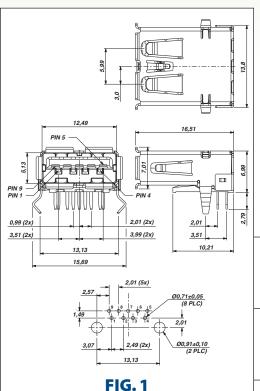


WWW.MILL-MAX.COM



# IO SOCKETS

## SERIES 896, 897 • UNIVERSAL SERIAL BUS 3.0 • SOCKETS



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- USB 3.0 receptacles for through-hole mount
- Plug retention tabs
- Kinked locating legs for secure PCB retention
- · Fully shielded
- Fully backwards compatible with USB 2.0
- 10X faster than USB 2.0 and provides optimized power efficiency
- Packaged in trays:
   896-46-009-90-300000 100 pieces per tray
   897-46-009-90-300000 80 pieces per tray



#### **ORDERING INFORMATION**

FIG. 1	USB 3.0 Type A Receptacle, Single, Through-Hole				
	896-46-009-90-300000				
FIG. 2	USB 3.0 Type B Receptacle, Single, Through-Hole				
	897-46-009-90-300000				

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin-Plated

Contacts: Copper Alloy, Gold Flash over PdNi

Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated UL94V-0

#### **Ratings:**

Voltage: 30VAC (rms) Current: 1.5A PWR/GND pins

All housing materials rated for "lead-free" soldering up to 260° C

#### **Electrical:**

Contact resistance:  $30m\Omega$  max. for power and ground pins

 $50 m\Omega$  max. for all others

Insulation resistance:  $100M\Omega$  min.

Dielectric withstanding voltage: 100VAC at sea level

Capacitance: 2pF max.

#### **Mechanical:**

Random vibration: No discontinuity  $>1\mu s$  per EIA 364-28, cond. VII, letter D

Physical shock: No discontinuity >1 µs per EIA 364-27, condition H

Durability: 5000 cycles min. per EIA 364-09 Mating force: 35 Newtons max. per EIA 364-13

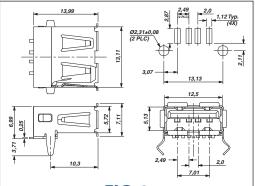
Unmating force: Initial - 10 Newtons min. per EIA 364-13 After test - 8 Newtons min. per EIA 364-13

#### **Environmental:**

Thermal shock per EIA 364-32, condition I Humidity per EIA 364-31 Temperature life per EIA 364-17, method A Solderability per EIA 364-52, category 2



#### SERIES 896, 897 • UNIVERSAL SERIAL BUS • SOCKETS



- FIG. 1

FIG. 2

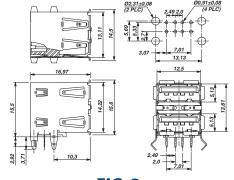
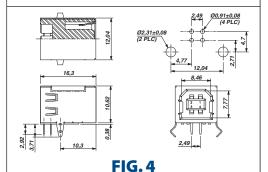


FIG. 3



- USB receptacles for through-hole and surface mount
- Plug retention tabs
- Kinked locating legs for secure PCB retention
- Fully shielded
- Fully compatible with USB 1.0 and 2.0 specifications
- Passes 16MHz signal attentuation per ASTM-D-4566
- Packaged in trays, 150 pieces per tray



#### ORDERING INFORMATION

FIG. 1	Type A Receptacle, Single, Surface Mount
	896-43-004-00-000000
	Type A Receptacle, Single, Through-Hole
FIG. 2	896-43-004-90-000000
	Type A Receptacle, Double, Through-Hole
FIG. 3	896-43-008-90-000000
FIG. 4	Type B Receptacle, Single, Through-Hole
	897-43-004-90-000000

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin-Plated Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated UL94V-0

#### Ratings:

Voltage: 30VAC (rms)

Current: 1A max. per contact for 30°C temperature rise

All housing materials rated for "lead-free" soldering up to 260° C

#### **Electrical:**

Contact resistance:  $30m\Omega$  max. Insulation resistance:  $1000M\Omega$  min.

Dielectric withstanding voltage: 750VAC at sea level

Capacitance: 2pF max.

#### **Mechanical:**

Random vibration: No discontinuity >1 µs per EIA 364-28, cond. V, letter A Physical shock: No discontinuity >1μs per EIA 364-27, condition H

Durability: 1500 cycles min. per EIA 364-09 Mating force: 35 Newtons max. per EIA 364-13 Unmating force: 10 Newtons min. per EIA 364-13

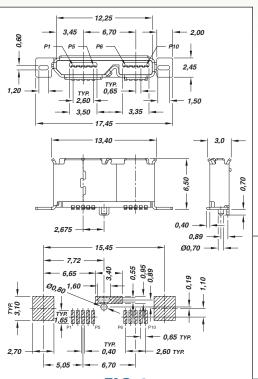
#### **Environmental:**

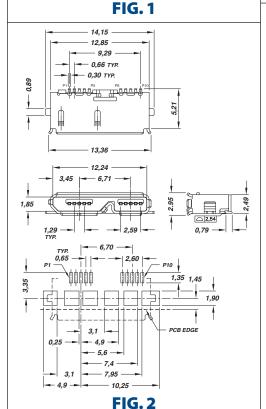
Thermal shock per EIA 364-32, condition I Humidity per EIA 364-31, method II, condition A Temperature life per EIA 364-17, condition 3, method A



**PAGE 149** 

#### SERIES 897 • UNIVERSAL SERIAL BUS 3.0 MICRO-B • SURFACE MOUNT SOCKETS





- USB 3.0 Micro-B receptacles for surface mount
- Reduced mounting space
- Fully shielded
- Fully backwards compatible with USB 2.0
- 10X faster than USB 2.0 and provides optimized power efficiency
- Smaller and lighter than existing USB connectors, for portable & handheld devices
- Packaged on Tape and Reel: 897-10-010-00-300002 - 900 pieces per reel 897-10-010-40-300002 - 1,500 pieces per reel



#### ORDERING INFORMATION

FIG. 1	Micro Type B Receptacle, Single, Vertical Surface Mount					
	897-10-010-00-300002					
FIG. 2	Micro Type B Receptacle, Single, Surface Mount					
	897-10-010-40-300002					

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Gold Flash over Ni Contacts: Copper Alloy, 0,38µm Gold-Plated over Ni

Shell material: Stainless Steel, Nickel-Plated

Insulator material: High temperature LCP thermoplastic rated UL94V-0

#### **Ratings:**

Voltage: 30VAC (rms)

Current: 1.5A (Pin 1 and 5), .25A (other pins)

All housing materials rated for "lead-free" soldering up to 260° C

#### **Electrical:**

Contact resistance:  $30m\Omega$  max. (Pin 1 and 5)

 $50m\Omega$  max. (other pins)

Insulation resistance:  $100M\Omega$  min.

Dielectric withstanding voltage: 100VAC for 1 minute at sea level

#### **Mechanical:**

Random vibration: No discontinuity >1 µs per EIA 364-28, cond. V, letter A

Durability: 10,000 cycles max. per EIA 364-09 Mating force: 35 Newtons max. per EIA 364-13

Unmating force: Initial - 10 Newtons min. per EIA 364-13

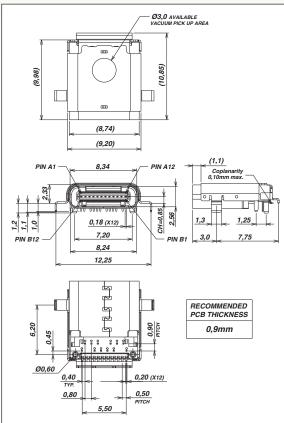
After test - 8 Newtons min. per EIA 364-13

#### **Environmental:**

Operating Temperature Range: -40°C to +85°C Humidity per EIA 364-31, method II, condition A Temperature Life per EIA 364-17, condition 3, method A Solderability per EIA 364-52, category 2 (260°C for 3 seconds)



#### SERIES 898 • UNIVERSAL SERIAL BUS 3.1 TYPE C • MID-MOUNT RECEPTACLE



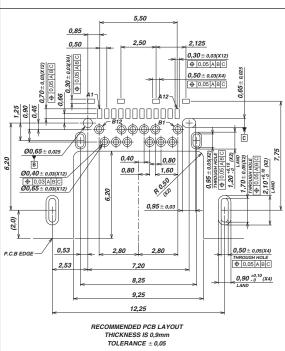


FIG. 1

- USB 3.1 Mid-Mount, Hybrid Layout
- Full metal housing with enhanced EMI/RFI prevention
- Reversible USB Type C Connector
- 10Gbps Data rate
- 2X faster than USB 3.0 with more efficient data transfer, higher through-put & improved I/O power efficiency
- For Storage, Smartphone, Tablet, Notebook, Docking, Automotive & Home Entertainment



#### ORDERING INFORMATION

FIG. 1	Mid-Mount Type C Receptacle, Hybrid Layout				
	898-43-024-90-310000				
	(Tape & Reel Packaged, 900 parts per 330mm reel)				

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin-Plated

Contacts: Copper Alloy, 0,76µm Gold-Plated

Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated UL94V-0

#### **General Specifications:**

Temperature Range:

Operating: -55°C to +85°C

Nominal: +20°C

#### **Electrical:**

Voltage: 50VAC (rms)

LLCR:  $40m\Omega$  (initial),  $\Delta10m\Omega$  (after) Dielectric Strength: 100VAC

Insulation resistance:  $100M\Omega$  min.

Current Rating: VBUS and GND contacts rated @ 1.25A each,

paralleled for a total of 5A

#### **Mechanical:**

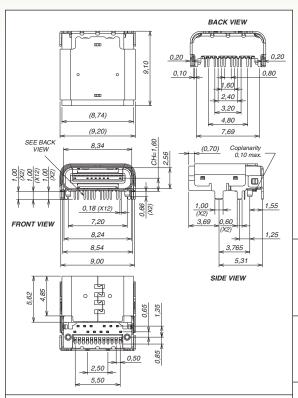
Durability: 10,000 cycles

Insertion force: 20 Newtons max.

Extraction force: 8 Newtons min., 20 Newtons max.



#### SERIES 898 • UNIVERSAL SERIAL BUS 3.1 TYPE C • TOP MOUNT RECEPTACLE



- USB 3.1 Top Mount, Hybrid Layout
- Full metal housing with enhanced EMI/RFI prevention
- Reversible USB Type C Connector
- 10Gbps Data rate
- 2X faster than USB 3.0 with more efficient data transfer, higher through-put & improved I/O power efficiency
- For Storage, Smartphone, Tablet, Notebook, Docking, Automotive & Home Entertainment



RoHS-2

#### ORDERING INFORMATION

FIG. 1	Top Mount Type C Receptacle, Hybrid Layout				
	898-73-024-90-310001				
	(Tape & Reel Packaged, 550 parts per 330mm reel)				

# 0,40±

7,69

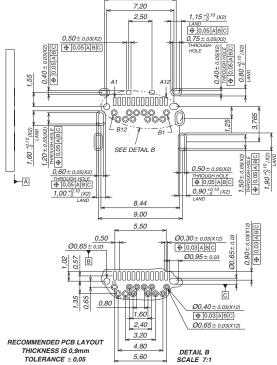


FIG. 1

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin-Plated

Contacts: Copper Alloy, 0,76µm Gold-Plated

Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated UL94V-0

#### **General Specifications:**

Temperature Range:

Operating: -55°C to +85°C

Nominal: +20°C

#### **Electrical:**

Voltage: 50VAC (rms)

LLCR:  $40m\Omega$  (initial),  $\Delta10m\Omega$  (after)

Dielectric Strength: 100VAC Insulation resistance:  $100M\Omega$  min.

Current Rating: VBUS and GND contacts rated @ 1.25A each,

paralleled for a total of 5A

#### **Mechanical:**

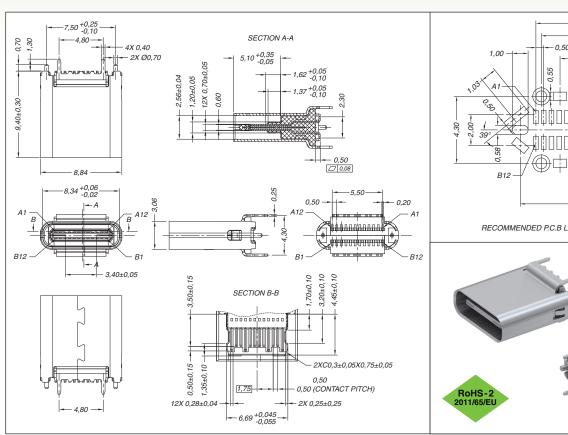
Durability: 10,000 cycles

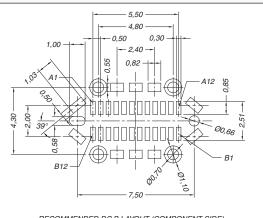
Insertion force: 20 Newtons max.

Extraction force: 8 Newtons min., 20 Newtons max.



#### SERIES 898 • UNIVERSAL SERIAL BUS 3.1 TYPE C • VERTICAL SURFACE MOUNT





RECOMMENDED P.C.B LAYOUT (COMPONENT SIDE)



#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin-Plated Contacts: Copper Alloy, 30 µ" Gold-Plated Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated

UL94V-0

#### **General Specifications:**

Temperature Range: Operating: -40°C to +85°C

Nominal: +20°C

#### **Electrical:**

Voltage: 50VAC (rms)

LLCR:  $40m\Omega$  max. (initial),  $\Delta10m\Omega$  (Test cond. 20mV, 100mA)

Dielectric Strength: 100VAC Insulation resistance:  $100M\Omega$  min.

Current Rating: 5A for VBUS pin, 1.25A for VCONN pin

#### **Mechanical:**

Durability: 10,000 cycles Insertion force: 5-20 Newtons

Extraction force: 8-20 Newtons after test

#### **ORDERING INFORMATION**

#### **Vertical Surface Mount Type C Receptacle**

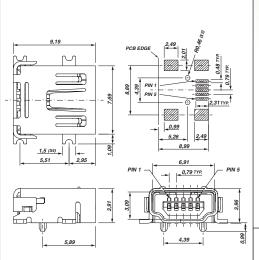
898-43-024-00-310002

#### (Packaged in trays: 100 pieces per tray)

- USB 3.1 Vertical Surface mount, Type C
- Full metal housing with enhanced EMI/RFI prevention
- Reversible USB Type C Connector
- 10Gbps Data rate
- · 2X faster than USB 3.0 with more efficient data transfer, higher through-put & improved I/O power efficiency
- · For Storage, Smartphone, Tablet, Notebook, Docking, Automotive and Home Entertainment



#### SERIES 896, 897 • MINI UNIVERSAL SERIAL BUS • SURFACE MOUNT SOCKETS



- Mini USB receptacles for surface mount
- 5 Pin (one ID Pin), 0.8mm pitch, mini USB connector
- Reduced mounting space
- Fully Shielded
- Fully compliant with current USB 2.0 specifications
- Smaller and lighter than standard USB connectors for portable & handheld devices
- Packaged on Tape and Reel: 896-43-005-00-100001 - 800 pieces per reel 897-43-005-00-100001 - 700 pieces per reel



#### FIG. 1

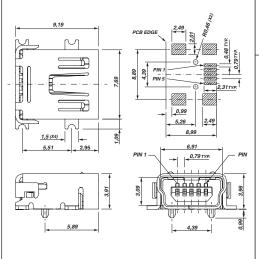


FIG. 2

#### ORDERING INFORMATION

FIG. 1	Mini Type A Receptacle, Single, Surface Mount				
	896-43-005-00-100001				
	Mini Type B Receptacle, Single, Surface Mount				
FIG. 2	897-43-005-00-100001				

#### **Technical Specifications**

#### **Materials:**

Terminals: Copper Alloy, Tin Plated Contacts: Copper Alloy, 0,76µm Gold Plated

Casing and Shield: Stainless Steel

Insulator material: High temperature thermoplastic rated UL94V-0

#### Ratings:

Voltage: 30VAC (rms)

Current: 1A max. per contact for 30°C temperature rise

All housing materials rated for "lead-free" soldering up to 260° C

#### **Electrical:**

Contact resistance:  $50m\Omega$  max. Insulation resistance:  $100M\Omega$  min.

Dielectric withstanding voltage: 100VAC at sea level

Capacitance: 2pF max.

#### Mechanical:

Random vibration: No discontinuity >1 µs per EIA 364-28, cond. V, letter A Physical shock: No discontinuity >1 µs per EIA 364-27, condition H

Durability: 5000 cycles min. per EIA 364-09 Mating force: 35 Newtons max. per EIA 364-13

Unmating force: Initial - 7 Newtons min. per EIA 364-13 After test - 3 Newtons min. per EIA 364-13

Cable pull-out force per EIA 364-38

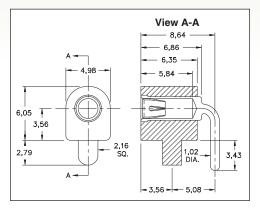
#### **Environmental:**

Thermal shock per EIA 364-32, condition I Humidity per EIA 364-31, method II, condition A Temperature life per EIA 364-17, condition 3, method A Solderability per EIA 364-52, category 2



# IO SOCKETS

## **SERIES 395...3XX • RIGHT ANGLE SOCKET • TEST POINT**

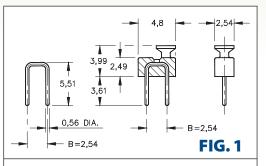


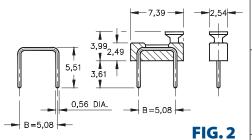
- Available to accept 3 pin sizes: 1, 1,5, & 2mm
- Uses high temperature PCT polyester insulator
- Standard insulator color is black
- For Electrical, Mechanical and Environmental Data, see page 264 for details

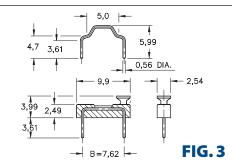


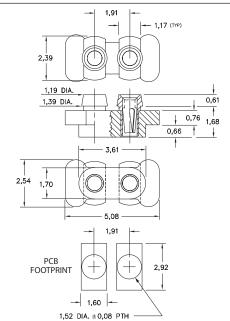
Pin Size	ORDERING INFORMATION							
1.0mm	395-XX-101-34-340000							
1.5mm	395-XX-101-03-380000							
2.0mm	395-XX-101-07-350000							
	RECOMMENDED MOUNTING HOLES  Ø2,79±0,08 DRILLED or PLATED THROUGH-HOLE  XX=Plating Code See Below  RECOMMENDED MOUNTING HOLES  Ø1,14±0,08 PLATED THROUGH-HOLE							
SPECIFY PLATING CODE XX = Sleeve (Pin)	13 <b>♦</b> 93 0,25μm Au 5,08μm Sn/Pb							
Contact (Clip)	0,76μm Au 0,76μm Au							

#### SERIES 388, 999 • MALE SHORTING JUMPERS & MICROPHONE SOCKETS









- Male shorting jumpers are available with or without insulator and have 0,56 diameter pins with 2,54, 5,08 or 7,62 center spacing
- Insulator materials are not high temperature
- For Electrical, Mechanical & Environmental Data, see page 264 for details





#### **ORDERING INFORMATION**

	Male Shorting Jumper 2,54 Spacing				
FIG. 1	Color / Style Plating 0,25μm Au				
	Black	999-11-210-10-000000			
	Not Insulated	999-11-110-10-000000			
	Male Shorting Jumper 5,08 Spacing				
FIG. 2	Color / Style	Plating 0,25μm Au			
	Black	999-11-220-10-000000			
	Not Insulated	999-11-112-10-000000			
	Male Shorting Jumper 7,62 Spacing				
FIG. 3	Color / Style	Plating 0,25μmAu			
	Black	999-11-230-10-000000			
	Not Insulated	999-11-113-10-000000			

- Series 388 microphone socket is a bottom entry socket for microphones having Ø 0,46 pins on 1,91 centers
- Designed to be surface mount and intrusive reflow soldered
- Series 388 uses MM #8874 pins. See page 159 for details
- Hi-Rel, 3-finger BeCu #11 contact is rated at 3 amps. See page 251 for details
- Insulator is high temperature Nylon 46, rated UL 94 V-0



## **Ordering Information** Microphone Socket

XX=Plating Code **See Below** 

388-XX-102-11-740800 (Discrete socket) Plating Code

388-XX-102-11-740799 (Tape and Reel)

(Supplied on 12mm wide carrier tape per EIA-481: 6,500 per 330mm reel)

SPECIFY PLATING CODE XX	=		99		44 🔷
Sleeve (Pin)	)		5,08µm Sn/Pb		5,08μm Sn
Contact (Clip)			5,08μm Sn/Pb		5,08μm Sn

