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Jameco Part Number 798411

FEATURES AND SPECIFICATIONS

Features and Benefits

- Wire-to-wire plug for panel-mounted or free-hanging applications
- Available with and without panel mounting ears
- Positive housing locks to mate with Mini-Fit, Jr. receptacle
- Fully isolated terminals to protect contacts from damage
- Uses standard Mini-Fit series terminals

Reference Information

Product Specification: PS-5556-0001

Packaging: Tray or bag UL File No.: E29179 CSA File No.: LR19980 TUV License No.: R75142

Mates With: <u>5557</u> single row receptacle Use With: <u>5558</u>, <u>30490</u> or 44478 terminals

Designed In: Millimeters



Contact Insertion Force: 1.5kg max.
Contact Retention to Housing: 3.0kg min.
Wire Pull-Out Force: 9.0kg min.
Insertion Force to PCB: 5.0kg max.
Mating Force: 0.7kg (1.54 lb) max.
Unmating Force: 0.35kg (0.7 lb) min.
Normal Force: 200g min.

Physical

Durability: 30 cycles

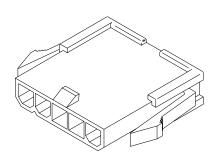
Housing: 6/6 nylon, UL 94V-2 or 94V-0 Contact: Brass or Phosphor Bronze Plating: Tin, select Gold or overall Gold Operating Temperature: -40 to +105°C



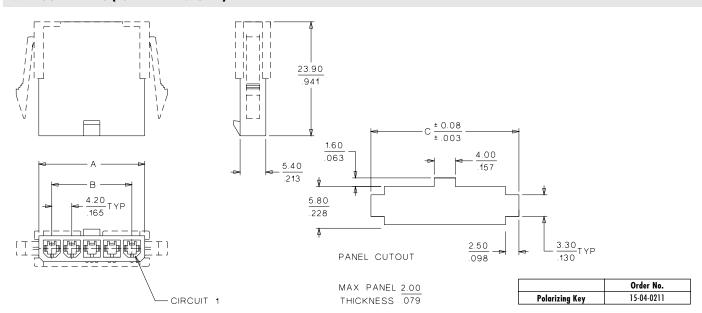
4.20mm (.165") Pitch Mini-Fit, Jr.™ Plug

5559

Single Row, With and Without Panel Mount Ears



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

	Order No.				Dimension		
Circuits	Panel Mount		Free Hanging			n	,
	94V-2	94V-0	94V-2	94V-0	A	B	
3*	• 39-01-4032	• 39-01-4033	• 39-01-4036	• 39-01-4037	13.80 (.543)	8.40 (.331)	19.20 (.756)
4			• 39-01-4046		18.00 (.709)	12.60 (.496)	23.40 (.921)
5	• 39-01-4052	• 39-01-4053	• 39-01-4056	• 39-01-4057	22.20 (.847)	16.80 (.661)	27.60 (1.087)

[•] US Standard Product, available through Molex franchised distributors

F-42 MX01

^{* 3-}circuit plug designed for first-mate/last-break applications



MINI-FIT HCS

(High Current System)

1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT HCS 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating, and The MINI-FIT HCS connector series terminated with 16 to 28 AWG wire using Crimp technology with Tin or Gold plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

(ODOCI NAME AND SERIES NOMBER (S)	
PRODUCT NAME	PART NUMBER
Female Crimp Terminal (Mini-Fit HCS)	44476-***
Male Crimp Terminal (Mini-Fit HCS)	44478-***
Receptacle Housing (Mini-Fit Jr.)	5557-****
Receptacle Housing (Mini-Fit PTA)	30067-****
Receptacle Housing (Mini-Fit BMI)	42474-***
Receptacle Header Assembly (Mini-Fit BMI)	44475-***
Plug Housing (Mini-Fit Jr.)	5559-****
Plug Housing (Mini-Fit TPA)	30068-***
Plug Housing (Mini-Fit BMI)	42475-***
Vertical Header Assembly (Mini-Fit HCS)	44472-***
Vertical Header Assembly (Mini-Fit TPA)	44473-***
Vertical Header Assembly (Mini-Fit (BMI)	44474-***
Vertical Header Assembly (Mini-Fit SMC)	44068-***
Right Angle Header Assembly (Mini-Fit Jr.)	5569-****
Right Angle Header Assembly (Mini-Fit TPA)	30070-****
Right Angle Header Assembly (Mini-Fit BMI)	42404-***
Right Angle Header Assembly (Mini-Fit SMC)	43810-****

Mating the Mini-Fit receptacles to Mini-Fit plugs or Mini-Fit headers using 44476 or 44478 terminals allow it to qualify as a Mini-Fit HCS system.

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings for the information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL File #E29179 CSA Certificate #LR 19980 TUV Certificate #R75142-8

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and the other sections of this specification for the necessary referenced documents and specifications

REVISION:	ECR/ECN INFORMATION:	TITLE: PRODUCT SPECIFICATION FOR		SHEET No.	
D	EC No: UCP2003-2604	MINI-FIT HCS		1 of 5	
	DATE: 2003 / 06 / 12	CONNECTOR SYSTEM		1 01 0	
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-44476-001		C.STEWART Y. MARGULIS Y. MARGULIS		GULIS	
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC					



NGS

4.1 VOLTAGE

600 Volts AC (RMS) (or 600 Volts DC)

4.2 CURRENT AND APPLICABLE WIRES

Maximum Insulation Diameter and Applicable Wire Gauges			16 AWG: 3.10/. 122 MAXIMUM		
			18-24 AWG: 3.10/. 122 MAXIMUM		
MAXIMUM CURRE			RATIN	G (Amperes)	
Ckt. Size Wire	2 & 3	4	- 6	7 - 10	12 - 24
AWG #16	12	1	1	10	9
AWG #18	12	1	1	10	9
AWG #20	9		9	8	8

4.3 TEMPERATURE

Operating: * - 40°C to + 105°C Nonoperating: - 40°C to + 105°C

*Including 30°C terminal temperature at rated current

4.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. Wire resistance shall be removed from the measured value.	10 milliohms MAXIMUM [initial]
2	Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	10 milliohms MAXIMUM [initial]
3	Contact Resistance of Wire Termination (Low Level)	Terminate the applicable wire to the terminal and measure wire using a voltage of 20 mV and a current of 100 mA.	5 milliohms MAXIMUM [initial]

REVISION:	ECR/ECN INFORMATION:	PRODUCT SPECIFICATION FOR		SHEET No.	
D	EC No: UCP2003-2604		MINI-FIT HCS		2 of 5
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TEMPLATE FILENAME: PRODUCT_SPEC(SIZE_A)(V.1).DOC					



4	Insulation Resistance	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
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5.1 ELECTRICAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of 1500 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
6	Temperature Rise (via Current Cycling)	Mate connectors. Measure the temperature rise at the rated current after 96 hours, during current cycling (45 minutes ON and 15 minutes OFF per hour) for 240 hours, and after final 96-hour steady state.	Temperature rise: +30°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Terminal Mate and Unmate Forces	Insert and withdraw terminal (male to female) at a rate of 25 \pm 6 mm (1 \pm $\frac{1}{4}$ inch) per minute.	14.7 N (3.30 lbf) MAXIMUM insertion force & 1.0 N (0.02 lbf) MINIMUM withdrawal force
2	Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 $\pm \frac{1}{4}$ inch) per minute.	30 N (6.74 lbf) MINIMUM retention force
3	Durability	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
4	Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
5	Shock (Mechanical)	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes, (18 shocks total).	20 milliohms MAXIMUM & Discontinuity < 1 microsecond

REVISION:	ECR/ECN INFORMATION:	PRODUCT SPECIFICATION FOR MINI-FIT HCS		SHEET No.	
D	EC No: UCP2003-2604			3 of 5	
	DATE: 2003 / 06 / 12	CON			
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-44476-001		C.STEWART	Y. MARGULIS	Y. MAR	GULIS

TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC



6	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 \pm 6 mm (1 \pm $\frac{1}{4}$ inch).	16 Awg = 88.0 N (19.8 lbf) Min. 18 Awg = 88.0 N (19.8 lbf) Min. 20 Awg = 59.0 N (13.3 lbf) Min. 22 Awg = 39.0 N (8.78 lbf) Min. 24 Awg = 29.0 N (6.52 lbf) Min. 26 Awg = 19.0 N (4.27 lbf) Min. 28 Awg = 9.80 N (2.20 lbf) Min.
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5.2 MECHANICAL REQUIREMENTS (continued)

7	Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 \pm 6 mm (1 \pm $\frac{1}{4}$ inch).	15.0 N (3.37 lbf) MAXIMUM insertion force
8	Normal Force	Apply a perpendicular force.	0.49 N (50 grams) MINIMUM [Gold (noble) plating] OR 1.47 N (150 grams) MINIMUM [Tin (non-noble) plating]
9	PCB Engagement and Separation Forces	Engage and separate a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
10	Panel Insertion and Withdrawal Forces	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 $\pm \frac{1}{4}$ inch) per minute.	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Thermal Shock	Mate connectors: expose for 5 cycles between temperatures -55 and 105°C; dwell 0.5 hours at each temperature.	20 milliohms MAXIMUM Visual: No Damage Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4
2	Thermal Aging	Mate connectors; expose to: 96 hours at 105 ± 2°C	20 milliohms MAXIMUM & Visual: No Damage
3	Humidity (Steady State)	Mate connectors: expose to a temperature of $60 \pm 2^{\circ}$ C with a relative humidity of 90-95% for 96 hours.	20 milliohms MAXIMUM Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4 Visual: No Damage

REVISION:	ECR/ECN INFORMATION:	- FRODUC	I FOR	SHEET No.				
D	EC No: UCP2003-2604		4 of 5					
_	DATE: 2003 / 06 / 12	CON	1					
DOCUMEN [*]	T NUMBER:	CREATED / REVISED BY: CHECKED BY: APPROVED BY:						
PS	S-44476-001	C.STEWART Y. MARGULIS Y. MARGULIS						
TEMPLATE FILENAME: PRODUCT SPECISIZE A](V.1).DOC								



4	Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
5	Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 235 ± 5°C	Visual: No Damage to insulator material

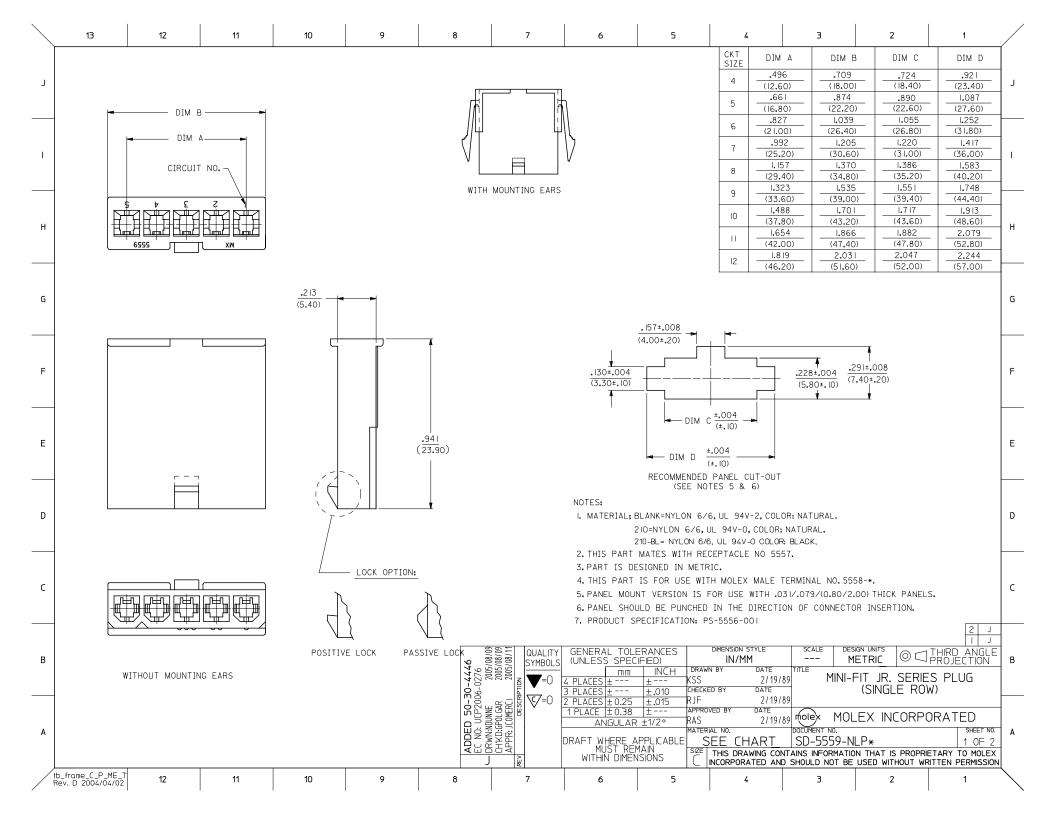
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6	Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	20 milliohms MAXIMUM Visual: No Damage
7	Corrosive Atmosphere: Sulfur Dioxide Gas (SO ₂)	Mate connectors: Duration: 24 hours exposure. Atmosphere: 50 parts per million (ppm) SO_2 Gas. Temperature: 40 ± 3 °C	20 milliohms MAXIMUM Visual: No damage

5.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

REVISION:	ECR/ECN INFORMATION:	TITLE: PRODUC	SHEET No.				
D	EC No: UCP2003-2604	MINI-FIT HCS CONNECTOR SYSTEM					
	DATE: 2003 / 06 / 12						
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:		
PS-44476-001		C.STEWART	Y. MARGULIS Y. MARGULIS				
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC							



	13	12 11		10	9	8		7	6	5	4	:	3	2	1	
	PART NO	ENG NO	CKT SIZE	MOUNTING OPTION	LOCK OPTION	MATERIAL SEE NOTEI		PART NO		ENG NO	CKT SIZE	MOUNTING OPTION	LOCK OPTION	MATERIAL SEE NOTEI		
ا ر	39-01-4042	5559-04P2	4	W/EARS	POSITIVE	94V-2		NO E.D.P.	555	59-04P4	4	W/EARS	PASSIVE	94V-2		J
	39-01-4046	5559-04P3	4	W/O EAR	POSITIVE	94V-2		NO E.D.P.	555	59-04P5	4	W/O EAR	PASSIVE	94V-2		,
	39-01-4043	5559-04P2-2I0	4	W/EARS	POSITIVE	94V-0		NO E.D.P.	55	59-04P4-2I0	4	W/EARS	PASSIVE	94V-0		
	39-01-4047	5559-04P3-2I0	4	W/O EAR	POSITIVE	94V-0		NO E.D.P.	55	5559-04P5-2I0		W/O EAR	PASSIVE	94V-0	_	
	39-01-4052	5559-05P2	5	W/EARS	POSITIVE	94V-2										
	39-01-4056	5559-05P3	5	W/O EAR	POSITIVE	94V-2										
ı	39-01-4053	5559-05P2-2I0	5	W/EARS	POSITIVE	94V-0		50-29-1599	55	59-05P4-210	5	W/EARS	PASSIVE	94V-0		ı
	39-01-4057	5559-05P3-2I0	5	W/O EAR	POSITIVE	94V-0		NO E.D.P.	55	59-05P5-2 IO	5	W/O EAR	PASSIVE	94V-0		
	50-30-4446	5559-05P3-210-BL	5	W/O EAR	POSITIVE	94V-O		NO E.D.P.	555	59-05P5-210-BL	5	W/O EAR	PASSIVE	94V-O		
	39-01-4062	5559-06P2	6	W/EARS	POSITIVE	94V-2		NO E.D.P.	555	59-06P4	6	W/EARS	PASSIVE	94V-2		
	39-01-4066	5559-06P3	6	W/O EAR	POSITIVE	94V-2		NO E.D.P.	555	59-06P5	6	W/O EAR	PASSIVE			
Н	39-01-4063	5559-06P2-2I0	6	W/EARS	POSITIVE	94V-0		NO E.D.P.	55	59-06P4-2I0	6	W/EARS	PASSIVE	94V-0		Н
	39-01-4067	5559-06P3-2I0	6	W/O EAR	POSITIVE	94V-0		NO E.D.P.		59-06P5-2I0	6	W/O EAR	PASSIVE			
	39-01-4072	5559-07P2	7	W/EARS	POSITIVE	94V-2		NO E.D.P.	555	59-07P4	7	W/EARS	PASSIVE			
	39-01-4076	5559-07P3	7	W/O EAR	POSITIVE	94V-2		NO E.D.P.		59-07P5	7	W/O EAR	PASSIVE		_	
	39-01-4073	5559-07P2-2I0	7	W/EARS	POSITIVE	94V-0		NO E.D.P.		59-07P4-2I0	7	W/EARS	PASSIVE			
G	39-01-4077	5559-07P3-210	7	W/O EAR	POSITIVE	94V-0		NO E.D.P.		59-07P5-2 IO	7	W/O EAR	PASSIVE		_	G
	39-01-4082	5559-08P2	8	W/EARS	POSITIVE	94V-2		NO E.D.P.		59-08P4	8	W/EARS	PASSIVE		_	
	39-01-4086	5559-08P3	8	W/O EAR	POSITIVE	94V-2		NO E.D.P.		59-08P5	8	W/O EAR	PASSIVE			
	39-01-4083	5559-08P2-2I0	8	W/EARS	POSITIVE	94V-0		NO E.D.P.		59-08P4-2I0	8	W/EARS	PASSIVE		_	
	39-01-4087	5559-08P3-2I0	8	W/O EAR	POSITIVE	94V-0		NO E.D.P.		59-08P5-2I0	8	W/O EAR	PASSIVE			
F	39-01-4092	5559-09P2	9	W/EARS	POSITIVE	94V-2		NO E.D.P.		59-09P4	9	W/EARS	PASSIVE		_	F
·	39-01-4096	5559-09P3	9	W/O EAR	POSITIVE	94V-2		NO E.D.P.		59-09P5	9	W/O EAR	PASSIVE PASSIVE		_	·
	39-01-4093 39-01-4097	5559-09P2-210 5559-09P3-210	9	W/EARS W/O EAR	POSITIVE POSITIVE	94V-0 94V-0		NO E.D.P.		59-09P4-210 59-09P5-210	9	W/EARS W/O EAR	PASSIVE		_	
-	39-01-4097	5559-09P3-210 5559-10P2	10	W/EARS	POSITIVE	94V-0		NO E.D.P.		59-10P5-210 59-10P4	10	W/EARS	PASSIVE		-	
	39-01-4102	5559-10P3	10	W/O EAR	POSITIVE	94V-2		NO E.D.P.		59-10P5	10	W/CARS W/O EAR	PASSIVE		_	
Е	39-01-4103	5559-I0P2-2I0	10	W/EARS	POSITIVE	94V-0		NO E.D.P.		59-10P4-210	10	W/EARS	PASSIVE		_	Е
_	39-01-4107	5559-10P3-210	10	W/O EAR	POSITIVE	94V-0		NO E.D.P.		59-10P5-210	10	W/O EAR	PASSIVE			_
	39-01-4112	5559-11P2	11	W/EARS	POSITIVE	94V-2		NO E.D.P.		59-TIP4	II	W/EARS	PASSIVE			
-	39-01-4116	5559-11P3	ii	W/O EAR	POSITIVE	94V-2		NO E.D.P.		59-TIP5	11	W/O EAR	PASSIVE			
	39-01-4113	5559-11P2-210	11	W/EARS	POSITIVE	94V-0		NO E.D.P.		59-11P4-210	II	W/EARS	PASSIVE			
_	39-01-4117	5559-11P3-210	11	W/O EAR	POSITIVE	94V-0		NO E.D.P.		59-11P5-210	ii.	W/O EAR	PASSIVE			_
D	39-01-4122	5559-I2P2	12	W/EARS	POSITIVE	94V-2		NO E.D.P.		59- I2P4	12	W/EARS	PASSIVE	94V-2		D
	39-01-4126	5559-I2P3	12	W/O EAR	POSITIVE	94V-2		NO E.D.P.	55	59-12P5	12	W/O EAR	PASSIVE	94V-2		
	39-01-4123	5559- I2P2-2 IO	12	W/EARS	POSITIVE	94V-0		NO E.D.P.	55	59- I2P4-2 I0	12	W/EARS	PASSIVE	94V-0		
	39-01-4127	5559- I2P3-2 IO	12	W/O EAR	POSITIVE	94V-0		NO E.D.P.	55	59- I2P5-2 IO	12	W/O EAR	PASSIVE	94V-0		
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		LEGEND														
		5559-** P * - *	DIAL OF	TION			11 3 6	QUALITY GENE	RAL TOLI	ERANCES	DIMENSION STY	LE SCAL	.E DESIGN	UNITS 0 1	HIRD ANGLE	
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	CIBCII	IT SIZE MOUNTING	; AND I	OCK OPTION:			2005		nm nm	INCH DRAW		ATE TITLE	MIN	I-FIT JR SER		
MOUNTING AND LOCK OPTION: 2=WITH EARS,POSITIVE LOCK 3=WITHOUT EARS,POSITIVE LOCK 4=WITH EARS,PASSIVE LOCK 5=WITHOUT EARS,PASSIVE LOCK 5=WITHOUT EARS,PASSIVE LOCK A PLUG MOUNTING AND LOCK OPTION: 2=WITH EARS,POSITIVE LOCK 3=PLUG 3 PLACES ± ± -0.10 CHECKED BY DATE 2 PLACES ± 0.25 ± .015 BAP 10/13/89 (SINGLE ROW) 1 PLACE ± 0.38 ± APPROVED BY DATE ANGULAR ±1/2° RAS 10/13/89 MOLEX INCORPORATED NATION TREMAIN INC. DRAFT WHERE APPLICABLE SEE CHART SD-5559-NLP* 2 WITHOUT EARS,PASSIVE LOCK DRAFT WHERE APPLICABLE SEE CHART SD-5559-NLP* 2 WITHOUT EARS,PASSIVE LOCK WITHOUT BRANN BY DATE 10/13/89 OCHENT NO. SEE THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX WITHOUT DIMENSIONS SEE THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX WITHOUT DIMENSIONS SEE THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX WITHOUT DIMENSIONS																
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