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LEAD-FREE M20 SERIES

The global RoHS (Restriction of Hazardous Substances) initiatives come into effect by July 2006, with the biggest impact to the connector industry being the elimination of lead from plating and soldering processes. Harwin has established a conversion strategy, which will see all products becoming lead-free within the initiative timeframe. Phase 1 of this programme will focus on the 2.54mm pitch M20 series, with the remaining Harwin products to be addressed over the coming months.

The product incorporates tin-plated contacts and high temperature housings, meeting the increased demands of non-leaded solder processing and providing comparable performance to the established tin/lead ranges. Initial introductions will focus upon the following series codes:

New Part Number	Existing Part Number	Description
M20-782XXXX	M20-982XXXX	Vertical Single-in-line Socket Assembly
M20-783XXXX	M20-983XXXX	Vertical Dual-in-line Socket Assembly
M20-788XXXX	M20-988XXXX	Horizontal Dual-in-line Socket Assembly
M20-789XXXX	M20-989XXXX	Horizontal Single-in-line Socket Assembly

The new M20-700 series product will be shortly available for order. However, to ensure customer service levels are maintained throughout this transitional period, orders for the existing M20-900 series will be accepted until August 13th 2004.

To support our key customers, Harwin have successfully minimised the costs incurred from the material upgrades, and marginal increases will be added to current sell pricing.

A product data-pack has been provided with this letter to ensure that you are fully informed of the change. If you should need any further information, please do not hesitate to contact me directly.

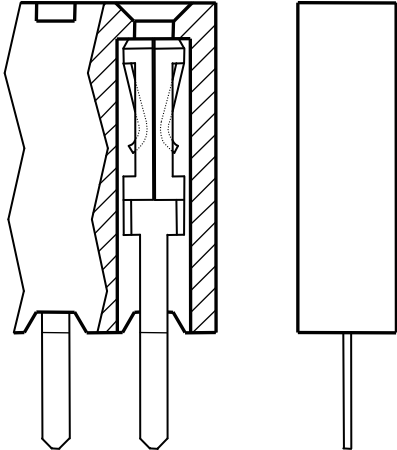
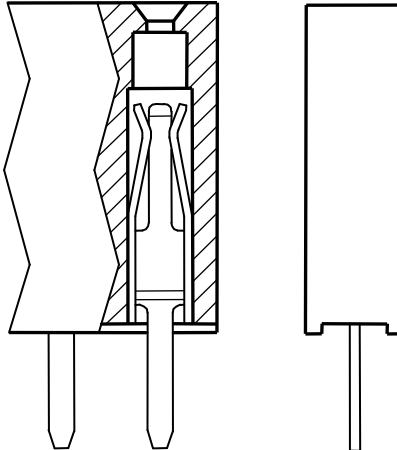
Best Regards,

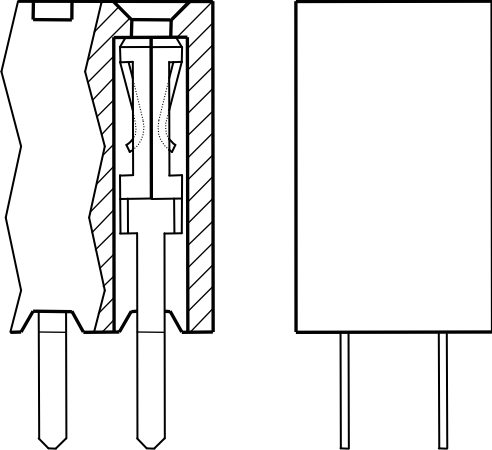
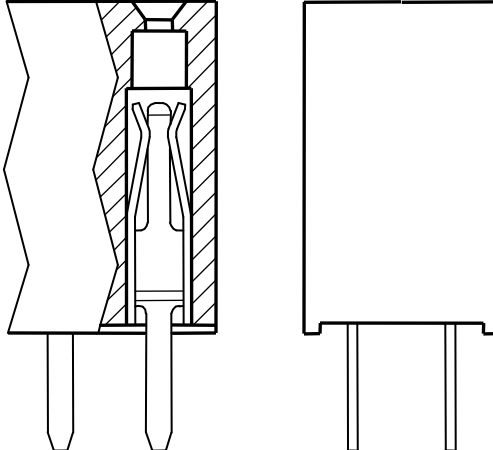
Wendy Jane Bourne
Product Engineer
Direct Tel: +44 (0)23 9231 4530

Included: Harwin Lead-free Statement
Customer Information Drawings
Comparison Data

LEAD-FREE M20 SERIES (2.54mm PITCH)

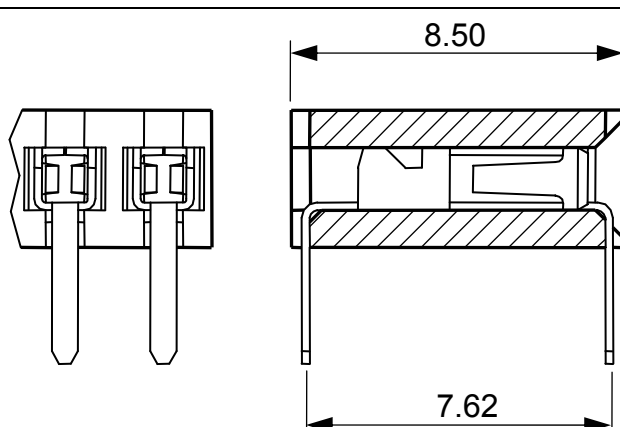
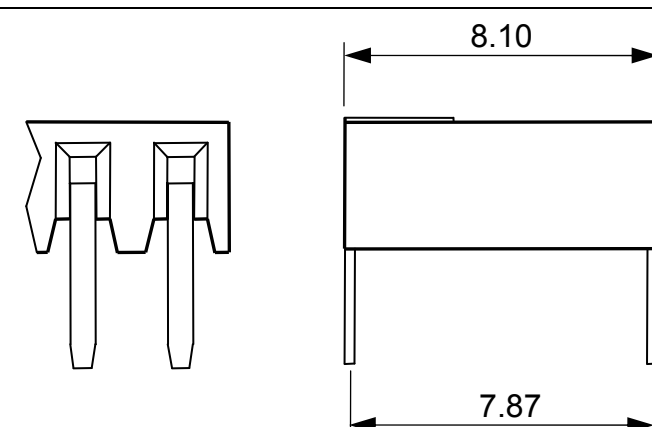
VERTICAL PC TAIL SOCKETS

Original = M20-982 series		New = M20-782 series	
			
Part Number	Finish	Part Number	Finish
M20-982XX06	Tin/Lead	M20-782XX46	100% Tin
M20-982XX22	Selective Gold + Tin/Lead	M20-782XX42	Selective Gold + 100% Tin
		M20-782XX06	Tin/Lead
		M20-782XX22	Selective Gold + Tin/Lead

Original = M20-983 series		New = M20-783 series	
			
Part Number	Finish	Part Number	Finish
M20-983XX06	Tin/Lead	M20-783XX46	100% Tin
M20-983XX22	Selective Gold + Tin/Lead	M20-783XX42	Selective Gold + 100% Tin
		M20-783XX06	Tin/Lead
		M20-783XX22	Selective Gold + Tin/Lead

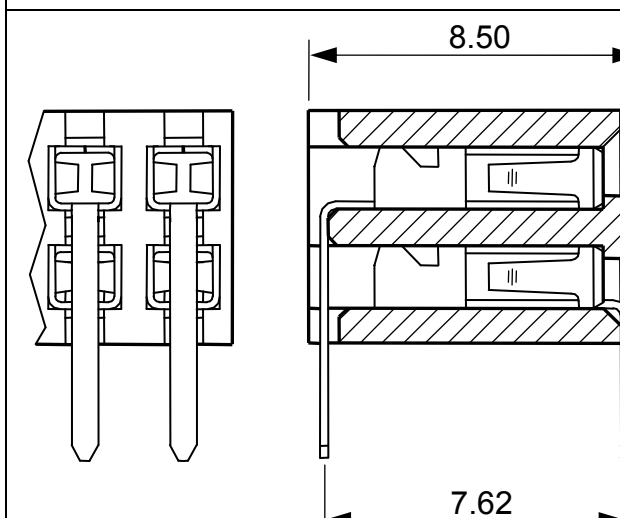
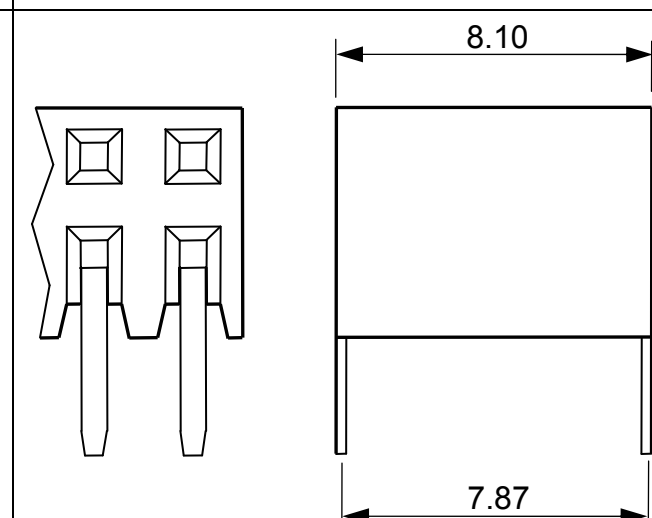
LEAD-FREE M20 SERIES (2.54mm PITCH)

HORIZONTAL PC TAIL SOCKETS

Original = M20-989 series		New = M20-789 series	
			
Part Number	Finish	Part Number	Finish
M20-989XX06	Tin/Lead	M20-789XX46	100% Tin
M20-989XX22	Selective Gold + Tin/Lead	M20-789XX42	Selective Gold + 100% Tin
		M20-789XX06	Tin/Lead
		M20-789XX22	Selective Gold + Tin/Lead

Differences:

- Moulding width decreased – non functional,
- Contact pitch – suits original PCB layout.

Original = M20-988 series		New = M20-788 series	
			
Part Number	Finish	Part Number	Finish
M20-988XX06	Tin/Lead	M20-788XX46	100% Tin
M20-988XX22	Selective Gold + Tin/Lead	M20-788XX42	Selective Gold + 100% Tin
		M20-788XX06	Tin/Lead
		M20-788XX22	Selective Gold + Tin/Lead

Differences:

- Moulding width decreased – non functional,
- Contact pitch – suits original PCB layout.

Customer Information Sheet

DRAWING No.: M20-782XXXX

SHEET 3 OF 3

IF IN DOUBT - ASK

(C)

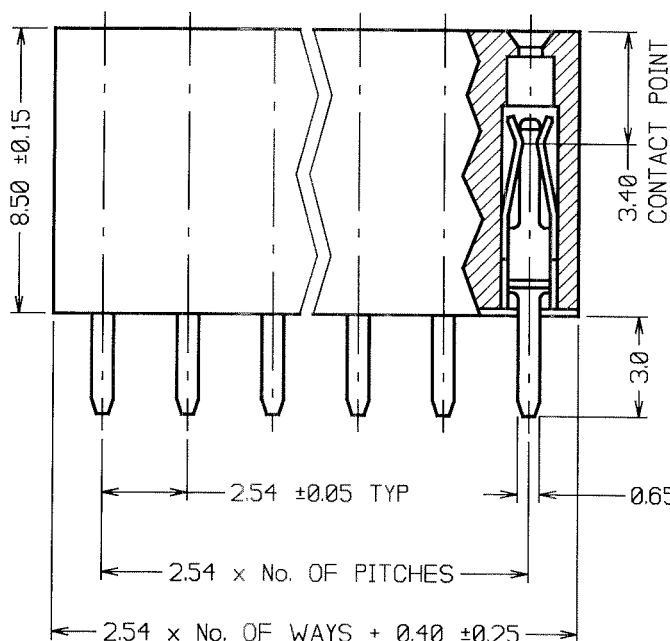
NOT TO SCALE

THIRD ANGLE PROJECTION

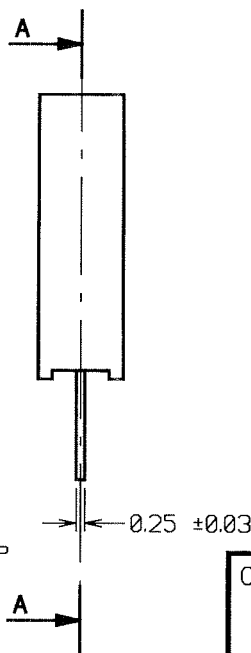
ALL DIMENSIONS IN mm



2.50 ±0.15



PART
SECTION A-A



NOTES:

1. RECOMMENDED PCB HOLE SIZE = Ø1.00mm.

SPECIFICATION:

MATERIAL:

MOULDING FOR 42 & 46 - NYLON 6T UL94V-0, BLACK
MOULDING FOR 22 & 06 - POLYESTER UL94V-0, BLACK
CONTACTS - PHOSPHOR BRONZE

FINISH:

42 - GOLD ON CONTACT AREA, 100% TIN
ON TAILS
46 - 100% TIN
22 - GOLD ON CONTACT AREA, TIN/LEAD ON TAILS
06 - TIN/LEAD

ELECTRICAL:

CURRENT RATING - 3A
VOLTAGE PROOF - 500V AC/DC
CONTACT RESISTANCE - 20 MILLIOHMS MAX
INSULATION RESISTANCE - 5,000 MEGOHMS MIN

ENVIRONMENTAL:

TEMPERATURE RANGE - -40° TO +105°

MECHANICAL:

INSERTION FORCE - 5N MAX
WITHDRAWAL FORCE - 0.5N MIN
DURABILITY - 50 OPERATIONS

PACKING:

TUBE

FOR COMPLETE SPECIFICATION SEE COMPONENT
SPECIFICATION C001XX (LATEST ISSUE)

ORDER CODE:

M20-782XXXX

No. OF WAYS
02 TO 40

FINISH:

42 - SELECTIVE GOLD + TIN
46 - TIN
22 - SELECTIVE GOLD + TIN/LEAD
06 - TIN/LEAD

JAE	3	03.06.04	8008
NAME	ISS.	DATE	C/NOTE
APPROVED:			
CHECKED:			
DRAWN:	J. EVANS		
CUSTOMER REF.:			
ASSEMBLY DRG:			

HARWIN

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TOLERANCES

X. = ±1mm
X.X = ±0.25mm
X.XX = ±0.10mm
X.XXX = ±0.01mm
ANGLES = ±5°
UNLESS STATED

MATERIAL:

SEE ABOVE

FINISH:

SEE ABOVE

S/AREA:

mm²

TITLE:

2.54mm PITCH SIL VERTICAL
PC TAIL SOCKET ASSEMBLY

DRAWING NUMBER:

M20-782XXXX

SHT
3
OF
3

Customer Information Sheet

DRAWING No.: M20-783XXXX

SHEET 3 OF 3

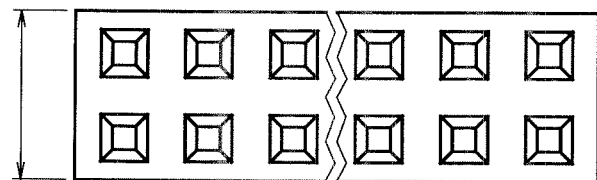
IF IN DOUBT - ASK

(C)

NOT TO SCALE

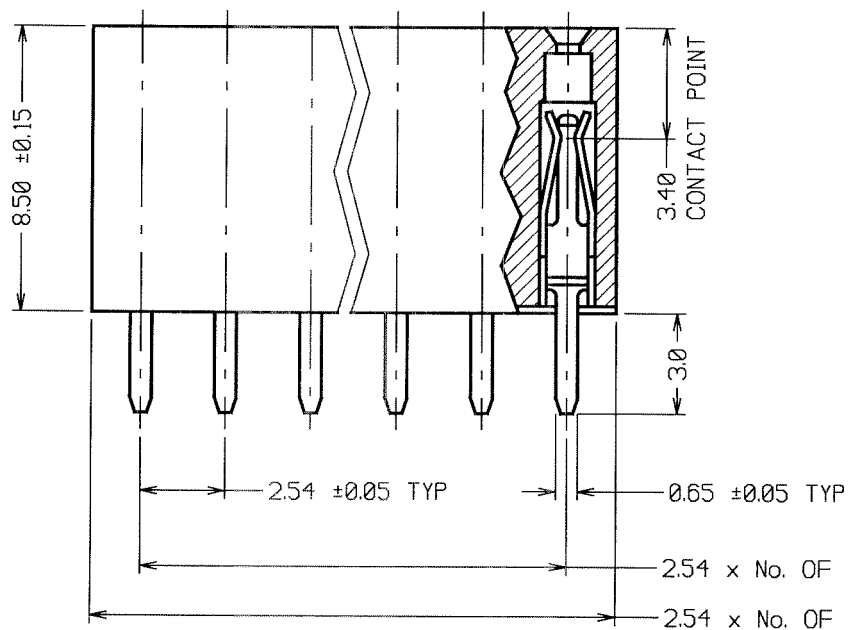
THIRD ANGLE PROJECTION

ALL DIMENSIONS IN mm



5.00 ±0.15

PART
SECTION A-A



CONTACT POINT

3.40

0.65 ±0.05 TYP

2.54 x No. OF PITCHES PER ROW

2.54 x No. OF WAYS PER ROW + 0.40 ±0.25

ORDER CODE:

M20-782XXXX

No. OF WAYS

02 TO 40

FINISH:

42 - SELECTIVE GOLD + TIN

46 - TIN

22 - SELECTIVE GOLD + TIN/LEAD

06 - TIN/LEAD

SPECIFICATION:

MATERIAL:

MOULDING FOR 42 & 46 - NYLON 6T UL94V-0, BLACK
MOULDING FOR 22 & 06 - POLYESTER UL94V-0, BLACK
CONTACTS - PHOSPHOR BRONZE

FINISH:

42 - GOLD ON CONTACT AREA, 100% TIN
ON TAILS

46 - 100% TIN

22 - GOLD ON CONTACT AREA,
TIN/LEAD ON TAILS

06 - TIN/LEAD

ELECTRICAL:

CURRENT RATING - 3A

VOLTAGE PROOF - 500V AC/DC

CONTACT RESISTANCE - 20 MILLIOHMS MAX

INSULATION RESISTANCE - 5,000 MEGOHMS MIN

ENVIRONMENTAL:

TEMPERATURE RANGE - -40° TO +105°

MECHANICAL:

INSERTION FORCE - 5N MAX

WITHDRAWAL FORCE - 0.5N MIN

DURABILITY - 50 OPERATIONS

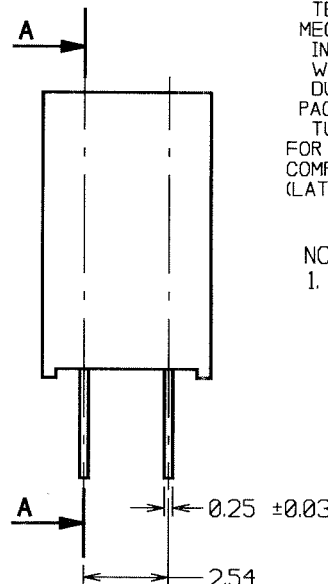
PACKING:

TUBE

FOR COMPLETE SPECIFICATION SEE
COMPONENT SPECIFICATION C001XX
(LATEST ISSUE)

NOTES:

1. RECOMMENDED PCB HOLE SIZE = Ø1.00mm.



JAE	3	03.06.04	8008
NAME	ISS.	DATE	C/NOTE
APPROVED:			
CHECKED:			
DRAWN:		J. EVANS	
CUSTOMER REF.:			
ASSEMBLY DRG:			

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U.S.A.

HARWIN PLC
U.K.

HARWIN PTE
SINGAPORE

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TOLERANCES

X. = ±1mm

X.X = ±0.25mm

X.XX = ±0.10mm

X.XXX = ±0.01mm

ANGLES = ±5°

UNLESS STATED

MATERIAL:

SEE ABOVE

FINISH: SEE ABOVE

S/AREA: mm²

TITLE:

2.54mm PITCH DIL VERTICAL
PC TAIL SOCKET ASSEMBLY

DRAWING NUMBER:

M20-783XXXX

SHT
3
OF
3

Customer Information Sheet

DRAWING No.: M20-788XXXX

SHEET 3 OF 3

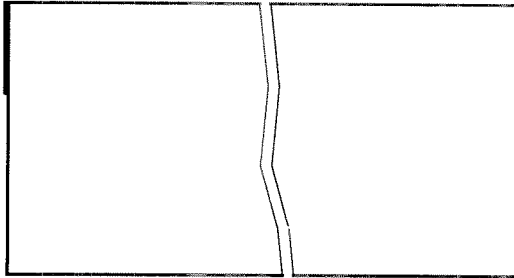
IF IN DOUBT - ASK

©

NOT TO SCALE

THIRD ANGLE PROJECTION

ALL DIMENSIONS IN mm

**SPECIFICATION:****MATERIAL:**

MOULDING FOR 42 & 46 - NYLON 6T UL94V-0, BLACK
MOULDING FOR 22 & 06 - POLYESTER UL94V-0, BLACK
CONTACTS - PHOSPHOR BRONZE

FINISH:

42 - GOLD ON CONTACT AREA, 100% TIN
ON TAILS
46 - 100% TIN
22 - GOLD ON CONTACT AREA, TIN/LEAD ON TAILS
06 - TIN/LEAD

ELECTRICAL:

CURRENT RATING - 3A
VOLTAGE PROOF - 500V AC/DC
CONTACT RESISTANCE - 20 MILLIOHMS MAX
INSULATION RESISTANCE - 5,000 MEGOHMS MIN

ENVIRONMENTAL:

TEMPERATURE RANGE - -40° TO +105°

MECHANICAL:

INSERTION FORCE = 5N MAX
WITHDRAWAL FORCE = 0.5N MIN
DURABILITY = 50 OPERATIONS

PACKING:

TUBE

FOR COMPLETE SPECIFICATION SEE COMPONENT
SPECIFICATION C001XX (LATEST ISSUE)

ORDER CODE:**M20-788XXXX**

No. OF WAYS _____
02 TO 40

FINISH:

42 - SELECTIVE GOLD + TIN
46 - TIN
22 - SELECTIVE GOLD + TIN/LEAD
06 - TIN/LEAD

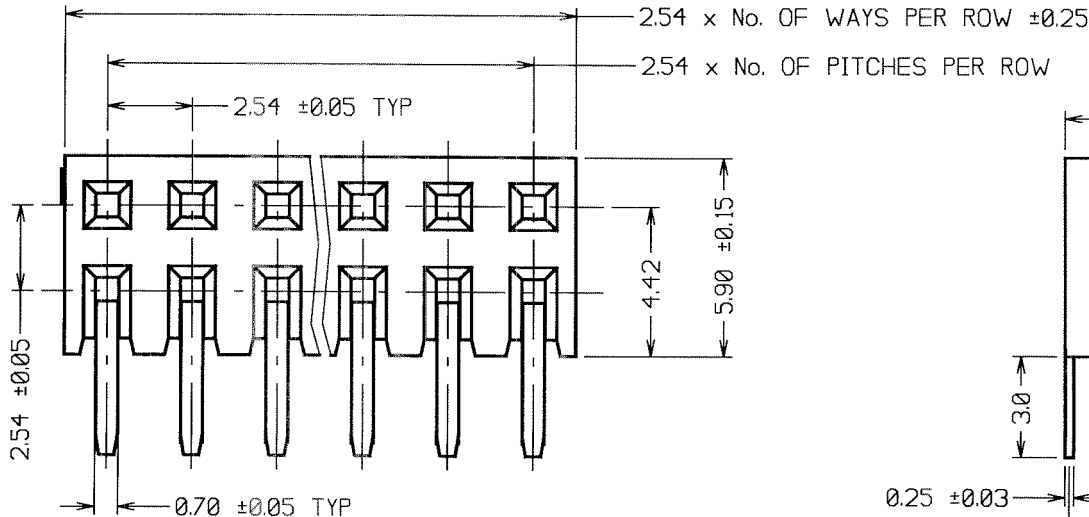
2.54 x No. OF PITCHES

2.54 TYP

RECOMMENDED
PAD LAYOUT

7.87

Ø1.00 TYP

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TOLERANCES

X. - ±1mm
X.X - ±0.25mm
X.XX - ±0.10mm
X.XXX - ±0.01mm
ANGLES - ±5°
UNLESS STATED

MATERIAL:

SEE ABOVE

FINISH: SEE ABOVE**S/AREA:** mm²**TITLE:**

2.54mm PITCH DIL PC TAIL
HORIZONTAL SOCKET ASSEMBLY

DRAWING NUMBER:**M20-788XXXX**

SHT
3
OF
3

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Customer Information Sheet

DRAWING No.: M20-789XXXX

SHEET 3 OF 3

IF IN DOUBT - ASK

(C)

NOT TO SCALE

THIRD ANGLE PROJECTION

ALL DIMENSIONS IN mm

ORDER CODE:

M20-789XXXX

No. OF WAYS

02 TO 40

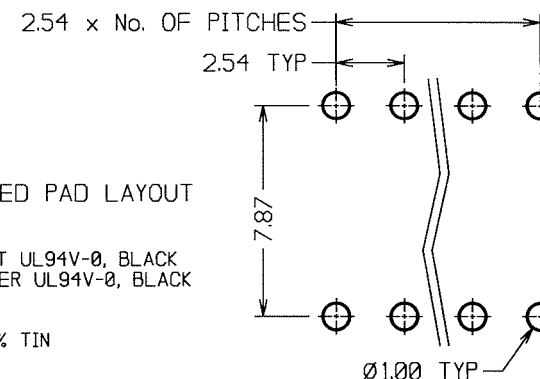
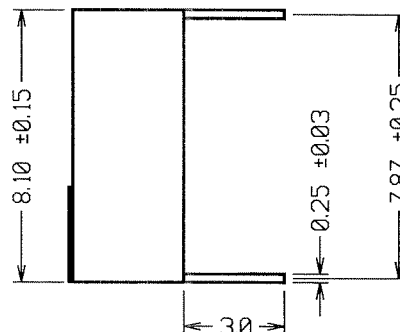
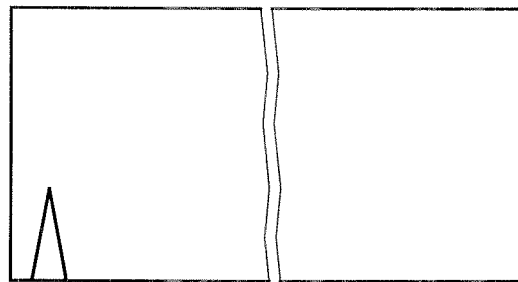
FINISH:

42 - SELECTIVE GOLD + TIN

46 - TIN

22 - SELECTIVE GOLD + TIN/LEAD

06 - TIN/LEAD



RECOMMENDED PAD LAYOUT

SPECIFICATION:

MATERIAL:

MOULDING FOR 42 & 46 - NYLON 6T UL94V-0, BLACK
MOULDING FOR 22 & 06 - POLYESTER UL94V-0, BLACK
CONTACTS - PHOSPHOR BRONZE

FINISH:

42 - GOLD ON CONTACT AREA, 100% TIN
ON TAILS

46 - 100% TIN

22 - GOLD ON CONTACT AREA, TIN/LEAD ON TAILS

06 - TIN/LEAD

ELECTRICAL:

CURRENT RATING - 3A

VOLTAGE PROOF - 500V AC/DC

CONTACT RESISTANCE - 20 MILLIOHMS MAX

INSULATION RESISTANCE - 5,000 MEGOHMS MIN

ENVIRONMENTAL:

TEMPERATURE RANGE - -40° TO +105°

MECHANICAL:

INSERTION FORCE - 5N MAX

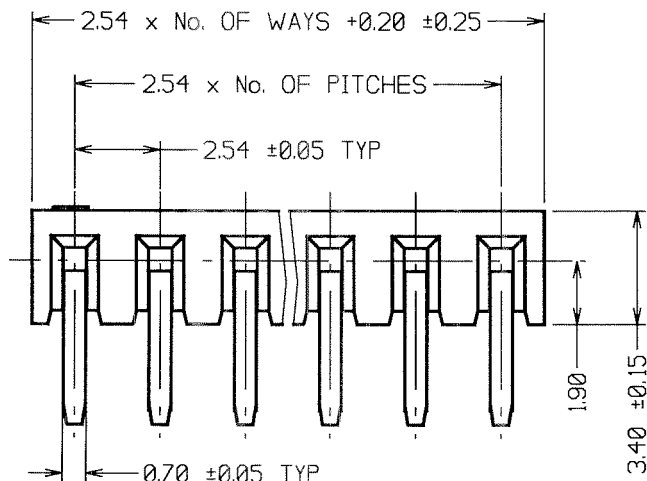
WITHDRAWAL FORCE - 0.5N MIN

DURABILITY - 50 OPERATIONS

PACKING:

TUBE

FOR COMPLETE SPECIFICATION SEE COMPONENT
SPECIFICATION C001XX (LATEST ISSUE)



JAE	2	03.06.04	8008
NAME	ISS.	DATE	C/NOTE
APPROVED: <i>[Signature]</i>			
CHECKED: <i>[Signature]</i>			
DRAWN: J. EVANS			
CUSTOMER REF.:			
ASSEMBLY DRG:			

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TOLERANCES

X. - ±1mm

XX - ±0.25mm

XXX - ±0.10mm

X.XXX - ±0.01mm

ANGLES = ±5°

UNLESS STATED

MATERIAL:

SEE ABOVE

FINISH: SEE ABOVE

S/AREA: mm²

TITLE:

2.54mm PITCH SIL PC TAIL
HORIZONTAL SOCKET ASSEMBLY

DRAWING NUMBER:

M20-789XXXX

SHT
3
OF
3