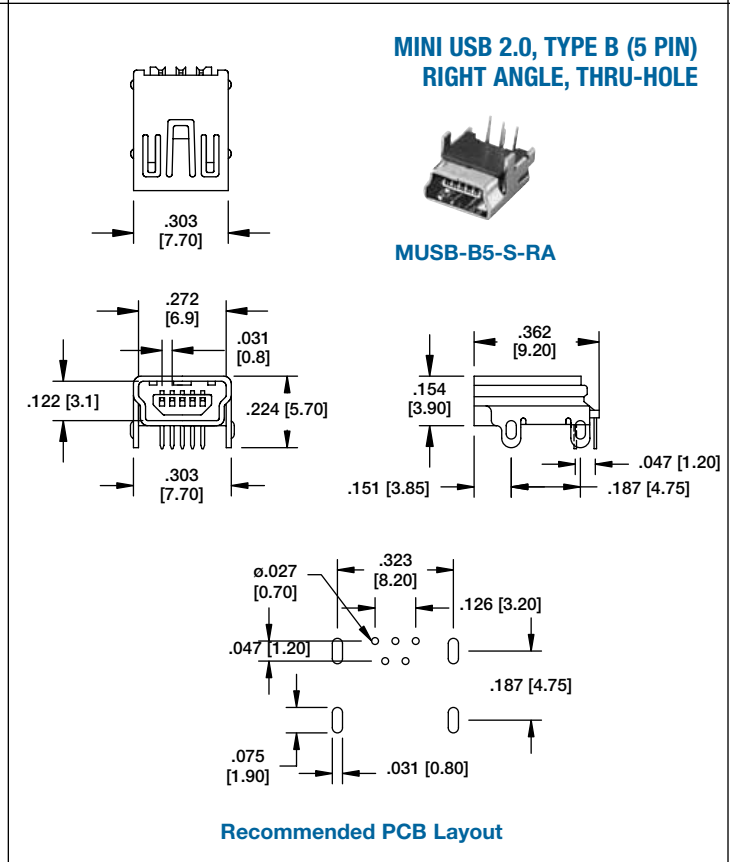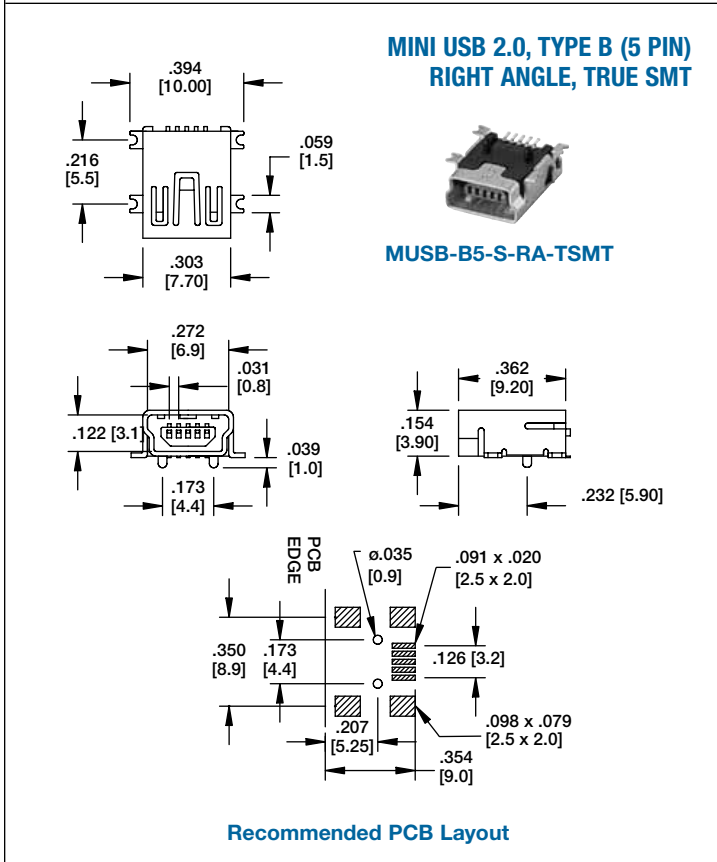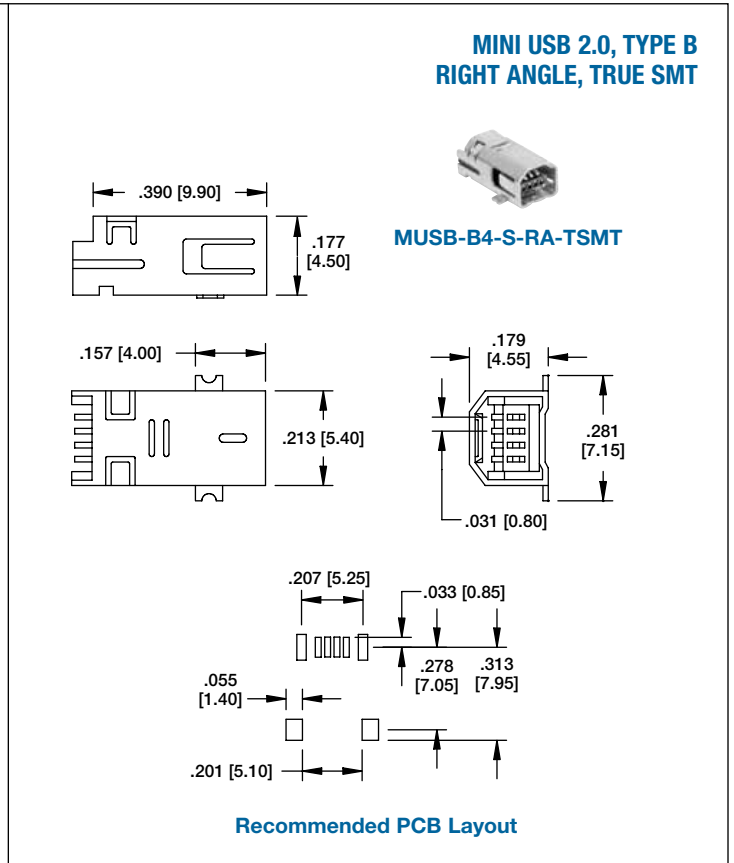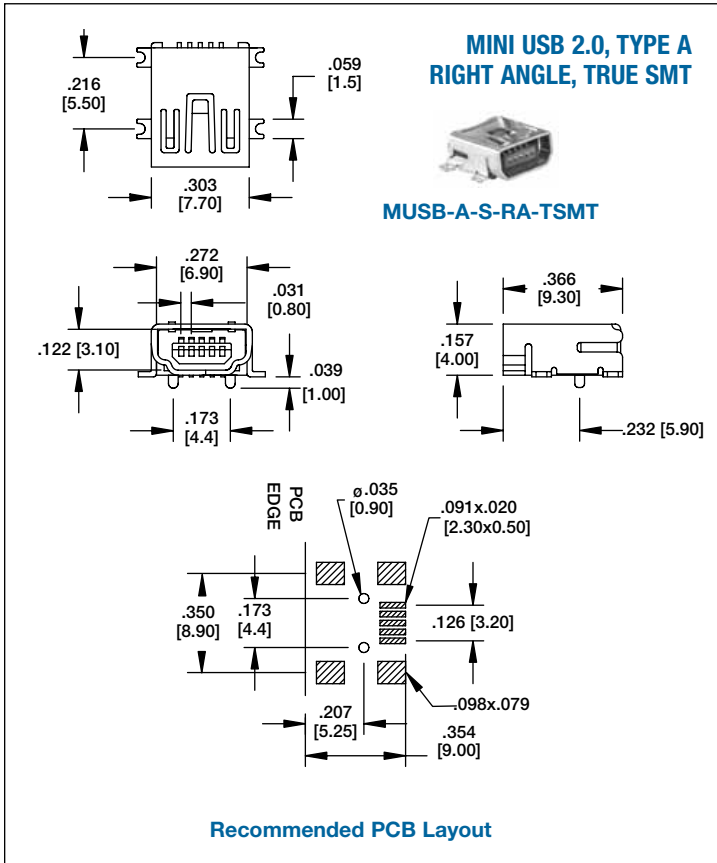.281 [7.15]
.031 [0.80]

.207 [5.25]
.033 [0.85]
.055 [1.40]
.278 [7.05]
.313 [7.95]
.201 [5.10]

Recommended PCB Layout

MINI USB 2.0, TYPE B (5 PIN) RIGHT ANGLE, TRUE SMT

MUSB-B5-S-RA-TSMT

.394 [10.00]
.216 [5.5]
.059 [1.5]
.303 [7.70]
.272 [6.9]
.031 [0.8]
.122 [3.1]
.039 [1.0]
.173 [4.4]
.362 [9.20]
.154 [3.90]
.232 [5.90]

ø.035 [0.9]
.091 x .020 [2.5 x 2.0]
PCB EDGE
.350 [8.9]
.173 [4.4]
.126 [3.2]
.207 [5.25]
.098 x .079 [2.5 x 2.0]
.354 [9.0]

Recommended PCB Layout

MINI USB 2.0, TYPE B (5 PIN) RIGHT ANGLE, THRU-HOLE

MUSB-B5-S-RA

.303 [7.70]
.272 [6.9]
.031 [0.8]
.122 [3.1]
.224 [5.70]
.303 [7.70]
.362 [9.20]
.154 [3.90]
.151 [3.85]
.047 [1.20]
.187 [4.75]

ø.027 [0.70]
.323 [8.20]
.126 [3.20]
.047 [1.20]
.187 [4.75]
.075 [1.90]
.031 [0.80]

Recommended PCB Layout

MINI USB 2.0, TYPE AB RIGHT ANGLE MID MOUNT TRUE SMT

.012 [0.32]
.031 [0.80]
.197 [5.00]
.303 [7.70]
.397 [10.10]
.106 [2.70]

MUSB-AB-S-RA-TSMT

.271 [6.90]
.122 [3.10]
.071 [1.80]
.031 [0.80]

.153 [3.90]
.300 [7.60]
.023 [0.60]

.019 [0.50]
.082 [2.10]
.031 [0.80]
.083 [2.10]
.090 [2.30]
.059 [1.50]
.342 [8.70]
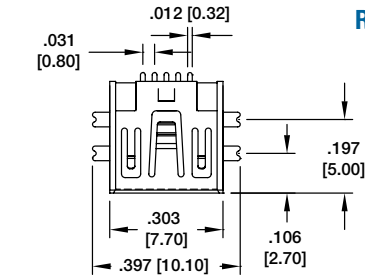
Recommended PCB Layout

MINI USB 2.0, TYPE AB1 RIGHT ANGLE TRUE SMT

.390 [9.90]
.061 [1.55]
.215 [5.45]
.303 [7.70]

MUSB-AB1-S-RA-TSMT

.272 [6.90]
.031 [0.80]
.157 [4.00]
.122 [3.10]
.173 [4.40]

.362 [9.20]
.154 [3.90]
.043 [1.10]
.230 [5.85]

PCB EDGE
ø.035 [0.90]
.091x.020 [2.30x0.50]
.350 [8.90]
.173 [4.40]
.126 [3.20]
.098x.079 [2.50x2.00]
.37 [9.4]
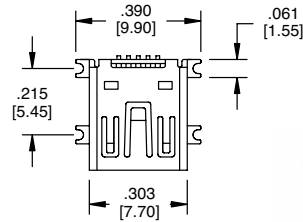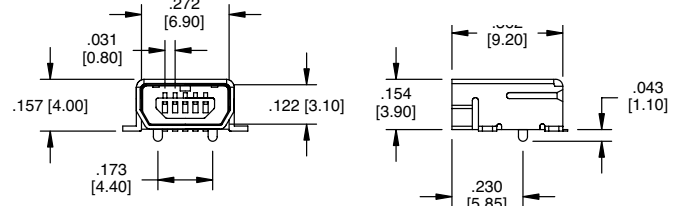
Recommended PCB Layout

MINI USB 2.0, TYPE A4 RIGHT ANGLE, TRUE SMT

.065 [1.65]
.236 [6.00]
.348 [8.85]
.283 [7.20]
.141 [3.60]

MUSB-A4-S-RA-SMT-MK
MIDDLE KEY
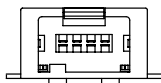
MUSB-A4-S-RA-SMT-SK
SINGLE KEY
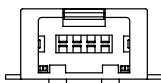
MUSB-A4-S-RA-SMT-DK
DUAL KEY

.118 [3.00]

MUSB-A4-S-RA-SMT-XX

.393 [10.00]
.220 [5.60]
.094 [2.40]
.031 [0.80]
.149 [3.80]
.175 [4.45]
ø.039 [1.00]
.118 [3.00]
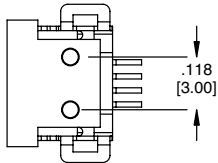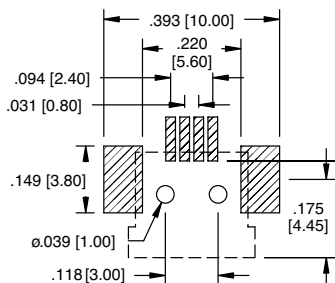
Recommended PCB Layout

MINI USB 2.0, 8 PIN RIGHT ANGLE, SMT

.177 [4.50]
.017 [0.45]
.216 [5.50]

MUSB-8P-S-RA-SMT

.130 [3.30]
.106 [2.70]
.118 [3.00]
.106 [2.70]
.157 [4.00]

.206 [5.22]
.013 [0.34]
Ø.031 [0.80]
.157 [4.00]
.056 [1.43]
.010 [0.25]
.018 [0.45]

Recommended PCB Layout

MINI USB 2.0, 10 PIN RIGHT ANGLE, SMT

MUSB-10P-S-RA-SMT

.177 [4.50]
.019 [0.50]
.334 [8.50]
.289 [7.35]

.405 [10.28]
.271 [6.88]
.177 [4.50]
.019 [0.50]
.043 [1.10]
.244 [6.20]
.228 [5.80]
.012X.043 [0.30X1.10]
.019X.051 [0.50X1.30]
.279 [7.10]

Recommended PCB Layout

.157 [4.00]
.039 [1.00]
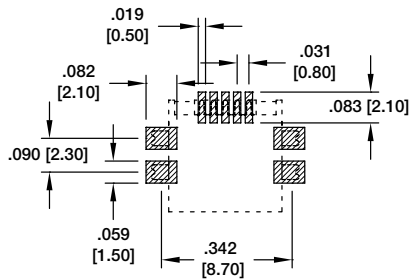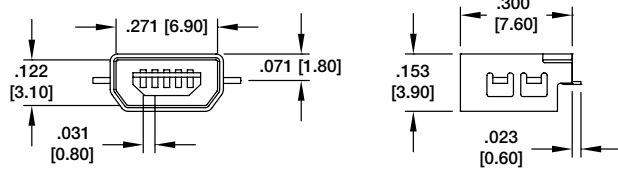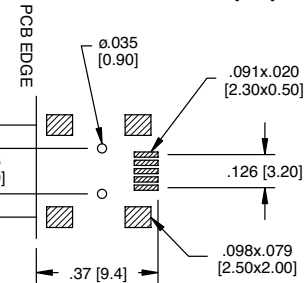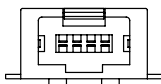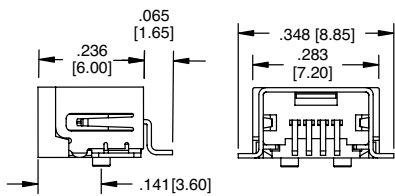.102 [2.60]
.279 [7.10]
.045 [1.15]
.039 [1.00]
.244 [6.20]

MINI USB 2.0, 10 PIN RIGHT ANGLE MID MOUNT, TRUE SMT

MUSB-10P-S-RA-SMT

.413 [10.50]
.1417 [3.60]
.0157 [0.40]
.220 [5.60]
.019 [0.50]
.295 [7.50]

.238 [6.05]
.1417 [3.60]
.0157 [0.40]
.299 [7.60]
.273 [6.95]
.228 [5.80]
.220 [5.60]
.315 [8.00]
.3937 [10.00]

Recommended PCB Layout

.354 [9.00]
.342 [8.70]

.145 [3.70]

MUSB-10P-S-RA-M1-SMT   **MUSB-10P-S-RA-M2-SMT**

.079 [2.00]   .108 [2.75]

MINI USB 2.0, 12 PIN RIGHT ANGLE, SMT

MUSB-12P-S-RA-SMT

.216 [5.50]
.019 [0.50]
.334 [8.50]
.328 [8.35]

.444 [11.28]
.351 [8.92]
.216 [5.50]
.019 [0.50]
.043 [1.10]
.244 [6.20]
.228 [5.80]
.012X.043 [0.30X1.10]
.019X.051 [0.50X1.30]
.319 [8.10]

Recommended PCB Layout

.197 [5.00]
.039 [1.00]
.102 [2.60]
.319 [8.10]
.045 [1.15]
.039 [1.00]
.244 [6.20]

MINI USB 2.0, 14 PIN RIGHT ANGLE, SMT

MUSB-14P-S-RA-SMT

.256 [6.50]
.019 [0.50]
.334 [8.50]
.368 [9.35]

.485 [12.32]
.351 [8.92]
.256 [6.50]
.019 [0.50]
.043 [1.10]
.244 [6.20]
.228 [5.80]
.012X.043 [0.30X1.10]
.019X.051 [0.50X1.30]
.358 [9.10]

Recommended PCB Layout

.236 [6.00]
.039 [1.00]
.102 [2.60]
.358 [9.10]
.045 [1.15]
.039 [1.00]
.244 [6.20]