

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 plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

PRODUCT NAME	PART NUMBER
Plug Housing, 2 circuit	43680-1002, -2002, -3002
Plug Housing, 3 circuit	43680-1003, -2003, -3003
Plug Housing, 4 circuit	43680-1004, -2004, -3004
Plug Housing, 5 circuit	43680-1005, -2005, -3005
Plug Housing, 6 circuit	43680-1006, -2006, -3006
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-****)
Right Angle Header, 8 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-****)
Vertical Header, 8 circuit	(see SDA-43160-****)
Receptacle Housing, 2 circuit	44441-1002, -2002, -3002
Receptacle Housing, 3 circuit	44441-1003, -2003, -3003
Receptacle Housing, 4 circuit	44441-1004, -2004, -3004
Receptacle Housing, 5 circuit	44441-1005, -2005, -3005
Receptacle Housing, 6 circuit	44441-1006, -2006, -3006
Receptacle Housing, 8 circuit	44441-1008, -2008, -3008
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

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2016-3336 DATE: 2016/2/24	TITLE: PRODUCT SPECIFICATION SABRE .125 (3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA	SHEET No. 1 of 5
DOCUMENT NUMBER: PS-44441-9999	CREATED / REVISED BY: MBANDURA	CHECKED BY: BANDERSON	APPROVED BY: FSMITH

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

TUV Certificate #R72130381

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

Circuit Size	Wire Gauge	Configuration	Current Rating (Amps)			
2	14	Wire To Wire	18			
	16		13			
	18		12			
4	14		Wire To Board	16		
	16			14		
	18			11		
6	14			Wire To Board	16	
	16				13	
	18				10	
2	14				Wire To Board	18
	16					15
	18					13
6	14	Wire To Board				16
	16					14
	18					11
8	14		Wire To Board			14
	16					13
	18					12

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

REVISION: B	ECR/ECN INFORMATION: EC No:UCP2016-3336 DATE:2016/2/24	TITLE: PRODUCT SPECIFICATION SABRE .125 (3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA	SHEET No. 2 of 5
DOCUMENT NUMBER: PS-44441-9999	CREATED / REVISED BY: MBANDURA	CHECKED BY: BANDERSON	APPROVED BY: FSMITH

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

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2016-3336 DATE: 2016/2/24	TITLE: PRODUCT SPECIFICATION SABRE .125 (3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA	SHEET No. 3 of 5
DOCUMENT NUMBER: PS-44441-9999	CREATED / REVISED BY: MBANDURA	CHECKED BY: BANDERSON	APPROVED BY: FSMITH

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.	67 N (15 lbf) MINIMUM retention force w/ TPA not activated; 100 N (22.5 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

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
B	EC No:UCP2016-3336 DATE:2016/2/24	PRODUCT SPECIFICATION SABRE .125 (3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA	4 of 5
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-44441-9999	MBANDURA	BANDERSON	FSMITH

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.

REVISION: B	ECR/ECN INFORMATION: EC No:UCP2016-3336 DATE:2016/2/24	TITLE: PRODUCT SPECIFICATION SABRE .125 (3.18) X .020 (0.51) FLAT BLADE SYSTEM WITH TPA	SHEET No. 5 of 5
DOCUMENT NUMBER: PS-44441-9999	CREATED / REVISED BY: MBANDURA	CHECKED BY: BANDERSON	APPROVED BY: FSMITH