Molex 50-84-1010 PDF

深圳创唯电子有限公司

http://www.molex-connect.com

molex® TEST SUMMARY

MLX CONNECTOR SYSTEM (2.13 DIAMETER) HOUSING AND TERMINALS

1.0 SCOPE

This Test Summary covers the 6.35 mm (0.250 inch) centerline (pitch) connector series terminated with 14 to 20 AWG wire using Crimp technology with tin plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

DESCRIPTION	SERIES NUMBER
HOUSING, PLUG	42021
HOUSING, CAP	42022
14-20 AWG TERMINAL, PIN	42023
14-20 AWG TERMINAL, SOCKET	42024

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

REFER SD-42021-**, SD-42022-**
REFER SD-42023-****, SD-42024-****, SD-42023-001, SD-42024-001

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

Title: PRODUCT SPECIFICATION FOR 2.13 DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS
Document Number: PS-42022-0001

2.4 SAFETY AGENCY APPROVALS

UL FILE NUMBER…..E29179
CSA FILE NUMBER...LR19980

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 TESTING PROCEDURES

Refer Section 6 for Test Sequences.

4.0 RATINGS

4.1 VOLTAGE: Rated 600 Volts
Refer section 5.11 for more details

4.2 TEMPERATURE RISE

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	RESULT
4.2	Temperature Rise	20 AWG with 7 Amps	30ºC Maximum rise above ambient	**PASS**

5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	RESULT
5.1.1	Contact Resistance (Low Level)	Initial	3.5 milliohm MAXIMUM	**PASS**
5.1.2	Insulation Resistance	Initial	1000 Megohms MINIMUM	**PASS**
5.1.3	Dielectric Withstanding Voltage	Initial	No Breakdown	**PASS**

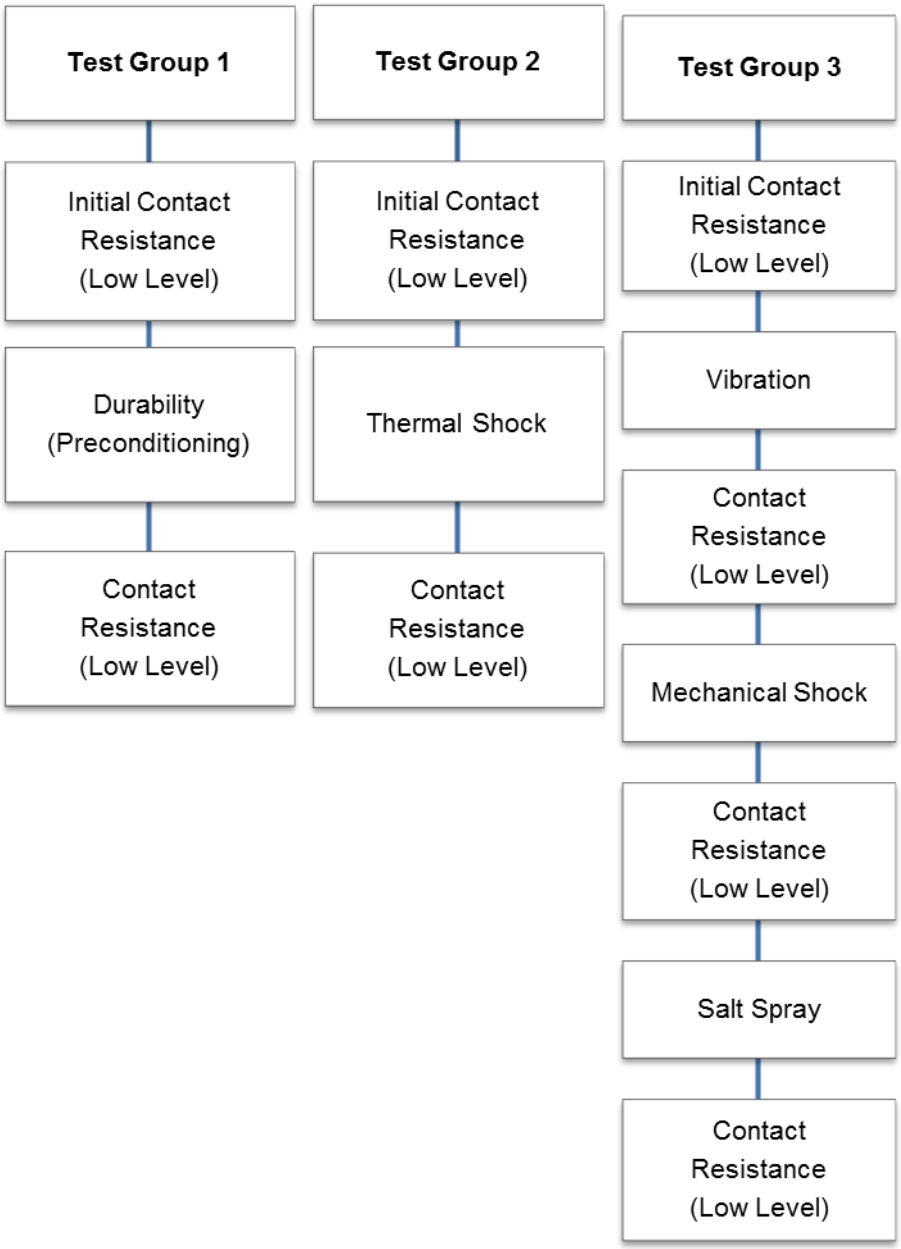
5.2 MECHANICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	RESULT
5.2.1	Connector mate force and unmate forces	Mate force per terminal	**6.67** N MAXIMUM (**1.5** lb_f) MAXIMUM	**PASS**
		Unmate force per terminal	**2.22** N MINIMUM (**0.5** lb_f) MINIMUM	
5.2.2	Terminal retention force	Initial	**66.72** N MINIMUM (**15** lb_f) MINIMUM	**PASS**
5.2.3	Durability	After 50 mating cycles	3.5 milliohms MAXIMUM	**PASS**
5.2.4	Vibration	Initial	3.5 milliohms MAXIMUM	**PASS**
		After Vibration	5 milliohms MAXIMUM	
			Visual: No damage	
			Discontinuity: 1 microsecond Max	
5.2.5	Mechanical Shock	Initial	3.5 milliohms MAXIMUM	**PASS**
		After Shock	6 milliohms MAXIMUM	
			Visual: No damage	
			Discontinuity: 1 microsecond Max	
5.2.6	Wire Pullout Force (Axial)	14 AWG	**222.4** N MINIMUM (**50** lb_f) MINIMUM	**PASS**
		20 AWG	**62** N MINIMUM (**14** lb_f) MINIMUM	
5.2.7	Terminal insertion force	Initial	**15.57** N MAXIMUM (**3.5** lb_f) MAXIMUM	**PASS**

5.3 ENVIRONMENTAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	RESULT
5.3.1	Thermal shock	See section 6 for test sequence	3.75 milliohm MAXIMUM	**PASS**
5.3.2	Salt Spray	See section 6 for test sequence	7 milliohm MAXIMUM	**PASS**

6.0 TEST SEQUENCES



MOLEX INCORPORATED
LISLE, ILL. 60532 U.S.A.

PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

1.0 Scope:
This specification covers the .250 inch (6.35mm) centerline tin plated connector series terminated to 14 to 20 AWG wire using crimp technology.

2.0 Product Description:
2.1 Product Name and Part Number

Product Name	Part Number
Housing, Plug, 1 circuit	42021-1*
Housing, Plug, 2 circuit	42021-2*
Housing, Plug, 3 circuit	42021-3*
Housing, Plug, 4 circuit	42021-4*
Housing, Plug, 6 circuit	42021-6*
Housing, Plug, 9 circuit	42021-9*
Housing, Plug, 12 circuit	42021-12*
Housing, Plug, 15 circuit	42021-15*
Housing, cap , 1 circuit	42022-1*
Housing, cap , 2 circuit	42022-2*
Housing, cap , 3 circuit	42022-3*
Housing cap , 4 circuit	42022-4*
Housing, cap , 6 circuit	42022-6*
Housing, cap , 9 circuit	42022-9*
Housing, cap , 12 circuit	42022-12*
Housing, cap , 15 circuit	42022-15*
Terminal, pin, tin plated	42023-1A1*
Terminal, socket, tin plated	42024-A1*

2.2 Materials, Platings and Markings
See the appropriate Sales Drawings for information on materials, platings and markings

3.0 Applicable Documents and Specifications:
See the Sales Drawings and the other sections of this Specification.

3.1 Agency approvals:
UL file number: E29179
CSA file number: LR19980

EC.NO. 10886306

DRWG. NO. PS-42022-0001

REV.	C	C	C	C	C	C
SHT.	1	2	3	4	5	6

FILE NAME PS42022X1	C = ▼ =	REVISE ONLY ON CAD SYSTEM	REV.	C
S01	THIS DRAWING CONTAINS INFORMATION THAT IS PROPIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.		SHT.	1 OF 6

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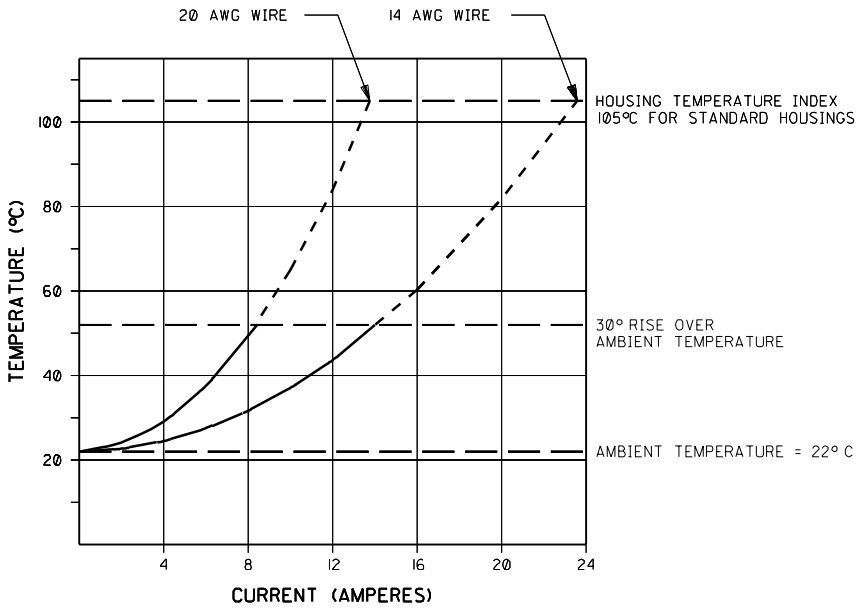
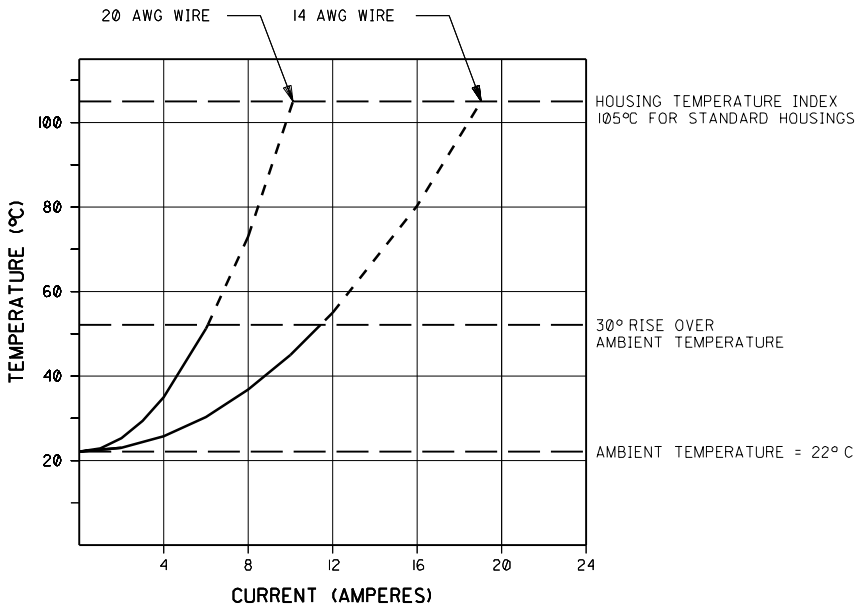
PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

THESE GRAPHS SHOW TYPICAL (AVERAGE) PERFORMANCE



TEMPERATURE VERSUS CURRENT
FOR BRASS TERMINALS IN FOUR CIRCUIT HOUSINGS
ALL FOUR CIRCUITS CARRY THE INDICATED CURRENT
(VALUES ABOVE THE 30°C RISE ARE EXTRAPOLATED)



TEMPERATURE VERSUS CURRENT
FOR BRASS TERMINALS IN NINE CIRCUIT HOUSINGS
ALL NINE CIRCUITS CARRY THE INDICATED CURRENT
(VALUES ABOVE THE 30°C RISE ARE EXTRAPOLATED)

EC NO. 10886306

DRWG. NO. PS-42022-0001

REV.				
SHT.				
FILE NAME PS42022X1	C = ▼ =	REVISE ONLY ON CAD SYSTEM	REV.	C
S02	THIS DRAWING CONTAINS INFORMATION THAT IS PROPIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.		SHT.	2

PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

4.0 Ratings:
4.1 Voltage: 600 Volts
4.2 Current and Applicable Wires:

ITEM	TEST CONDITION	REQUIREMENT
Temperature Rise	Mate the connectors and measure the contact temperature at the rated current load (IEC STD. 512-3)	Maximum Temperature of the terminal over ambient of 30 C (see sheet 2)

-See sheet 2 for typical temperature versus current curves
-14 to 20 AWG wire - Outside Insulation Diameter .130 inch (3.30mm) Maximum

4.3 Temperature: Operating - 55 C to + 105 C

5.0 Performance Specifications
5.1 Electrical Performance

ITEM	TEST CONDITION	REQUIREMENT
Contact Resistance [Low Level]	Mate connectors with a maximum voltage of 20 mV and a current of 100 mA (MIL-STD-1344A METHOD 3004.1)	3.5 milliohms Maximum (initial)
Insulation Resistance	Mate connectors with a voltage of 500 VDC between adjacent terminals. (MIL-STD-1344A METHOD 3003.1)	1000 Megohms Minimum (initial)
Dielectric Strength	Mate connectors with a voltage of 5000 VAC for 1 minute between adjacent terminals. (MIL-STD-1344A METHOD 3001.1)	No Breakdown

PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

5.2 Mechanical Performance

ITEM	TEST CONDITION	REQUIREMENT
Connector Insertion and Withdrawal	Insert and withdraw connectors at a rate of 0.5 inches per minute (12.7 mm per minute) (MIL-STD-1344A METHOD 2013.1)	MAX INSERTION 1.5 (per terminal, initial) Min WITHDRAWAL 0.5
Retention Force in Housing	Axial pull out force on the terminal in the housing at a rate of .5 inches per minute (12.7 mm per minute) (MIL-STD-1344A METHOD 2012.1)	15 lbf Minimum
Durability	Mate connectors up to 50 cycles at a maximum rate of 5 cycles per minute (MIL-STD-1344A METHOD 2016)	3.5 milliohm Max
Vibration	Amplitude: .060" (1.5 mm) peak to peak Sweep: 10-55-10 Hertz in one minute Duration: 2 hours in each X-Y-Z axis (MIL-STD-1344A METHOD 2005.1) (TEST CONDITION I)	Appearance: No Damage Contact Resistance: 5.0 milliohm Maximum Discontinuity: 1 micro second Maximum
Mechanical Shock	50 G's with three shocks in each X-Y-Z axis (MIL-STD-1344A METHOD 2004.1) (TEST CONDITION A)	Appearance: No Damage Contact Resistance: 6 milliohm Maximum Discontinuity: 1 micro second Maximum
Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 1 +/- 1/4 inch per minute (25 +/- 6 mm per minute) (MIL-STD-1344A METHOD 2003.1)	AWG 14: 50 lbf AWG 16: 45 lbf AWG 18: 30 lbf AWG 20: 14 lbf
Terminal Insertion Force (Axial)	Apply an axial insertion force on the terminal at a rate of 1 +/- 1/4 inch per minute (25 +/- 6 mm per minute) (MIL-STD-1344A METHOD 2012.1)	3.5 lbf Maximum

PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

5.2 Mechanical performance (continued):

ITEM	TEST CONDITION	REQUIREMENT
Plug latch strength	Mate connectors and pull apart until both latches break, record the maximum force.	Minimum 35.0 lbf
Panel retention for cap	Insert cap housing into panel cut out per the sales drawing requirements, push cap opposite the way it was assembled until the locking barbs break, record the maximum force.	Minimum 75.0 lbf

5.3 Environmental Performance

ITEM	TEST CONDITION	REQUIREMENT
Thermal Shock	Mate connectors exposed for 25 cycles of: Temperature Duration -55 +0/-3 C 30 minutes 85 +3/0 C 30 minutes (MIL-STD-1344A METHOD 1003.1) (TEST CONDITION A-1)	Appearance: No Damage Contact Resistance: 3.75 milliohm Maximum Dielectric strength: 5000 Vac for 1 minute
Humidity-temperature cycling	Mate connectors and expose to Temperature -humidity cycling between 25 c and 65 c at 95% RH, -10 c with with humidity not controlled (MIL-STD-1344A METHOD 1002.1) (TYPE II)	Appearance: No Damage Contact Resistance: 6.00 milliohm Maximum Dielectric Strength: 5000 VAC for 1 minute Insulation Resistance: 100 Megohms Minimum
Salt spray	Expose unmated connector assemblies to a salt spray concentration of 5% at 35 C for 48 hours. (MIL-STD-1344A METHOD 1001.1)	7.00 milliohm Maximum Dielectric Strength: 5000 VAC for 1 minute

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PRODUCT SPECIFICATION FOR .084/(2.13) DIAMETER SERIES CONNECTOR HOUSINGS AND TERMINALS

(HOT TIN PLATED TERMINALS ONLY)

LTR.	REVISIONS
A	REMOVE "X" PER ECN# U10629 91/03/12 KBP
B	REVISED PER ECN# U10721 91/04/03 KBP

EC.NO. 10886306

DRWG. NO. PS-42022-0001

REV.

SHT.

FILE NAME				
PS42022X1	C = ▼ =	REVISE ONLY ON CAD SYSTEM	REV.	C
S06	THIS DRAWING CONTAINS INFORMATION THAT IS PROPIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.		SHT.	6

MLX-SPQ LIST							
A-SERIES	C-SERIES	D-SERIES	E-SERIES	ENGG#	SPQ	POLYCOVER P/N	CARTON BOX #
50841010	50841015	366480001	366430001	42021-0000	4000	365180073	967070007
50841020	50841025	366480002	366430002	42021-0000	2000	967130004	967070007
50841030	50841035	366480003	366430003	42021-0000	1500	967130004	967070007
50841040	50841045	366480004	366430004	42021-0000	1200	967130004	967070007
50841060	50841065	366480005	366430005	42021-0000	1000	967130004	967070007
50841090	50841095	366480006	366430006	42021-0000	600	365180073	967070007
50841120	50841125	366480007	366430007	42021-0000	500	365180073	967070007
50841150	50841155	366480008	366430008	42021-0000	400	365180073	967070007
-	-	-	366430010	E-36643-010	1000	967130004	967070007
-	-	-	366430011	E-36643-002	4000	967130004	967070007

NOTE-
1) ONE SPQ IN ONE BOX
2) HUMIDIFICATION REQUIREMENT :
   FOR 'A' & 'D' SERIES - (ZYTEL)
   USE 90ML OF WATER PER SPQ BAG
   FOR 'C' SERIES - (VYDYNE) USE
   45ML OF WATER PER SPQ BAG
3) PLEASE REFER THE SHEET 2 FOR
   MLX 5CKT PACKAGING

DOCUMENT STATUS	P1	RELEASE DATE	2019/01/08 11:49:30

FORMAT: Mel-lega-master-tb-prod-A4
REVISION: D
DATE: 2017/10/06

SYMBOLS
F = 0
E = 0
E = 0
S = 0
▼ = 0
C = 0
☒ = 0
■ = 0
▽ = 0

DIMENSION UNITS: MM
SCALE: 1:1

GENERAL TOLERANCES (UNLESS SPECIFIED)

	MM	INCH
4 PLACES	±	±
3 PLACES	±	±
2 PLACES	±	±
1 PLACE	±	±
0 PLACES	±	±
ANGULAR TOL	± °	

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

CURRENT REV DESC: NOTE UPDATED

EC NO: 610043
DRWN: SMAHAJANSHET 2019/01/07
CHK'D: SMAHAJANSHET 2019/01/07
APPR: NCSR 2019/01/08

INITIAL REVISION:
DRWN: SJ 2008/08/12
APPR: KPRASAD 2012/10/25

THIRD ANGLE PROJECTION | DRAWING: A4-SIZE | SERIES: 42021

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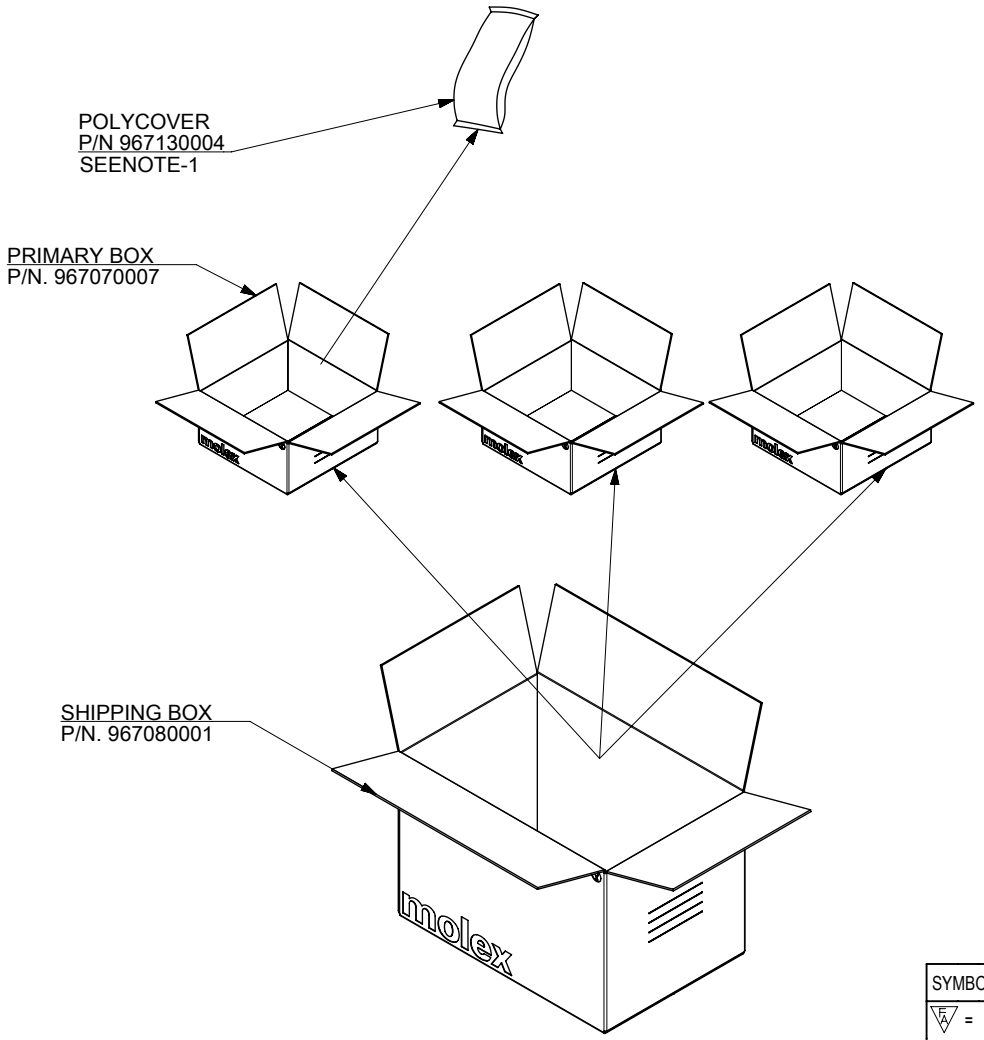
PACKING SPECIFICATION
FOR 42021 SERIES

PACKAGING DESIGN DRAWING

DOCUMENT NUMBER	DOC TYPE	DOC PART	REVISION
PK-42021-XX	PDD	001	C

MATERIAL NUMBER	CUSTOMER	SHEET NUMBER
SEE CHART OF SHEET 1	GENERAL MARKET	1 OF 2



NOTE:
1. THIS DRAWING APPLICABLE ONLY FOR PART NO 366430010
2. ADD 1000PARTS INSIDE THE POLYCOVER.
3. SEAL THE POLYCOVER.
4. BAR CODE LABELLING AS PER ES-40000-7012

NOTE: THIS PACKAGING IS APPLICABLE ONLY FOR NON PALLETIZED PACKAGING.

DOCUMENT STATUS	P1	RELEASE DATE	2019/01/08 11:49:30

FORMAT: Mel-lega-master-tb-prod-A4
REVISION: D
DATE: 2017/10/06

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E = 0
F = 0
S = 0
= 0
C = 0
= 0
= 0
= 0

DIMENSION UNITS	SCALE
MM	1:1

GENERAL TOLERANCES (UNLESS SPECIFIED)

	MM	INCH
4 PLACES	±	±
3 PLACES	±	±
2 PLACES	±	±
1 PLACE	±	±
0 PLACES	±	±
ANGULAR TOL	± °	

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

CURRENT REV DESC: NOTE UPDATED

EC NO: 610043
DRWN: SMAHAJANSHET 2019/01/07
CHK'D: SMAHAJANSHET 2019/01/07
APPR: NCSR 2019/01/08

INITIAL REVISION:
DRWN: SJ 2008/08/12
APPR: KPRASAD 2012/10/25

THIRD ANGLE PROJECTION	DRAWING	SERIES
	A4-SIZE	42021

molex

PACKING SPECIFICATION
FOR 42021 SERIES

PACKAGING DESIGN DRAWING

DOCUMENT NUMBER	DOC TYPE	DOC PART	REVISION
PK-42021-XX	PDD	001	C

MATERIAL NUMBER	CUSTOMER	SHEET NUMBER
SEE CHART OF SHEET 1	GENERAL MARKET	2 OF 2