

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number:

0330122021

Status:

Active

Overview:

[mx150_sealed_connector_system](#)

Description:

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



Series

image - Reference only

Documents:

Drawing (PDF)

RoHS Certificate of Compliance (PDF)

General

Product Family	Crimp Terminals
Series	33012
Comments	Right 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
---------------	--------------

EU RoHS

ELV and RoHS
Compliant
REACH SVHC
Contains SVHC: No
Halogen-Free
Status

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.

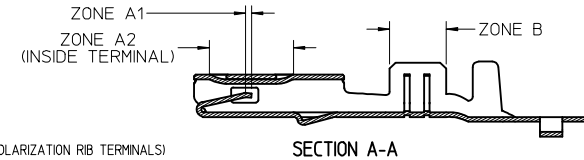
Search Parts in this Series
[33012Series](#)

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
Hand Crimp Tool, 14-16AWG	0638115900
Hand Crimp Tool, Metric 1.00 and 1.50	0638116100

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

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

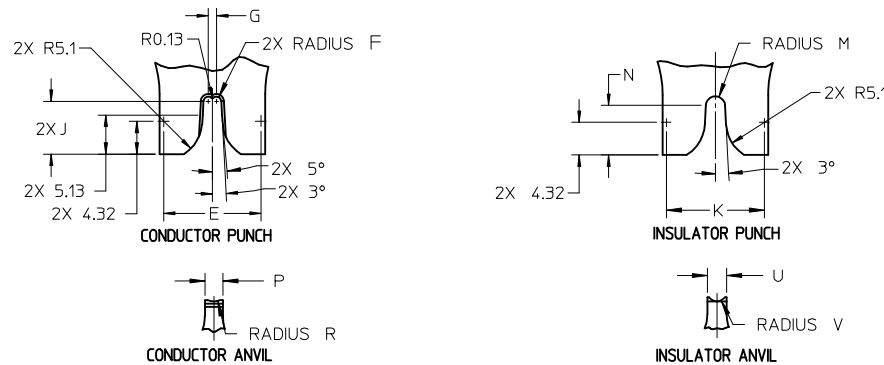
TIN LAYER: ELECTRODEPOSITED 100% TIN MATTE FINISH
THICKNESS: 250 - 400 MICROMETERS

2. TIN PLATING: (ENTIRE TERMINAL)

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

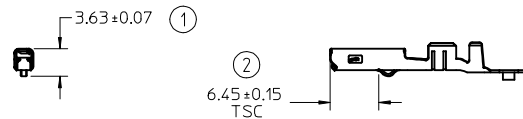
TIN LAYER: ELECTRODEPOSITED REFLOW TIN, 100% TIN
NO BRIGHTENERS
THICKNESS: 0.50-100 MICROMETERS

DIMENSIONS FOR LARGE POLARIZATION RIB TERMINAL ONLY



CRIMP INFORMATION

SEE NOTE 14



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

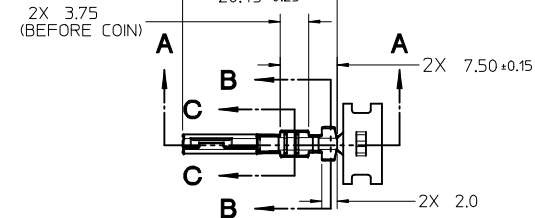
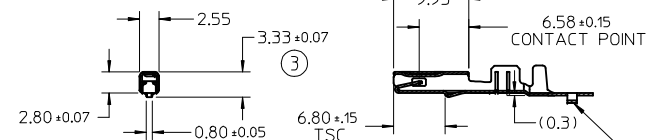
10. REFERENCE 97B5-14474-AAB FOR LARGE POLARIZATION RIB
CAVITY SPECIFICATION

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

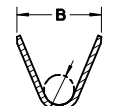


SECTION A-A

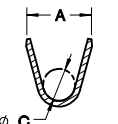
CARRIER BUMP DIRECTION
POINTS DOWN FOR TIN PLATED TERMINALS
POINTS UP FOR PRECIOUS PLATED TERMINALS



SCALE 1:1



SECTION B-B
SCALE 5:1



SECTION C-C
SCALE 5:1

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

QUALITY SYMBOLS
▽=0
▽=0

GENERAL TOLERANCES
(UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± 0.005	± 0.0005
3 PLACES	± 0.005	± 0.0005
2 PLACES	± 0.010	± 0.0010
1 PLACE	± 0.03	± 0.0030
ANGULAR	± 3 °	

DIMENSION STYLE
MM ONLY

DRAWN BY: L. PULLIAM
DATE: 2005/06/21

CHECKED BY: A. DHIR
DATE: 2005/06/21

APPROVED BY: B. MOSER
DATE: 2005/06/22

MATERIAL NO.
SEE TABLE

SIZE: C

SCALE: 2:1

DESIGN UNITS: METRIC

THIRD ANGLE PROJECTION

MX150
RECEPTACLE TERMINAL

MOLEX INCORPORATED

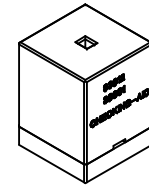
DOCUMENT NO.
SD-33012-002

SHEET NO.
1 OF 5

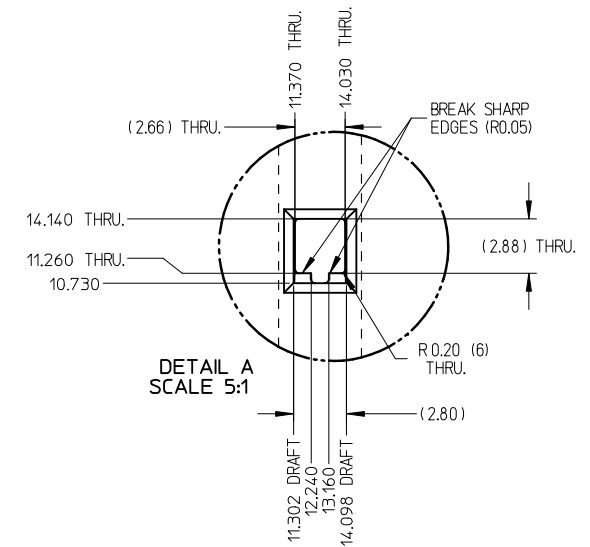
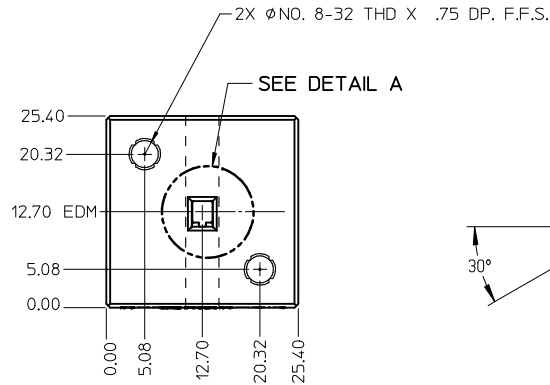
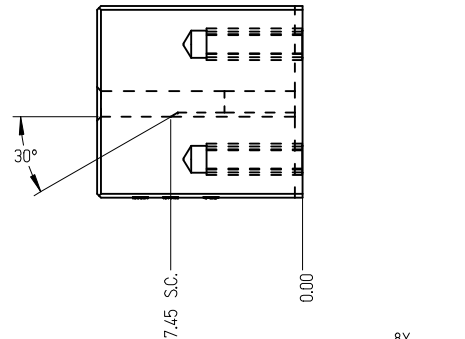
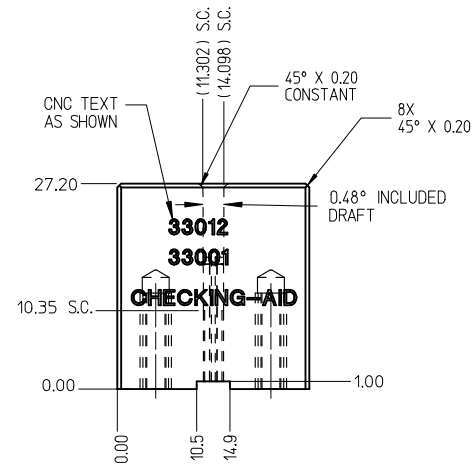
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

	13	12	11	10	9	8	7	6	5	4	3	2	1	
	TABLE 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-Z) ±0.10 mm	INSULATOR IH (SEC Y-Y) ±0.10 mm	INSULATOR IW (SEC Y-Y) ±0.10 mm	WIRE PULL FORCE (N)			
J	SMALL POLARIZATION RIB													
	RIGHT PAYOFF	LEFT PAYOFF												
	33012-2001	33012-3001	7C3T-14474-EA	TIN	14	MIL-123A	1.65	2.45	2.90	2.75	268			
					16	MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
					18	MIL-123A	1.25	2.15	2.00	2.30	157			
						SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					20	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						MIL-126A1	1.10	1.60	1.85	1.90	125			
						JASO D 611 (AVSSI)	1.10	1.60	1.70	1.90	50			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					20	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					22	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
E	LARGE POLARIZATION RIB													
	33012-2021	33012-3021	7C3T-14474-LA	TIN	14	MIL-123A	1.65	2.45	2.90	2.75	268			
					16	MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					20	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					20	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					22	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-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			
					20	MIL-123A	1.00	1.60	1.85	1.90	88			
						JASO D 611 (AVSSI)	1.60	2.45	2.90	2.75	231			
						MIL-126A1	1.40	2.45	2.60	2.60	257			
						MIL-126A1	1.30	2.15	2.00	2.30	211			
						MIL-126A1	1.25	2.15	1.95	2.10	142			
						MIL-126A1	1.10	1.60	1.80	1.90	111			
						JASO D 611 (AVSSI)	1.10	1.60	1.85	1.90	125			
						WSK-1A348-A2	0.95	1.60	1.70	1.90	50			
					14	MIL-123A	1.65	2.45	2.90	2.75	268			
						MIL-135A1	1.65	2.45	2.70	2.60	268			
						MIL-123A	1.35	2.45	2.40	2.60	222			
						MIL-123A	1.25	2.15	2.00	2.30	157			
					18	SAE J1128 (IGXL)	1.25	2.15	2.40	2.60	158			
						MIL-123A	1.15	2.1						

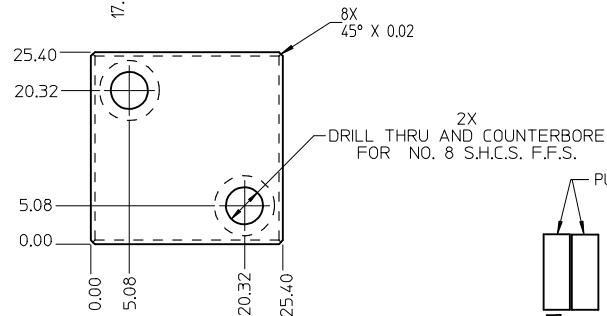
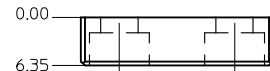
THIS CHECKING - AID IS FOR SMALL POLARIZATION RIB TERMINALS ONLY



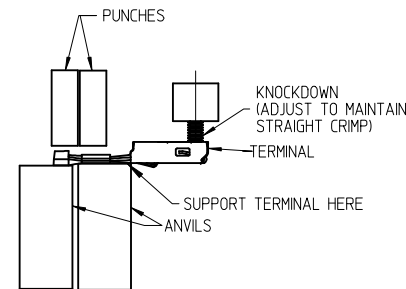
CHECKING - AID ASSEMBLY
SCALE 1:1



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

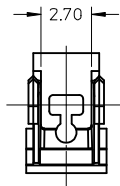
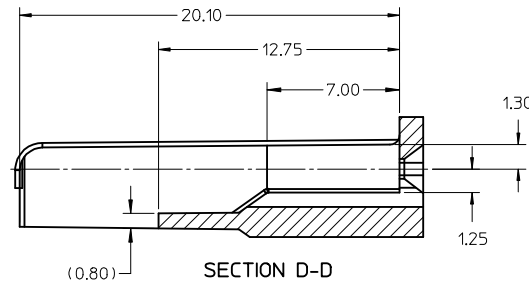
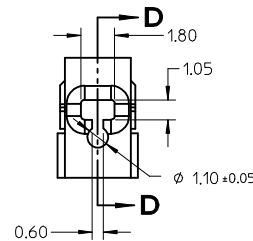
ENTER DESCRIPTION	
EC NO: UAU2010-0107	2009/08/18
DRUNKFERGUSON	2009/08/19
CHKDA:DHIR	2009/08/19
APPR:BMOSER	2009/08/20
REV	
B1	

QUALITY SYMBOLS	
▽=0	
▽=0	
REV	

GENERAL TOLERANCES (UNLESS SPECIFIED)	
mm	INCH
4 PLACES ± .---	± .---
3 PLACES ± 0.005	± .---
2 PLACES ± 0.10	± .---
1 PLACE ± 0.3	± .---
ANGULAR ± 3 °	

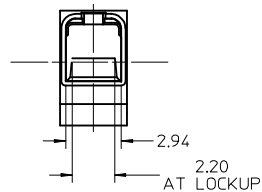
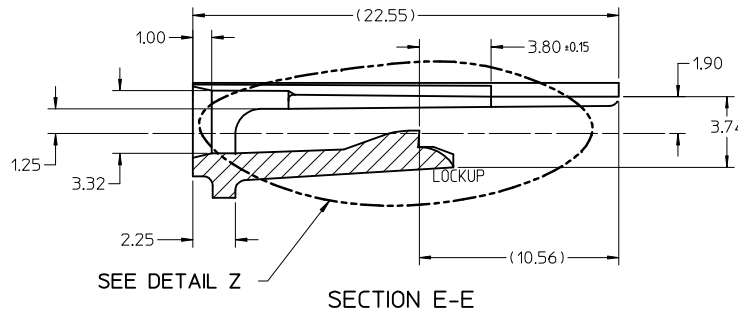
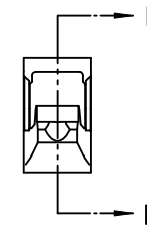
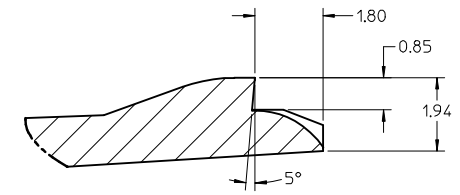
DIMENSION STYLE	
MM ONLY	
DRAWN BY	DATE
L. PULLIAM	2005/06/21
CHECKED BY	DATE
A. DHIR	2005/06/21
APPROVED BY	DATE
B. MOSER	2005/06/22
MATERIAL NO.	
SEE TABLE	
SIZE	
C	

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

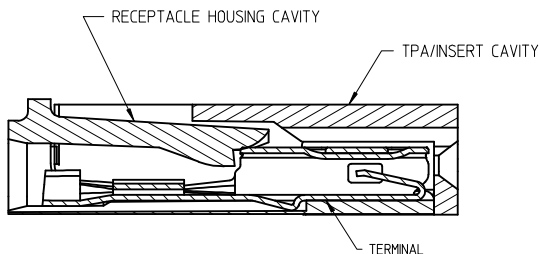


NOTES: UNLESS OTHERWISE SPECIFIED

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

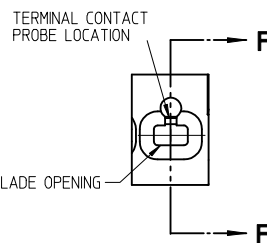
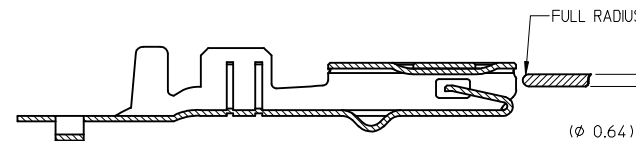


DETAIL Z
SCALE 20:1

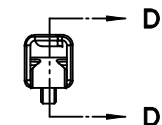


SECTION F-F

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:ADHIR 2009/08/19 APPR:BMOSER 2009/08/20

QUALITY
SYMBOLS
▽=0
▽=0

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 $\pm 3^\circ$		

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
C

SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
5:1	METRIC	
MX150 RECEPTACLE TERMINAL		
MOLEX INCORPORATED		
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