

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number:

0330123021

Status:

Active

Overview:

[mx150_sealed_connector_system](#)

Description:

MX150™ Female Terminal, Tin (Sn) Plating, 14-16 AWG, Left Reel Payoff, Large Polarization Rib, Contact Material Thickness 0.30mm (.012")

Documents:

[Drawing \(PDF\)](#)

[RoHS Certificate of Compliance \(PDF\)](#)

General

Product Family

Crimp Terminals

Series

33012

Comments

Left Reel Payoff, Large Polarization Rib

Crimp Quality Equipment

Yes

Overview

[mx150_sealed_connector_system](#)

Product Name

MX150™

Physical

Gender

Female

Material - Metal

High Performance Alloy (HPA)

Material - Plating Mating

Tin

Material - Plating Termination

Tin

Packaging Type

Reel

Plating min: Mating (µin)

20.00

Plating min: Mating (µm)

0.500

Plating min: Termination (µin)

20.00

Plating min: Termination (µm)

0.50

Termination Interface: Style

Crimp or Compression

Wire Insulation Diameter

2.60mm (.102") max.

Wire Size AWG

14, 16

Wire Size mm²

1.5

Electrical

Current - Maximum per Contact

22A

Voltage - Maximum

250V

Material Info

Reference - Drawing Numbers

Sales Drawing

SD-33012-002



image - Reference only

Series

EU RoHS

ELV and RoHS

Compliant

REACH SVHC

Contains SVHC: No

Halogen-Free

Status

Not Reviewed

China RoHS



Need more information on product environmental compliance?

Email productcompliance@molex.com
For a multiple part number RoHS Certificate of Compliance, [click here](#)

Please visit the [Contact Us](#) section for any non-product compliance questions.

Search Parts in this Series

33012Series

Use With

33472 Dual Row Housing, 33476 Hybrid Housing, 33471 Single Row Housing

Application Tooling | FAQ

Tooling specifications and manuals are found by selecting the products below. Crimp Height Specifications are then contained in the Application Tooling Specification document.

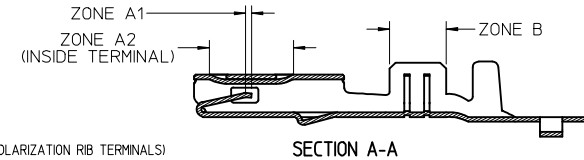
Global

Description	Product #
Manual Extraction Tool	0638131500
FineAdjust™ Applicator	0639000700
Hand Crimp Tool, 14-16AWG	0638115900
Hand Crimp Tool, Metric 1.00 and 1.50	0638116100

This document was generated on 05/19/2010

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PLATING INFORMATION



PLATING NOTES: (FOR SMALL AND LARGE POLARIZATION RIB TERMINALS)

1. PRECIOUS METAL PLATING:

ZONE A1 AND ZONE A2:
PER MOLEX ES-88 REVISION REL

BASE LAYER: ELECTRODEPOSITED DUCTILE SULFAMATE NICKEL
THICKNESS: 125 - 225 MICROMETERS

PRECIOUS LAYER: GOLD OR SILVER

GOLD: ELECTRODEPOSITED GOLD
THICKNESS: 0.76 MICROMETERS MINIMUM

SILVER: ELECTRODEPOSITED PURE SILVER (0.5% MAX IMPURITIES)
THICKNESS: 19 - 33 MICROMETERS
FINISH: SEMI-BRIGHT
ANTI-TARNISH TREATMENT FOR SILVER PLATING
EVABRITE WS

ZONE B:
TIN PLATING: PER MOLEX ES-88 REVISION REL

BASE LAYER: ELECTRODEPOSITED DUCTILE SULFAMATE NICKEL
THICKNESS: 125-225 MICROMETERS

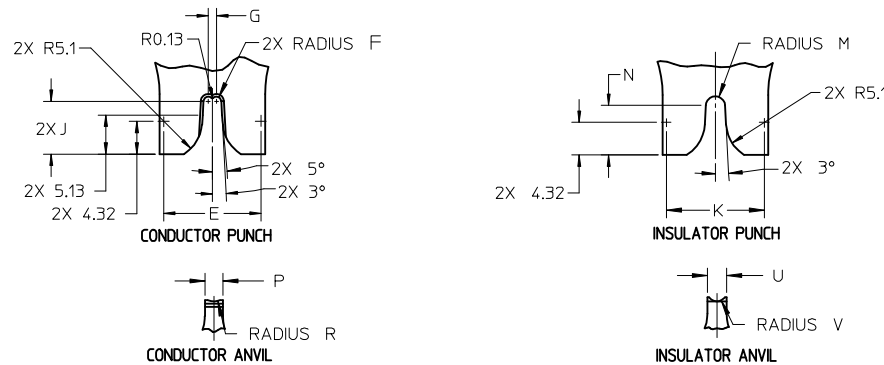
TIN LAYER: ELECTRODEPOSITED 100% TIN MATTE FINISH
THICKNESS: 250 - 400 MICROMETERS

2. TIN PLATING: (ENTIRE TERMINAL)

BASE LAYER: ELECTRODEPOSITED ADVANCED TIN BARRIER
THICKNESS: 0.25-100 MICROMETERS

TIN LAYER: ELECTRODEPOSITED REFLOW TIN, 100% TIN
NO BRIGHTENERS
THICKNESS: 0.50-100 MICROMETERS

DIMENSIONS FOR LARGE POLARIZATION RIB TERMINAL ONLY



CRIMP TOOL INFORMATION

SEE TABLE 2 FOR TABLED DIMENSIONS

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. MATING TERMINAL SHOWN ON SD-33000-001

2. MATERIAL: ASTM B422, UNS C19025, HR04
THICKNESS: 0.30 mm ±0.01
TEMPER: FULL HARD (REF)
TENSILE: 496 MIN MPA
PLATING: SEE PLATING NOTES ABOVE

3. MEETS PERFORMANCE SPECIFICATION FOR CABLE TO TERMINAL
ELECTRICAL CRIMPS PER SAE/USCAR-21 (8/2001)

4. MEETS PERFORMANCE STANDARD FOR AUTOMOTIVE ELECTRICAL
CONNECTOR SYSTEMS FOR SAE/USCAR-2, REV. 4 (TEMP CLASS 3)
(4/2001)

5. MEETS ELECTRICAL CONNECTION SYSTEM DESIGN SPECIFICATION
(SDS) REV.11 (5/2002)

6. MEETS FIELD CORRELATED LIFE TEST (FCLT) PER
SAE/USCAR-20 (11/2001)

7. MEETS WIRING COMPONENT DESIGN GUIDELINES SAE/USCAR-12
REV 2 (12/2001)

8. TSC ON A DIMENSION TO BE INTERPRETED AS DISTANCE TO
A THEORETICAL SHARP CORNER AS IF THE RADIUS WERE NOT
PRESENT

9. DRAWING CONFORMS TO AVP-(T401/T406)-001 REVISION A
DATED 2/16/99

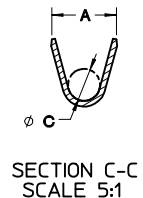
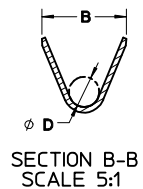
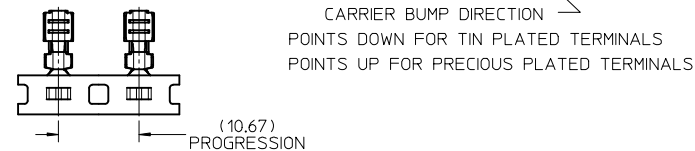
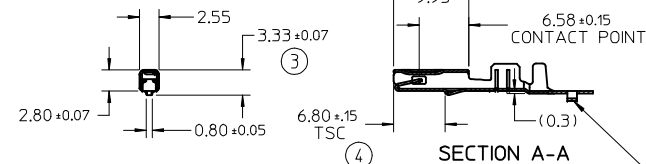
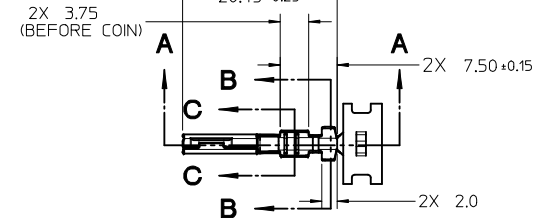
10. REFERENCE 97B5-14474-AAB FOR LARGE POLARIZATION RIB
CAVITY SPECIFICATION

11. INSERTION FORCE (TIN) AVG. FROM PV TESTING =
3.8N LARGE POLARIZATION RIB
3.5N SMALL POLARIZATION RIB
(REFERENCE)

12. ALL DIMENSIONS EXCEPT ①, ②, ③ & ④ ARE COMMON TO
BOTH SMALL AND LARGE POLARIZATION RIB TERMINALS

13. REFERENCE PK-31300-516 FOR REEL DIRECTION

14. REFERENCE CS-33012-002 FOR ADDITIONAL CRIMP INFORMATION



ENTER DESCRIPTION
EC NO: UAU2010-0107
DRAWN BY: DRINKER GUSON
CHKD BY: DHIR
APPR: BMOSER
2009/08/19
2009/08/20

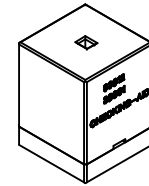
QUALITY SYMBOLS
▽=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)			
	mm	INCH	
4 PLACES	± .005	± .0005	
3 PLACES	± .005	± .0005	
2 PLACES	± .010	± .0010	
1 PLACE	± .03	± .0030	
ANGULAR ± 3 °			

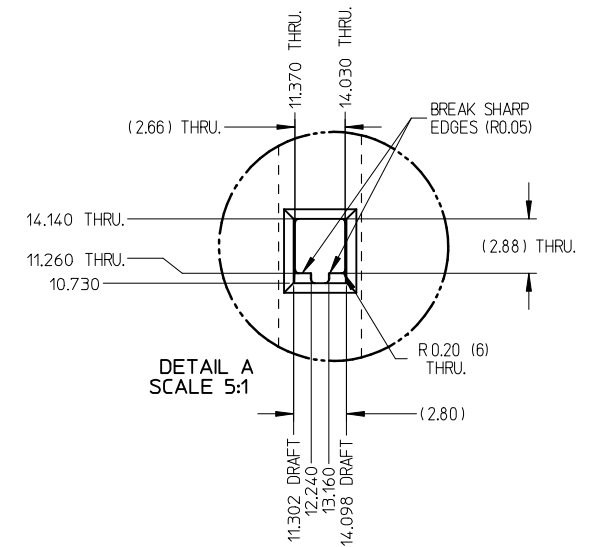
6	DIMENSION STYLE	
	MM ONLY	
	DRAWN BY	DATE
	L. PULLIAM	2005/06/21
	CHECKED BY	DATE
	A. DHIR	2005/06/21
	APPROVED BY	DATE
	B. MOSER	2005/06/22
	MATERIAL NO.	
	SEE TABLE	
SIZE	THIS DRAWING CONTAINS INFORMATION INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

		13		12		11		10		9		8		7		6		5		4		3		2		1	
TABLE 1 - TERMINAL CRIMP DIM. REFERENCE TABLE																											
		SUPPLIER PART NO.		FORD PART NO.		PLATING		WIRE SIZE (awg)		WIRE SPECIFICATION		CONDUCTOR (CH) (SEC Z-Y) ±0.05 mm		CONDUCTOR (CW) (SEC Z-Y) ±0.10 mm		INSULATOR (IH) (SEC Y-Y) ±0.10 mm		INSULATOR (IW) (SEC Y-Y) ±0.10 mm		WIRE PULL FORCE (N)							
SMALL POLARIZATION RIB																											
RIGHT PAYOFF LEFT PAYOFF																											
33012-2001 33012-3001 7C3T-14474-EA TIN 14 ML-123A 1.65 2.45 2.90 2.75 268 ML-195A1 1.65 2.45 2.70 2.60 268 16 ML-123A 1.35 2.45 2.40 2.60 222 ML-123A 1.25 2.15 2.00 2.30 157 SAE J1128 (IGXL) 1.25 2.15 2.40 2.60 158 ML-123A 1.15 2.15 1.90 2.10 128 HIFLON WIRE ¹ 1.15 2.15 1.90 2.10 135 SAE J1128 (IGXL) 1.15 2.15 2.00 2.30 105 33012-2002 33012-3002 7C3T-14474-DA TIN 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2003 33012-3003 7C3T-14474-CA TIN 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2003* 33012-3003* 7C3T-14474-CA* TIN 0.50mm ² JASO D 611 (AVSS) 1.10 1.60 1.85 1.90 125 0.35mm ² WSK-1A348-A2 0.95 1.60 1.70 1.90 50 ML-123A 1.65 2.45 2.90 2.75 268 ML-195A1 1.65 2.45 2.70 2.60 268 16 ML-123A 1.35 2.45 2.40 2.60 222 ML-123A 1.25 2.15 2.00 2.30 157 SAE J1128 (IGXL) 1.25 2.15 2.40 2.60 158 ML-123A 1.15 2.15 1.90 2.10 128 HIFLON WIRE ¹ 1.15 2.15 1.90 2.10 135 SAE J1128 (IGXL) 1.15 2.15 2.00 2.30 105 33012-2004 33012-3004 7C3T-14474-GA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2005 33012-3005 7C3T-14474-FA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2005* 33012-3005* 7C3T-14474-FA* GOLD 0.50mm ² JASO D 611 (AVSS) 1.10 1.60 1.85 1.90 125 0.35mm ² WSK-1A348-A2 0.95 1.60 1.70 1.90 50 ML-123A 1.65 2.45 2.90 2.75 268 ML-195A1 1.65 2.45 2.70 2.60 268 16 ML-123A 1.35 2.45 2.40 2.60 222 ML-123A 1.25 2.15 2.00 2.30 157 SAE J1128 (IGXL) 1.25 2.15 2.40 2.60 158 ML-123A 1.15 2.15 1.90 2.10 128 HIFLON WIRE ¹ 1.15 2.15 1.90 2.10 135 SAE J1128 (IGXL) 1.15 2.15 2.00 2.30 105 33012-2006 33012-3006 7C3T-14474-HA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2007 33012-3007 7C3T-14474-IA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2008 33012-3008 7C3T-14474-JA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2009 33012-3009 7C3T-14474-KA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2010 33012-3010 7C3T-14474-LA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1.60 2.45 2.90 2.75 231 150mm ² ML-126A1 1.40 2.45 2.60 2.60 257 1.00mm ² ML-126A1 1.30 2.15 2.00 2.30 211 0.75mm ² ML-126A1 1.25 2.15 1.95 2.10 142 ML-126A1 1.10 1.60 1.80 1.90 111 33012-2011 33012-3011 7C3T-14474-MA GOLD 22 ML-123A 1.00 1.60 1.85 1.90 88 2.00mm ² JASO D 611 (AVSS) 1																											

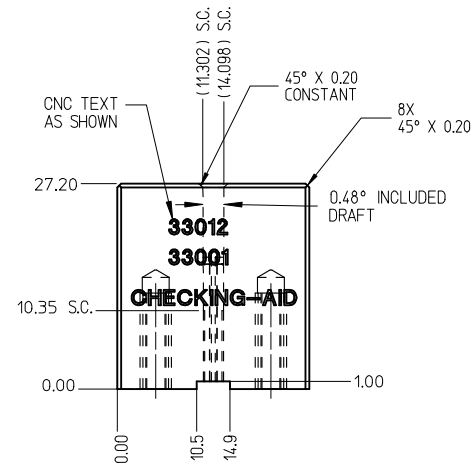
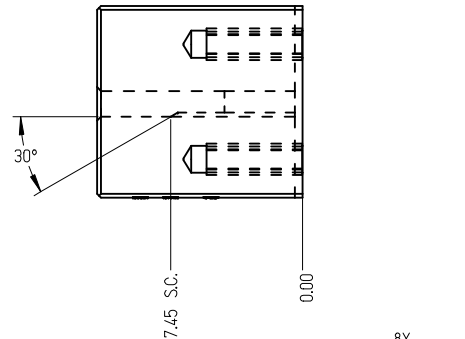
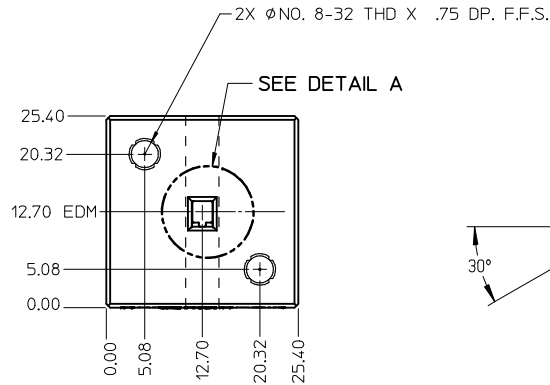
THIS CHECKING - AID IS FOR SMALL POLARIZATION RIB TERMINALS ONLY



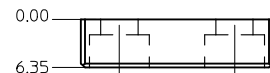
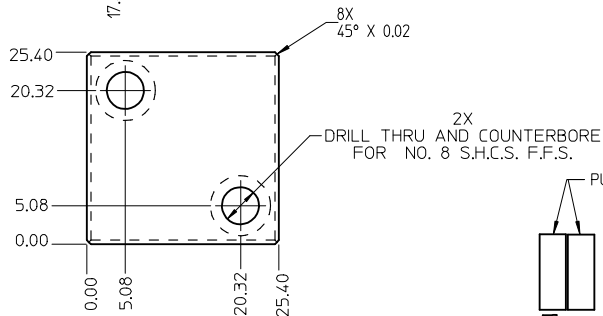
CHECKING - AID ASSEMBLY
SCALE 1:1



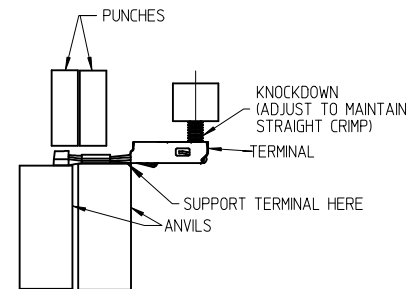
DETAIL A
SCALE 5:1



CHECKING - AID
UPPER



CHECKING - AID
LOWER



CRIMP REQUIREMENTS:

1. CRIMP STRAIGHTNESS MUST BE MAINTAINED
USE A KNOCKDOWN TOOL LOCATED AS SHOWN
TERMINAL BOX MUST NOT BE DEFORMED
2. AFTER CRIMPING, THE CRIMPED TERMINAL (AND UP TO 5 mm OF WIRE PAST THE INSULATOR CUTOFF TAB) MUST FIT FREELY INTO THE CHECKING-AID SHOWN ON THIS PAGE
3. FOR OTHER MECHANICAL REQUIREMENTS ON CRIMPED TERMINALS, REFER TO SAE/USCAR-21 (5-13-02) SECTIONS 4.2 (VISUAL INSPECTION), 4.2 (CROSS SECTION ANALYSIS) AND 4.4 (CONDUCTOR CRIMP PULLOUT FORCE)

UPPER & LOWER
CHECKING-AID
A2 TOOL STEEL
HARDEN & GRIND
ROCKWELL "C" 56-58

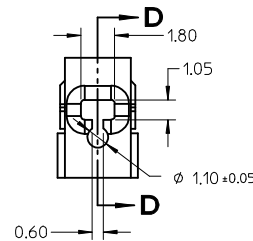
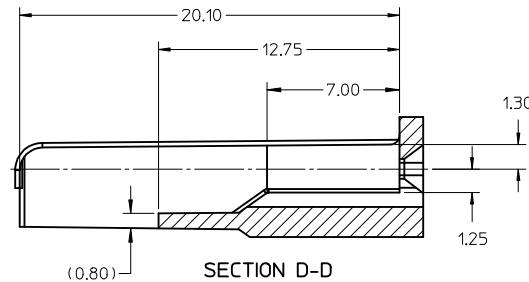
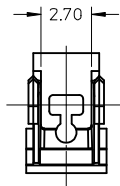
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DRUNKFERGUSON	2009/08/19
CHKDA:DHIR	2009/08/19
APPR:BMOSER	2009/08/20
REV	
B1	

QUALITY SYMBOLS	
▽=0	
▽=0	
REV	

GENERAL TOLERANCES (UNLESS SPECIFIED)	
	mm
4 PLACES	± .005
3 PLACES	± .005
2 PLACES	± .010
1 PLACE	± .030
ANGULAR ± 3 °	

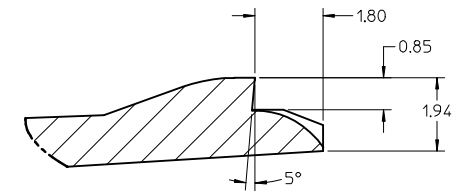
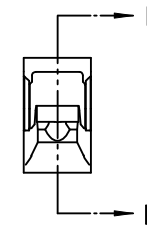
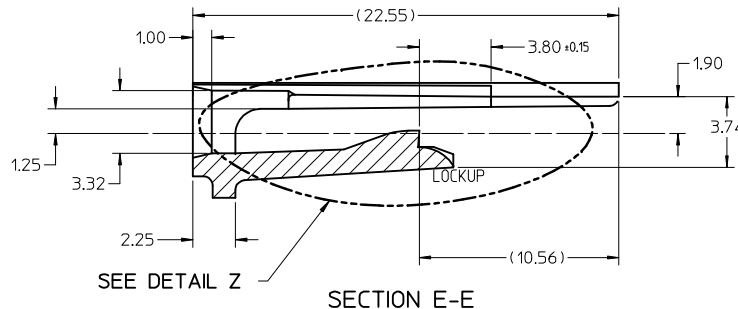
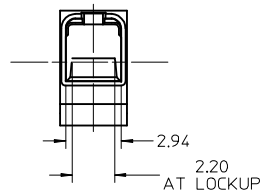
DIMENSION STYLE	
MM ONLY	
DRAWN BY	DATE
L. PULLIAM	2005/06/21
CHECKED BY	DATE
A. DHIR	2005/06/21
APPROVED BY	DATE
B. MOSER	2005/06/22
MATERIAL NO.	
SIZE	
SEE TABLE	

SCALE 2:1	DESIGN UNITS METRIC	 THIRD ANGLE PROJECTION
TITLE MX150 RECEPTACLE TERMINAL		
MOLEX INCORPORATED		
DOCUMENT NO. SD-33012-002		SHEET NO. 3 OF 5
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

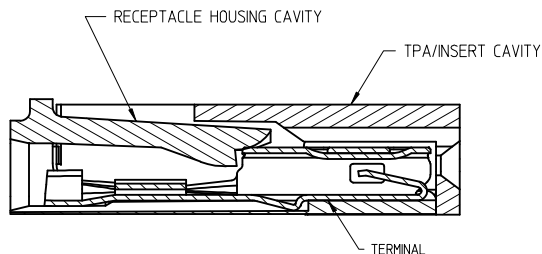


NOTES: UNLESS OTHERWISE SPECIFIED

1. TOLERANCES: LINEAR ± 0.10
ANGULAR $\pm 3^\circ$
2. ALL DRAFT WITHIN TOLERANCE.
3. MAX RADII ON ALL CORNERS SHOWN SHARP: 0.10
4. MAX FLASH PERMISSIBLE: 0.1
5. EJECTOR PIN MARKS PERMISSIBLE IF FLUSH TO 0.25 BELOW SURFACE.
6. MATERIAL: HOUSING/FINGER SPECIFICATION ENGINEERED FOR MATERIAL WITH THE FOLLOWING PROPERTIES:
A. FLEXURAL MODULUS = 4,500 TO 9,400 MPa
PER ASTM TEST D790
B. ELONGATION AT YIELD = 2.3% OR BETTER
PER ASTM TEST D638 TYPE V
7. CAVITY SPEC FOR USE ONLY WITH MOLEX RECEPTACLE
TERMINAL PART NUMBERS SPECIFIED ELSEWHERE ON THIS
DRAWING

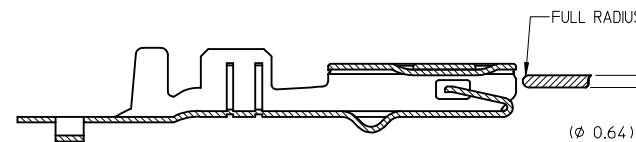
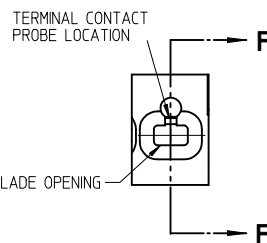


DETAIL Z
SCALE 20:1

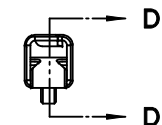


SECTION F-F

RECEPTACLE CAVITY ASSEMBLED VIEWS
FOR SMALL POLARIZATION RIB APPLICATIONS
FIG. 1



SECTION D-D
FOR LARGE POLARIZATION RIB APPLICATIONS
FIG. 2



PROBING DOWN THE
THROAT MUST USE
THIS TERMINAL PROBE

PROBE PIN DETAILS:
MANUFACTURER: LONE STAR INDUSTRIAL
PART NUMBER: LS054R-403-N-4.6
PIN DIAMETER: 0.025 IN (0.64mm)
TIP SHAPE: SPHERICAL
TEL: 915-779-7255

PREFERRED PROBING LOCATION
IS NOT ON SPRING MEMBER

IF ELECTRICAL CONTINUITY PROBE
TOUCHES SPRING MEMBER USE
PROBING AS SHOWN IN FIG. 2

REV	DESCRIPTION
B1	ENTER DESCRIPTION EC NO: UAU2010-0107 DRWN:FERGUSON 2009/08/18 CHKD: A.DHIR 2009/08/19 APPR: B.MOSER 2009/08/20

QUALITY
SYMBOLS
 = 0
 = 0.1

GENERAL TOLERANCES
(UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± 0.10	± 0.004
3 PLACES	± 0.005	± 0.0002
2 PLACES	± 0.10	± 0.004
1 PLACE	± 0.3	± 0.012
ANGULAR $\pm 3^\circ$		

DIMENSION STYLE
MM ONLY

DRAWN BY	DATE
L. PULLIAM	2005/06/21
CHECKED BY	DATE
A. DHIR	2005/06/21
APPROVED BY	DATE
B. MOSER	2005/06/22

SCALE
5:1

DESIGN UNITS
METRIC

THIRD ANGLE
PROJECTION

MX150
RECEPTACLE TERMINAL



MOLEX INCORPORATED

SEE TABLE

DOCUMENT NO.
SD-33012-002

SHEET NO.
4 OF 5

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX
INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

13	12	11	10	9	8	7	6	5	4	3	2	1									
TABLE 2 - TERMINAL GRIP/CRIMP TOOL DIM. REFERENCE TABLE																					
SUPPLIER PART NO.		FORD PART NO.	PLATING (STAMPING)	WIRE APPLICATION		WIRE SPECIFICATION	A±0.30	B±0.30	C±0.30	D±0.30	E±0.005	F±0.005	G±0.005	J±0.005	K±0.005	M±0.005	N±0.005	P±0.005	R±0.005	U±0.005	V±0.005
SMALL POLARIZATION RIB				SAE	METRIC																
RIGHT PAYOFF	LEFT PAYOFF																				
33012-2001	33012-3001	7C3T-14474-EA	TIN	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33012-2002	33012-3002	7C3T-14474-DA	TIN	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33012-2003	33012-3003	7C3T-14474-CA	TIN	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33012-2003*	33012-3003*	7C3T-14474-CA*	TIN	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-2003	33001-3003	7C3T-14474-HA	GOLD	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-2004	33001-3004	7C3T-14474-GA	GOLD	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-2005	33001-3005	7C3T-14474-FA	GOLD	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-2005*	33001-3005*	7C3T-14474-FA*	GOLD	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-4001	33001-5001	7U5T-14474-UA	SILVER	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-4002	33001-5002	7U5T-14474-TA	SILVER	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-4003	33001-5003	7U5T-14474-SA	SILVER	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-4003*	33001-5003*	7U5T-14474-SA*	SILVER	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
LARGE POLARIZATION RIB																					
33012-2021	33012-3021	7C3T-14474-LA	TIN	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33012-2022	33012-3022	7C3T-14474-KA	TIN	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33012-2023	33012-3023	7C3T-14474-JA	TIN	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33012-2023*	33012-3023*	7C3T-14474-JA*	TIN	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-2021	33001-3021	7C3T-14474-PA	GOLD	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-2022	33001-3022	7C3T-14474-NA	GOLD	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-2023	33001-3023	7C3T-14474-MA	GOLD	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-2023*	33001-3023*	7C3T-14474-MA*	GOLD	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-4021	33001-5021	7U5T-14474-RA	SILVER	14	2.0	MIL-123A JASO D 611 (AVSS)	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	13.12	1.35	6.91	2.44	6.11	2.72	1.40
				14	-	MIL-135A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				16	1.5	MIL-123A/MIL-126A1	3.9	4.4	1.7	1.6	12.82	0.6	1.19	7.05	12.96	1.28	6.51	2.44	6.11	2.52	1.30
				18	1.0	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-4022	33001-5022	7U5T-14474-PA	SILVER	18	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.96	1.28	6.51	2.14	1.93	2.52	1.30
				20	0.75	MIL-123A/MIL-126A1	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.42	1.03	6.36	2.14	1.93	2.04	1.05
				20	-	SAE J1128 (IGXL)	3.3	3.1	1.3	1.4	12.46	0.57	0.99	6.52	12.65	1.13	6.46	2.14	1.93	2.23	1.15
33001-4023	33001-5023	7U5T-14474-NA	SILVER	22	0.5	MIL-123A/MIL-126A1 JASO D 611 (AVSS)	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95
33001-4023*	33001-5023*	7U5T-14474-NA*	SILVER	-	0.35	WSK-1A348-A2	2.5	2.6	0.9	1.0	11.97	0.42	0.72	6.57	12.24	0.93	6.31	1.60	1.44	1.84	0.95