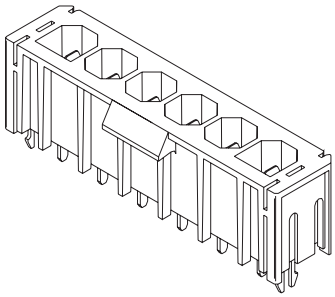
Jameco Part Number 1970586

7.50mm (.295") Pitch Sabre™ Wire-to-Board Header

43160

Vertical, Single Row With and without Board Lock



Features and Benefits

- Sizes 2 to 6 circuits
- Optional board lock features offered in 1.57, 2.36 and 3.18mm (.062, .093 and .125) lengths
- Positive lock
- Fully polarized
- Wire-to-board

Reference Information

Product Specification: PS-44441-9999
Packaging: Bag and tray
UL File No.: E29179
CSA File No.: LR19980
TUV License No.: TBA
Mates With: 44441 housing
Designed In: Inches

Electrical

Voltage: 600V
Current: 18.0A max.*
Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 5000V
Insulation Resistance: 1000 Megohms min.

Mechanical

Insertion Force to PCB: 22.24N max.
Normal Force: 13.34N nominal
Durability: 25 cycles

Physical

Housing: Black glass-filled nylon, UL 94V-0 or natural unfilled nylon, UL 94V-2
Contact: Brass
Plating: Tin
Operating Temperature: -40 to +75˚C
PCB Thickness: 1.57, 2.36 and 3.18mm (.062, .093 and .125")

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

Without Board Lock

Circuits	Order No.		PC Tail Length	Lead-free
	94V-0	94V-2		
2	43160-0102	43160-0202	3.81 (.150)	Yes
	43160-0302	43160-0402	5.33 (.210)	
3	43160-0103	43160-0203	3.81 (.150)	
	43160-0303	43160-0403	5.33 (.210)	
4	43160-0104	43160-0204	3.81 (.150)	
	43160-0304	43160-0404	5.33 (.210)	
5	43160-0105	43160-0205	3.81 (.150)	
	43160-0305	43160-0405	5.33 (.210)	
6	43160-0106	43160-0206	3.81 (.150)	
	43160-0306	43160-0406	5.33 (.210)	

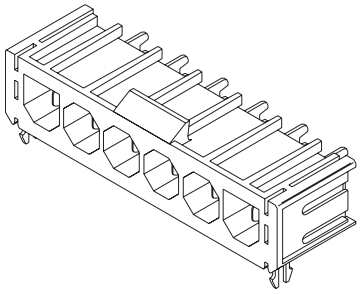
With Board Lock

Circuits	Order No.		PCB Thickness	Lead-free
	94V-0	94V-2		
2	43160-2102	43160-2202	1.57 (.062)	Yes
	43160-4302	43160-4402	2.36 (.093)	
	43160-6302	43160-6402	3.18 (.125)	
3	43160-2103	43160-2203	1.57 (.062)	
	43160-4303	43160-4403	2.36 (.093)	
	43160-6303	43160-6403	3.18 (.125)	
4	43160-2104	43160-2204	1.57 (.062)	
	43160-4304	43160-4404	2.36 (.093)	
	43160-6304	43160-6404	3.18 (.125)	
5	43160-2105	43160-2205	1.57 (.062)	
	43160-4305	43160-4405	2.36 (.093)	
	43160-6305	43160-6405	3.18 (.125)	
6	43160-2106	43160-2206	1.57 (.062)	
	43160-4306	43160-4406	2.36 (.093)	
	43160-6306	43160-6406	1.57 (.125)	

7.50mm (.295") Pitch Sabre™ Wire-to-Board Header

43160

Right Angle, Single Row With and without Board Lock



Features and Benefits

- Sizes 2 to 6 circuits
- Wire-to-board
- Optional board lock features offered in 1.57, 2.36 and 3.18mm (.062, .093 and .125") lengths
- Positive lock
- Fully polarized

Reference Information

Product Specification: PS-44441-9999
Packaging: Bag and tray
UL File No.: E29179
CSA File No.: LR19980
TUV License No.: TBA
Mates With: 44441 housing
Designed In: Inches

Electrical

Voltage: 600V
Current: 18.0A max.*
Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 5000V
Insulation Resistance: 1000 Megohms min.

Mechanical

Insertion Force to PCB: 22.24N max.
Normal Force: 13.34N nominal
Durability: 25 cycles

Physical

Housing: Black glass-filled nylon, UL 94V-0 or natural unfilled nylon UL 94V-2
Contact: Brass
Plating: Tin
Operating Temperature: -40 to +75˚C
PCB Thickness: 1.57, 2.36 and 3.18mm (.062, .093 and .125")

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

Without Board Lock

Circuits	Order No.		PC Tail Length	Lead-free
	94V-0	94V-2		
2	43160-1102	43160-1202	3.81 (.150)	Yes
	43160-1302	43160-1402	5.33 (.210)	
3	43160-1103	43160-1203	3.81 (.150)	
	43160-1303	43160-1403	5.33 (.210)	
4	43160-1104	43160-1204	3.81 (.150)	
	43160-1304	43160-1404	5.33 (.210)	
5	43160-1105	43160-1205	3.81 (.150)	
	43160-1305	43160-1405	5.33 (.210)	
6	43160-1106	43160-1206	3.81 (.150)	
	43160-1306	43160-1406	5.33 (.210)	

With Board Lock

Circuits	Order No.		PCB Thickness	Lead-free
	94V-0	94V-2		
2	43160-3102	43160-3202	1.57 (.062)	Yes
	43160-5302	43160-5402	2.36 (.093)	
	43160-7302	43160-7402	3.18 (.125)	
3	43160-3103	43160-4203	1.57 (.062)	
	43160-5303	43160-5403	2.36 (.093)	
	43160-7303	43160-7403	3.18 (.125)	
4	43160-3104	43160-3204	1.57 (.062)	
	43160-5304	43160-5404	2.36 (.093)	
	43160-7304	43160-7404	3.18 (.125)	
5	43160-3105	43160-3205	1.57 (.062)	
	43160-5305	43160-5405	2.36 (.093)	
	43160-7305	43160-7405	3.18 (.125)	
6	43160-3106	43160-3206	1.57 (.062)	
	43160-5306	43160-5406	2.36 (.093)	
	43160-7306	43160-7406	3.18 (.125)	

PRODUCT SPECIFICATION

SABRE .125(3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA

1.0 SCOPE

This Product Specification covers the 7.50 mm (.295 inch) centerline connector series with 18 to 14 AWG wire using crimp technology with tin and tin-lead plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

PRODUCT NAME	PART NUMBER
Plug Housing, 2 circuit	43680-2002
Plug Housing, 3 circuit	43680-2003
Plug Housing, 4 circuit	43680-2004
Plug Housing, 5 circuit	43680-2005
Plug Housing, 6 circuit	43680-2006
Right Angle Header, 2 circuit	(see SDA-43160-***)
Right Angle Header, 3 circuit	(see SDA-43160-***)
Right Angle Header, 4 circuit	(see SDA-43160-***)
Right Angle Header, 5 circuit	(see SDA-43160-***)
Right Angle Header, 6 circuit	(see SDA-43160-***)
Vertical Header, 2 circuit	(see SDA-43160-***)
Vertical Header, 3 circuit	(see SDA-43160-***)
Vertical Header, 4 circuit	(see SDA-43160-***)
Vertical Header, 5 circuit	(see SDA-43160-***)
Vertical Header, 6 circuit	(see SDA-43160-***)
Receptacle Housing, 2 circuit	44441-2002
Receptacle Housing, 2 circuit	44441-2002
Receptacle Housing, 2 circuit	44441-2002
Receptacle Housing, 2 circuit	44441-2002
Receptacle Housing, 2 circuit	44441-2002
Male Tab Crimp Terminal, Small	43178-1002
Male Tab Crimp Terminal, Large	43178-2002
Male Tab Crimp Terminal, Side by Side	43178-3002
Receptacle Terminal, Small	43375-0001
Receptacle Terminal, Large	43375-1001

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

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

2.3 SAFETY AGENCY APPROVALS

UL File #E29179
CSA File #LR19980

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the appropriate sales drawings for necessary referenced documents and specifications.

4.0 RATINGS

4.1 VOLTAGE

600 Volts AC (RMS)

4.2 CURRENT AND APPLICABLE WIRES

AWG	Amps	Outside Insulation Diameter
14	18	4.57 mm (.180 inch)
16	TBD	4.57 mm (.180 inch)
18	12	4.57 mm (.180 inch)

NOTE: The current capacity is based on each circuit position being loaded with the given wire size, and the rated current applied. The capacity for other applications may be higher.

4.3 TEMPERATURE

Operating: - 40°C to + 75°C
Nonoperating: - 40°C to + 100°C

5.0 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. (Measurement locations in Section 7.0)	**30** milliohms MAXIMUM [initial]
2	**Insulation Resistance**	Unmate & unmount connectors: apply a voltage of **500** VDC between adjacent terminals and between terminals to ground.	**1000** Megohms MINIMUM
3	**Dielectric Withstanding Voltage**	Mate connectors: apply a voltage of 5000 VAC for **1** minute between adjacent terminals and between terminals to ground.	No breakdown; current leakage < **5** mA
4	**Temperature Rise (via Current Cycling)**	Mate connectors: measure the temperature rise at the rated current after **96** hours, Followed by 500 hours of current cycling (**45** minutes ON and **15** minutes OFF perhour).	Temperature rise: **+30**°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

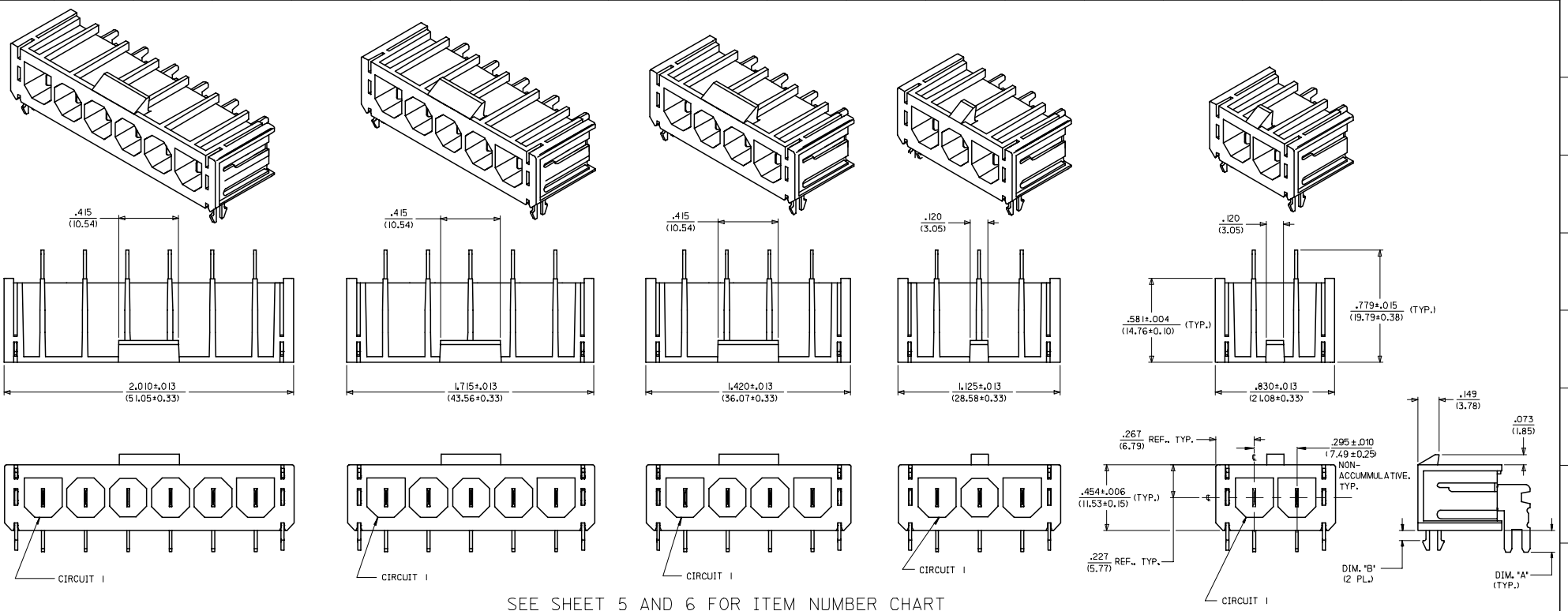
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Connector Mate and Unmate Forces**	Mate and unmate connector (male to female) at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute. (Gage dimensions in Section 7.0)	**13.3** N (**3** lbf) MAXIMUM insertion force & **2.2** N (**.5** lbf) MINIMUM withdrawal force
6	**Terminal Retention Force from Housing** (Receptacle Terminal)	Axial pullout force on the terminal in the housing at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute.	**67** N (**15** lbf) MINIMUM retention force w/ TPA not activated; **125** N (**25** lbf) MINIMUM retention force w/ TPA activated
7	**Terminal Retention Force from Housing** (Male Tab Terminal)	Axial pullout force on the terminal in the housing at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute.	**133** N (**30** lbf) MINIMUM retention force w/ TPA not activated; **133** N (**30** lbf) MINIMUM retention force w/ TPA activated
8	**Durability**	Mate connectors up to **25** cycles at a maximum rate of **10** cycles per minute prior to Environmental Tests.	**3** milliohms MAXIMUM (change from initial)
9	**Vibration (Random)**	Subject mated connectors to vibration with an amplitude of **1.52** mm (**.060** inch) peak to peak; a sweep of 10-55-10 hertz in 1.0 min.; and a duration of 2.0 hours in the ±X,±Y,±Z axes.	**5** milliohms MAXIMUM (change from initial) & Discontinuity < **1** microsecond
10	**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).	**5** milliohms MAXIMUM (change from initial]) & Discontinuity < **1** microsecond
11	**Wire Pullout Force (Axial)**	Apply an axial pullout force on the wire at a rate of **25 ± 6** mm (**1 ± ¼** inch).	14 AWG: **222** N (**50** lbf) 16 AWG: **200** N (**45** lbf) 18 AWG: **133** N (**30** lbf) MINIMUM pullout force
12	**Wire Pullout Force (Right Angle)**	Apply a right angle pullout force on the wire at a rate of **25 ± 6** mm (**1 ± ¼** inch).	******* N (******* lbf) MINIMUM pullout force **{**Recommended minimum value: 75% of tensile strength of the wire**}**
13	**Terminal Insertion Force (into Housing)**	Apply an axial insertion force on the terminal at a rate of **25 ± 6** mm (**1 ± ¼** inch).	**4.4** N (**1.0** lbf) MAXIMUM insertion force

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
14	**Shock (Thermal)**	Mate connectors; expose to **10** cycles of: Temperature °C Duration (Minutes) **-40 +0/-3 30** **+105 +3/-0 30**	**3** milliohms MAXIMUM (change from initial); Visual: No Damage
15	**Thermal Aging**	Mate connectors; expose to: **240** hours at **105 ± 2°**C	**5** milliohms MAXIMUM (change from initial]); Visual: No Damage
16	**Humidity (Steady State)**	Mate connectors: expose to a temperature of **40 ± 2°**C with a relative humidity of **90-95**% for **96** hours.	**5** milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at **500** VAC & Insulation Resistance: **1000** Megohms MINIMUM & Visual: No Damage
17	**Humidity (Cyclic)**	Mate connectors: cycle per EIA-364-31: **24** cycles at temperature between **25 ± 3°**C and **65 ± 3°**C at **95 ± 5**% relative humidity and **25 ± 3°**C and **-10 ± 3°**C with humidity not controlled. Dwell time of **1.0** hour; ramp time of **0.5** hours.	**5** milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at **500** VAC & Insulation Resistance: **1000** Megohms MINIMUM & Visual: No Damage
18	**Solderability**	Solder time 3±0.5 seconds @ 230**±5°**C (A-43160-**** only)	Solder coverage: **95**% MINIMUM (per **SMES-152**)
19	**Salt Spray**	Mate connectors: Duration: **48** hours exposure; Atmosphere: salt spray from a **5**% solution; Temperature: **35 +1/-2°**C	**10** milliohms MAXIMUM (change from initial) & Visual: No Damage
20	**IR Process Soldering**	Molex IR Profile	Dimensional: Conformance to Sales Drawing requirements; Visual: No Damage

6.0 PACKAGING

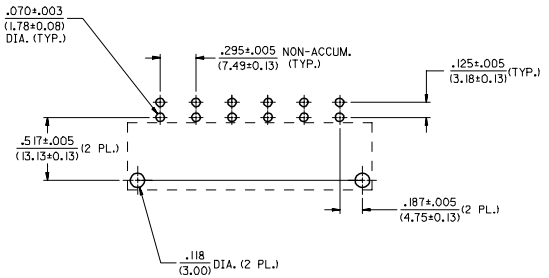
See the appropriate sales drawings for information related to packaging requirements.



SEE SHEET 5 AND 6 FOR ITEM NUMBER CHART

RECOMMENDED P.C. BOARD LAYOUT FOR RIGHT ANGLE HEADERS

SCALE 2:1



6 CIRCUIT LAYOUT SHOWN

NOTES:

1. INSULATOR MATERIAL (SEE CHART):
   A = 30% GLASS-FILLED 46 NYLON, 94V-0, COLOR: BLACK
   B - UNFILLED 66 NYLON, 94BV-2, COLOR: NATURAL (TRANSLUCENT)
   NOTE: HEADER ASSEMBLIES IN 94V-2, 66 NYLON, ARE ONLY APPROVED FOR WAVE SOLDERING PROCESSES.
   TERMINAL MATERIAL: C26000 BRASS
2. TERMINAL FINISH: 35 MICROINCH (0.88 MICROMETER) MINIMUM TIN OVER 20 MICROINCH (0.50 MICROMETER) MINIMUM COPPER.
   * THE PRIMARY SHIPPING CARTON WILL BE LABELED "COMPLIANT TO RoHS DIRECTIVE 2002/95/EC AND ELV ANNEX II OF DIRECTIVE 2000/53/EC." CARTONS WITHOUT THIS LABEL MAY CONTAIN PRODUCT WITH TIN-LEAD IN THE PC TAILS.
3. PRODUCT SPECIFICATION: PSX-44441-9999.
4. PACKAGING: SEE CHART.
5. THESE HEADERS MATE WITH 43179, 43335, OR 44441 RECEPTACLE HOUSINGS.
6. SEE SHEETS 1, 2 AND 3 FOR VERTICAL HEADER ASSEMBLIES AND THEIR RESPECTIVE PART NUMBERS.
7. SEE SHEETS 4, 5 AND 6 FOR RIGHT ANGLE HEADER ASSEMBLIES AND THEIR RESPECTIVE PART NUMBERS.
8. DIMENSIONS ARE FOR REFERENCE ONLY UNLESS INDICATED OTHERWISE.

SOLDER TAIL	DIM. "A" ±.011/(0.28)
SHORT	.150/(3.81)
LONG	.210/(5.33)

BOARD LOCK	DIM. "B" ±.004/(0.10)
.062	.070/(1.78)
.094	.102/(2.59)
.125	.133/(3.38)

SEE SHEET ONE
EC NO: UCP2007-0489 2006/08/29
DRWN: CSTEWART 2006/08/31
CHKD: BW1RKUS 2006/08/31
APPR: BW1RKUS 2006/08/31
DESCRIPTION
REV
H1

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	±.005
2 PLACES	± 0.13	±.01
1 PLACE	± 0.25	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: IN/MM
SCALE: 3:1
DESIGN UNITS: INCH
THIRD ANGLE PROJECTION

DRAWN BY: GC DATE: 11/30/95
CHECKED BY: KBP DATE: 11/30/95
APPROVED BY: RAS DATE: 11/30/95

TITLE: SABRE HEADER ASSY
RT. ANGLE, 2-6 & 8 CIR.
.125/(3.18)X.020/(0.51)

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SDA-43160-****
SHEET NO.: 4 OF 6
SIZE: D

RT. ANGLE HEADER ASSEMBLY ITEM NO.	PART CHARACTERISTICS FOR RIGHT ANGLE HEADER				PACKAGING SPECIFICATIONS
	CIRCUIT SIZE	HSG. MAT'L (SEE NOTE 1)	SOLDER TAIL	BOARD LOCK	
43160-1102	2	A	SHORT	N/A	PK-43160-0010
43160-1202	2	B	SHORT	N/A	PK-43160-0010
43160-1302	2	A	LONG	N/A	PK-43789-001
43160-1402	2	B	LONG	N/A	PK-43789-001
43160-3102	2	A	SHORT	.062	PK-43789-001
43160-3202	2	B	SHORT	.062	PK-43789-001
43160-5102	2	A	SHORT	.094	PK-43789-001
43160-5202	2	B	SHORT	.094	PK-43789-001
43160-5302	2	A	LONG	.094	PK-43789-001
43160-5402	2	B	LONG	.094	PK-43789-001
43160-7302	2	A	LONG	.125	PK-43789-001
43160-7402	2	B	LONG	.125	PK-43789-001
43160-1103	3	A	SHORT	N/A	PK-43160-0010
43160-1203	3	B	SHORT	N/A	PK-43160-0010
43160-1303	3	A	LONG	N/A	PK-43789-001
43160-1403	3	B	LONG	N/A	PK-43789-001
43160-3103	3	A	SHORT	.062	PK-43789-001
43160-3203	3	B	SHORT	.062	PK-43789-001
43160-5103	3	A	SHORT	.094	PK-43789-001
43160-5203	3	B	SHORT	.094	PK-43789-001
43160-5303	3	A	LONG	.094	PK-43789-001
43160-5403	3	B	LONG	.094	PK-43789-001
43160-7303	3	A	LONG	.125	PK-43789-001
43160-7403	3	B	LONG	.125	PK-43789-001

RT. ANGLE HEADER ASSEMBLY ITEM NO.	PART CHARACTERISTICS FOR RIGHT ANGLE HEADER				PACKAGING SPECIFICATIONS
	CIRCUIT SIZE	HSG. MAT'L (SEE NOTE 1)	SOLDER TAIL	BOARD LOCK	
43160-1104	4	A	SHORT	N/A	PK-43160-0010
43160-1204	4	B	SHORT	N/A	PK-43160-0010
43160-1304	4	A	LONG	N/A	PK-43789-001
43160-1404	4	B	LONG	N/A	PK-43789-001
43160-3104	4	A	SHORT	.062	PK-43789-001
43160-3204	4	B	SHORT	.062	PK-43789-001
43160-5104	4	A	SHORT	.094	PK-43789-001
43160-5204	4	B	SHORT	.094	PK-43789-001
43160-5304	4	A	LONG	.094	PK-43789-001
43160-5404	4	B	LONG	.094	PK-43789-001
43160-7304	4	A	LONG	.125	PK-43789-001
43160-7404	4	B	LONG	.125	PK-43789-001
43160-1105	5	A	SHORT	N/A	PK-43160-0010
43160-1205	5	B	SHORT	N/A	PK-43160-0010
43160-1305	5	A	LONG	N/A	PK-43789-001
43160-1405	5	B	LONG	N/A	PK-43789-001
43160-3105	5	A	SHORT	.062	PK-43789-001
43160-3205	5	B	SHORT	.062	PK-43789-001
43160-5105	5	A	SHORT	.094	PK-43789-001
43160-5205	5	B	SHORT	.094	PK-43789-001
43160-5305	5	A	LONG	.094	PK-43789-001
43160-5405	5	B	LONG	.094	PK-43789-001
43160-7305	5	A	LONG	.125	PK-43789-001
43160-7405	5	B	LONG	.125	PK-43789-001

RT. ANGLE HEADER ASSEMBLY ITEM NO.	PART CHARACTERISTICS FOR RIGHT ANGLE HEADER				PACKAGING SPECIFICATIONS
	CIRCUIT SIZE	HSG. MAT'L (SEE NOTE 1)	SOLDER TAIL	BOARD LOCK	
43160-1106	6	A	SHORT	N/A	PK-43160-0010
43160-1206	6	B	SHORT	N/A	PK-43160-0010
43160-1306	6	A	LONG	N/A	PK-43789-001
43160-1406	6	B	LONG	N/A	PK-43789-001
43160-3106	6	A	SHORT	.062	PK-43789-001
43160-3206	6	B	SHORT	.062	PK-43789-001
43160-5106	6	A	SHORT	.094	PK-43789-001
43160-5206	6	B	SHORT	.094	PK-43789-001
43160-5306	6	A	LONG	.094	PK-43789-001
43160-5406	6	B	LONG	.094	PK-43789-001
43160-7306	6	A	LONG	.125	PK-43789-001
43160-7406	6	B	LONG	.125	PK-43789-001

SEE SHEET ONE
ECC NO: UCP2006-2184 2006/03/17
DRWN:CSTEWART 2006/03/28
CHKD:BWIRKUS 2006/03/29
APPR:BWIRKUS
DESCRIPTION
REV
H

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	±---
3 PLACES	± ---	±.005
2 PLACES	± 0.13	±.01
1 PLACE	± 0.25	±---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: IN/MM
SCALE: 1:1
DESIGN UNITS: INCH
THIRD ANGLE PROJECTION

DRAWN BY: GC DATE: 11/30/95
CHECKED BY: KBP DATE: 11/30/95
APPROVED BY: RAS DATE: 11/30/95

TITLE: SABRE HEADER ASSY
RT. ANGLE, 2-6 & 8 CIR.
.125/(3.18)X.020/(0.51)

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SDA-43160-****
SHEET NO.: 5 OF 6
SIZE: D