Distributed by:

JAMECO

ELECTRONICS

www.Jameco.com + 1-800-831-4242

The content and copyrights of the attached material are the property of its owner.

Jameco Part Number 799828

FEATURES AND SPECIFICATIONS

Features and Benefits

- High current
- Fully polarized
- Positive locks
- Low engagement force
- Wire-to-board
- Metal board retention clip
- Surface Mount Compatible

Reference Information

Product Specification: PS-42815-0001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980 TUV License No.: R9751144

Mates With: 42816 receptacle housing

Designed In: Millimeters

Electrical

Voltage: 600V Current: 48.0A max.*

Contact Resistance: $1.5m\Omega$ max. Dielectric Withstanding Voltage: 2200V Insulation Resistance: $1000~M\Omega$ min.

Mechanical

Insertion Force to PCB: 19.6N max. Normal Force: 1.96N min. Durability: 30 cycles

Physical

Housing: Glass-filled, 4/6 nylon, UL 94V-0

Contact: Copper Alloy Plating: Tin/Lead over Nickel Operating Temperature: -40 to +105°C

PCB Thickness: 1.57, 2.36, 3.17, or 6.35mm (.062, .093, .125, or .250")

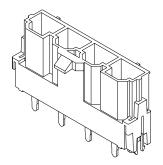
* Depending on circuit size, wire gauge and PCB. Please refer to product specification.



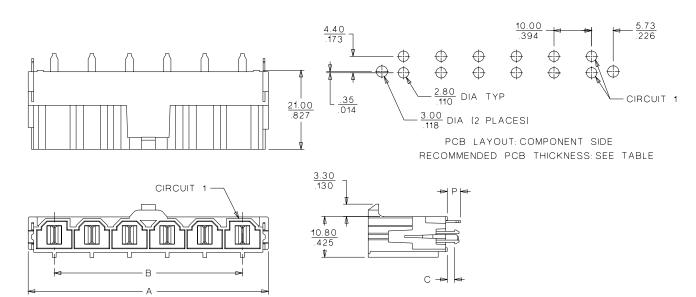
10.00mm (.393") Pitch Mini-Fit, Sr.™ Header

42819

Vertical, Single Row Metal Clip Mount SMC



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

C:i.	Order No.	PCB Thickness		Dime	nsion	
Circuits		der No. PCB INICKNESS	A	В	C	P
	42819-2212	1.57 (.062)			1.80 (.070)	3.50 (.137)
2	42819-2222	2.36 (.093)	23.82 (.937) 10.00 (.393)	10.00 / 2021	2.60 (.102)	5.10 (.200)
4	42819-2232	3.18 (.125)		10.00 (.373)	3.40 (.133)	5.10 (.200)
	42819-2242	6.35 (.250)		3.40 (.133)	8.30 (.327)	
	42819-3212	1.57 (.062)		20.00 (.787)	1.80 (.070)	3.50 (.137)
3	42819-3222	2.36 (.093)	33.82 (1.331)		2.60 (.102)	5.10 (.200)
3	42819-3232	3.18 (.125)	33.02 (1.331)		3.40 (.133)	5.10 (.200)
	42819-3242	6.35 (.250)			3.40 (.133)	8.30 (.327)
	42819-4212	1.57 (.062)			1.80 (.070)	3.50 (.137)
4	42819-4222	2.36 (.093)	43.82 (1.725)	30.00 (1.181)	2.60 (.102)	5.10 (.200)
4	42819-4232	3.18 (.125)	43.02 (1./23)	30.00 (1.161)	3.40 (.133)	5.10 (.200)
	42819-4242	6.35 (.250)			3.40 (.133)	8.30 (.327)

Circuits	Order No.	PCB Thickness		Dime	nsion	
	Oraer No.	rcb inickness	A	В	C	P
	42819-5212	1.57 (.062)		1.80 (.070)	3.50 (.137)	
	42819-5222 2.36 (.093) 53.82 (2.118) 40.00 (1.574)	2.60 (.102)	5.10 (.200)			
,	42819-5232	3.18 (.125)	33.02 (2.110)	40.00 (1.574)	3.40 (.133)	5.10 (.200)
	42819-5242	6.35 (.250)			3.40 (.133)	8.30 (.327)
	42819-6212	1.57 (.062)			1.80 (.070)	3.50 (.137)
6	42819-6222	2.36 (.093)	63.82 (2.512)	50.00 (1.968)	2.60 (.102)	5.10 (.200)
0	42819-6232	3.18 (.125)	03.02 (2.312)	30.00 (1.700)	3.40 (.133)	5.10 (.200)
	42819-6242	6.35 (.250)			3.40 (.133)	8.30 (.327)

F-8 MX01



MINI-FIT SR. SERIES

1.0 SCOPE

This specification covers the 10.00 mm / (.394 in.) centerline tin and gold plated connector series, single and dual row versions in wire to wire and wire to printed circuit board applications. This product performance is optimized for stranded tinned wire termination.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND PART NUMBER

Product Name	Part Number
Female Terminal	42815-****
Male Terminal	42817-***
Receptacle (single row)	42816-****
Plug (single row)	42818-***
Vertical Header (single row)	42819-****
Right Angle Header (single row)	42820-****
Receptacle (dual row)	43914-***
TPA (dual row)	43980-***
Vertical Header (dual row)	43915-****
Panel Mount Plug (dual row)	43938-***

2.2 DIMENSIONS, MATERIALS PLATINGS & MARKINGS.

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

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

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

3.1 Agency Approvals

UL File #E29179

CSA Certificate #LR 19980-555

TUV Certificate #R 9751144, #R 9950481

4.0 RATINGS

4.1 VOLTAGE RATINGS

IEC 950 250 Volts AC (RMS) / DC UL / CSA 600 Volts AC (RMS) / DC

TUV 250 Volts AC

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.	
15	EC No: UCP2004-0403	PRODUCT SPECIFICATIO		OR MINI-	1 of 8	
13	DATE: 2003 / 08 / 29	FIT SR. (FIT SR. CONNECTOR SYSTEM			
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:	
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI	
				FILE	NAME: PS42815.DOC	



4.2 CURRENT RATINGS

Rating is established based on MIL-W-5088 max. current capacity guidelines for copper conductors and test data summary TS-42815-001 section 5.3.7. Test data is based on 30 deg. C temperature rise using tin-plated terminals and UL 1015 tin stranded wire.

Single Row Product (tested to 30degC max. rise)

-	2ckt. W to W	2ckt. W to PCB**	6ckt W to	6ckt. W to
			W	PCB**
16 AWG	13A	13A	13A	13A
14 AWG	17A	17A	17A	17A
12 AWG	23A	23A	23A	23A
10 AWG	33A	33A	33A	33A
8 AWG	50A	48A	45A	37A
12AWG	40A	40A		
Double Crimp	(20A per wire)	(20A per wire)		

Note: CSA ratings are as follows; 12AWG = 23A max., 10AWG = 30A max. TUV ratings are as follows; 12AWG = 23A max., 10AWG = 33A max. **PCB trace design may greatly effect temperature rise results.

Dual Row Product (tested to 30degC max. rise)

	6ckt. W to W	6ckt. W to	14ckt W to W	14ckt. W to
	OCKI. VV IO VV		14CKL VV IO VV	
		PCB**		PCB**
16 AWG	13A	13A	13A	12A
14 AWG	17A	17A	17A	16A
12 AWG	23A	23A	23A	22A
10 AWG	32A	31A	29A	28A
8 AWG	43A	37A	38A	36A

^{**}PCB trace design may greatly affect temperature rise results.

4.3 TEMPERATURES

Operating: -40 Degrees C to +105 Degrees C Nonoperating: -40 Degrees C to +105 Degrees C

(Including 30 degrees C terminal temperature at full current)

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.		
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	2 of 8		
13	DATE: 2003 / 08 / 29	FIT SR. 0	FIT SR. CONNECTOR SYSTEM				
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:		
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI		
				FILE	NAME: PS42815 DOC		



5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE

Section	Item	Test Condition	Requirement
5.1.1	Initial Contact Resistance (low level)	Mate connectors, measure by dry circuit, 20mV max., 100mA. Wire resistance shall be removed from the measured value.	1.5 mOhm max. (tin) 1.0 mOhm max. (gold)
5.1.2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground.	1000 M Ohm min.
5.1.3	Dielectric Strength	Mate connectors, apply 2200V AC for 1 minute between adjacent terminal or ground.	No breakdown
5.1.4	Contact Resistance (rated)	Measure contact resistance at rated current.	1.5 mOhm max. (tin) 1.0 mOhm max. (gold)
5.1.5	Contact Resistance on Crimp	Crimp the wire to the terminal, measure crimp resistance by dry circuit, 20mV max., 100mA	1.0 mOhm max.

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.	
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	3 of 8	
13	DATE: 2003 / 08 / 29	FIT SR. (FIT SR. CONNECTOR SYSTEM			
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:	
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI	
				FILE	NAME: PS42815 DOC	



5.2 MECHANICAL PERFORMANCE

Section	Item	Test Condition	Requirement
5.2.1	Contact Insertion and	Insert and withdraw a	Max. Insertion =
	Withdrawal	contact at a speed rate of	3Kg
		25 +/- 6mm / minute	Min. Withdrawal
			= 0.5Kg
5.2.2	Connector Insertion	Insert and withdraw a	Max. Insertion =
	and Withdrawal	connector at a rate of 25 +/-	3.0Kg/ckt. Min. Withdrawal
		6mm / minute	= 0.5Kg/ckt.
5.2.3	Terminal Insertion	Insert the crimped terminal	Max. Insertion =
0.2.0	Force	into the housing.	7.0Kg
5.2.4	Crimp Terminal	Apply axial pull out force at	
	Retention Force	a speed rate of 25 +/- 6mm /	Min. Retention =
		minute on the terminal	10Kg
		assembled in the housing	
		and with the TPA cover	
5.2.5	Header Terminal	installed.	Min. Retention =
5.2.5	Retention Force	Apply axial pull out force at a speed rate of 25 +/- 6mm /	2.0Kg
	TCCCTILIOTT FORCE	minute on the terminal	2.01(g
		assembled in the housing.	
5.2.6	Wire Pull Out Force	Mount the crimped terminal,	16AWG = 14Kg
		apply an axial pull out force	14AWG = 23Kg
		on the wire at a speed rate	12AWG = 31Kg
		of 25 +/- 6mm / minute.	10AWG = 36Kg
F 2 7	Normal Force	Apply a parpandicular force	8AWG = 40Kg
5.2.7	Normal Force	Apply a perpendicular force at a speed rate of 25 +/-	200 g min.
		6mm / minute.	
5.2.8	PCB Insertion and	Apply force perpendicular to	Insertion = 2Kg
-	Withdrawal Force	the housing at a speed rate	max.
		of 25 +/- 6mm minute as	Withdrawal =
		shown.	1Kg min.
500	Danal Inggation 0	In a cut a sail with the con-	Inconting FIG.
5.2.9	Panel Insertion & Withdrawal	Insert and withdraw a	Insertion = 5Kg
	vvilliulawal	connector at a speed rate of 25 +/- 6mm / minute	max. Withdrawal =
		20 17 OHIII / Hilliate	10Kg min.
		L	. 3. (9)

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.	
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	4 of 8	
13	DATE: 2003 / 08 / 29	FIT SR. (FIT SR. CONNECTOR SYSTEM			
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:	
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI	
				FILE	NAME: PS42815.DOC	



5.2 MEACHANICAL PERFORMANCE (continued)

Section	Item	Test Condition	Requirement
5.2.10	Latch Yield Strength (only 43914 receptacle w/ 43938 plug)	Insert and withdraw connector housings (30 times) and pull apart at a speed rate of 25 +/- 6mm / minute	Yield = 7.0Kg min.
5.2.10A	Latch Yield Strength (all other)	Insert and withdraw connector housings (30 times) and pull apart at a speed rate of 25 +/- 6mm / minute	Yield = 10.0Kg min.
5.2.11	Durability (tin)	Insert and withdraw connectors (30 times) at a maximum rate of 10 cycles per minute prior to environmental tests.	Contact Res. change = 1.0mOhm max.
5.2.11A	Durability (gold)	Insert and withdraw connectors (100 times) at a maximum rate of 10 cycles per minute prior to environmental tests.	Contact Res. change = 1.0mOhm max.
5.2.12	Vibration without lubrication (tin) Not Recommended	(30 times) at a maximum rate of 10 cycles per minute prior to environmental tests.	Contact Res change =. 4.0mOhm max Discontinuity not greater than 1 microsecond
5.2.12A	Vibration with lubrication (tin) (Nyogel 760G)	Amplitude: 1.50 mm peak to peak Sweep: 10-50-10 Hz in one minute Duration: 2 hours in each X-Y-Z axis.	Contact Res change =. 1.0mOhm max Discontinuity not greater than 1 microsecond
5.2.12B	Vibration without lubrication (gold)	Amplitude: 1.50 mm peak to peak Sweep: 10-55-10 Hz in one minute Duration: 2 hours in each X-Y-Z axis.	Contact Res change =. 1.0mOhm max Discontinuity not greater than 1 microsecond
5.2.13	Mechanical Shock	Sweep: 10-50-10 Hz in one minute Duration: 2 hours in each X-Y-Z axis.	Contact Res. change = 1.0mOhm max. Discontinuity not greater than 1 microsecond

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	5 of 8
13	DATE: 2003 / 08 / 29	FIT SR. (CONNECTOR SYS	TEM	3010
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-42815-001		M. CARRANZA	J. COMERCI	J. COMERCI	
	FILENAME: PS42815 DOC				



5.3 ENVIRONMENTAL PERFORMANCE

Section	Item	Test Condition	Requirement
5.3.1	Cold Resistance	-40 +/- 3 degrees C for 96 hrs.	Appearance: No damage Contact Res. change = 1.0mOhm max.
5.3.2	Thermal Shock	Mate connectors, expose to 25 cycles of: -40 +0/-3 deg. C for 30 minutes +25 +/- 10 deg. C for 5 minutes max. +105 +3/-0 deg. C for 30 minutes +25 +/- 10 deg. C for 5 minutes max.	Appearance: No damage Contact Res. change = 1.0mOhm max.
5.3.3	Thermal Aging	Mate connectors, expose to 240 hours at 105 +/- 2 deg. C	Appearance: No damage Contact Res. change = 1.0mOhm max
5.3.4	Humidity (Steady State)	Mate connectors, expose to a temperature of 40 +/- 2 deg. C with a relative humidity of 90% to 95% for 96 hours.	Appearance: No damage Contact Res. change = 1.0mOhm max Dielectric withstanding voltage: No breakdown Insul. res: 1000M Ohm min.
5.3.5	Humidity (cyclic) without lubrication Not Recommended	Mate connectors, expose to 25 cycles at 90% to 95% relative humidity with a transition time of 2.5 hrs. between extremes. +25 +/- 10 deg. C for 5 minutes max. +65 +3/-0 deg. C for 30 minutes	Appearance: No damage Contact Res. change = 2.0mOhm max Dielectric withstanding voltage: No breakdown Insul. res: 1000M Ohm min.

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	6 of 8
13	DATE: 2003 / 08 / 29	FIT SR. (CONNECTOR SYS	TEM	0 01 0
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-42815-001		M. CARRANZA	J. COMERCI	J. COMERCI	
	FILENAME: PS42815 DOC				



5.3 ENVIRONMENTAL PERFORMANCE (cont.)

Section	Item	Test Condition	Requirement
5.3.6	Immunity to Fretting Corrosion	Mate connectors, expose to 500 cycles with a max. transition time of 5 minutes between extremes.	Appearance: No damage
	without lubrication. (tin) Not Recommended	+25 +/- 10 deg. C for 30 minutes +70 +3/-0 deg. C for 30 minutes	Contact Res. change = 4.0mOhm max
5.3.6A	Immunity to Fretting Corrosion with lubrication. (tin) (Nyogel 760G)	Mate connectors, expose to 500 cycles with a max. transition time of 5 minutes between extremes. +25 +/- 10 deg. C for 30 minutes +70 +3/-0 deg. C for 30 minutes	Appearance: No damage Contact Res. change = 1.0mOhm max
5.3.7	Temp. Rise & Current Cycling	Mate the connectors and measure the temperature rise at the rated current for 96 hrs., 45 minutes ON and 15 minutes OFF for 240 hrs., and an additional 96 hrs. of steady-state current.	Max. Temp. Rise = 30deg. C Per EIA 364 and CSA requirement
5.3.8	Solderability**	Solder time: 3 +/- 5 seconds Solder temp.: 260 +/- 5 deg. C	95% of the immersed area must show no voids or pin holes.
5.3.9	IR Process Resistance	245 +/- 3 deg. C for 4 minutes, allow to cool to room temperature, repeat for 3 cycles.	Appearance: No damage Dimensional: Conformance to sales drawing requirements.
5.3.10	Resistance to Solder**	Solder time: 3 +/- 0.5 seconds Solder temp.: 260 +/- deg. C	Appearance: No damage

^{**}NOTE: This product is compatible with lead-free hand soldering temperatures.

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.
15	EC No: UCP2004-0403	PRODUCT S	SPECIFICATION FO	OR MINI-	7 of 8
	DATE: 2003 / 08 / 29	FIT SR. (CONNECTOR SYS	TEM	7 01 6
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI
	FILENAME: PS42815.DOC				



5.3 ENVIRONMENTAL PERFORMANCE (cont.)

Section	Item	Test Condition	Requirement
5.3.11	Resistance to	Solvent: flourinert FC-70	Appearance: No
	Solvents	(3M Corp.)	damage
		Solvent temp: Boiling temp.	
		Immersion time: 120 +/- 5 seconds	
		Solvent: Alpha 1003 (Alpha Metal) Solvent: Isopropyl Alcohol Solvent Temp.: Boiling temp. Immersion time: 240 +/- 5 seconds	
		Repeat in solvent 5 times. Rinse with deionized water between cycles.	

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.
15	EC No: UCP2004-0403	PRODUCT S	PECIFICATION FO	OR MINI-	8 of 8
13	DATE: 2003 / 08 / 29	FIT SR. (CONNECTOR SYS	TEM	000
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	VED BY:
PS-42815-001		M. CARRANZA	J. COMERCI	J. COM	MERCI
	FILENAME: PS42815 DOC				

