

## DESCRIPTION

## PRODUCT COVERED:

\* USR, CNR Components - Connectors, Minipak Series, Models 376-0001-00200, 376-0076-10100, 376-0076-10200, 377-0011-00110, Models 376-XXXX-XXXXX and 377-XXXX-XXXXX, where XXXX is 0000 to 9999, followed by 00, followed by any number 1 to 3, followed by any number 0 to 4, followed by 1 or 0; Models 6651380-1, 6651381-2, 6651381-3, 6651668-1, 6651669-1, 6651670-1, 6651671-1, 6651672-1, 6651673-1, 6651742-1, 6651743-1, 1766056-1, 6643841-1, 6643857-1, 6651199-1, 6651200-1, 6651608-1, 6766085-1.

## ELECTRICAL RATINGS:

<u>Circuit Configuration</u>	<u>PWB Cu. Wt.</u>	<u>(USR) Rating</u>	<u>(CNR) Rating</u>
A (10-contact group)	5 oz	250 V, 45 A	250 V, 28 A
B (signal group)	5 oz	125 V, 2 A	125 V, 1 A
C (5-contact group)	5 oz	250 V, 25 A	250 V, 17 A
D (30-contact group)	5 oz	250 V, 115 A	250 V, 65 A
E (20-contact group)	5 oz	250 V, 80 A	250 V, 50 A
A (10-contact group)	2 oz	250 V, 35 A	250 V, 20 A
B (signal group)	2 oz	125 V, 1.5 A	125 V, 0.8 A
C (5-contact group)	2 oz	250 V, 10 A	250 V, 7.5 A
D (30-contact group)	2 oz	250 V, 70 A	250 V, 45 A
E (20-contact group)	2 oz	250 V, 50 A	250 V, 30 A

Electrical Ratings for Connector Models 376-XXXX-XXXXX and 377-XXXX-XXXXX, where XXXX is 0000 to 9999, followed by 00, followed by any number 1 to 3, followed by any number 0 to 4, followed by 1 or 0; and Model 6651672-1.

<u>Pin/Contact type</u>	<u>USR RATING</u>	<u>CNR RATING</u>
10 Solder Tail Contact/Pin (6.5 mm Pitch)	250 V, 60 A	250 V, 40 A
5 Solder Tail Contact/Pin (6.5 mm Pitch)	250 V, 45 A	250 V, 30 A
10 Tail Solder Tail Contact/Pin (4.5 mm Pitch)	250 V, 45 A	250 V, 28 A
5 Solder Tail Contact/Pin (4.5 mm Pitch)	250 V, 42 A	250 V, 25 A
Signal Contact/Pin	125 V, 2 A	125 V, 1 A

These devices are multi-pole connectors employing contacts of the solder and compliant termination type for use in electrical equipment where Underwriters Laboratories, Inc. determines the acceptability of the combinations.

## ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE'S USE):

USR indicates investigations to United States Standard, UL 1977, First Edition, dated December 22, 1995.

CNR indicates investigation to Canadian Standard, Special Use Attachment Plugs, Receptacles, and Connectors, C22.2, No. 182.3-M1987.

Use - For use only in or with complete equipment where Underwriters Laboratories, Inc. determines the acceptability of the combination.

Conditions of Acceptability - In order to be judged acceptable as a component of electrical equipment, the following conditions should be met:

1. These devices should not be used for current interruption.
2. The electrical and mechanical contact between the connector and the printed wiring board is to be judged in the end-use equipment.

3. These devices have been independently investigated for the following current loads carried by each pole of the following circuit configurations:

## USR evaluation

<u>Circuit Configuration#</u>	<u>PWB Cu. Wt.</u>	<u>Test Current</u>	<u>Max Temp.</u>	<u>Ambient</u>
A (10-contact group)	5 oz	45 A	98°C	24°C
B (signal group)	5 oz	2 A	108°C	24°C
C (5-contact group)	5 oz	25 A	104°C	24°C
D (30-contact group)	5 oz	115 A	103°C	24°C
E (20-contact group)	5 oz	80 A	104°C	24°C
A (10-contact group)	2 oz	35 A	99°C	25°C
B (signal group)	2 oz	1.5 A	99°C	25°C
C (5-contact group)	2 oz	10 A	94°C	25°C
D (30-contact group)	2 oz	70 A	96°C	25°C
E (20-contact group)	2 oz	50 A	92°C	25°C
A (10-contact group)	5 oz	28 A	53°C	24°C
B (signal group)	5 oz	1 A	53°C	24°C
C (5-contact group)	5 oz	17 A	52°C	24°C
D (30-contact group)	5 oz	65 A	50°C	24°C
E (20-contact group)	5 oz	50 A	51°C	24°C
A (10-contact group)	2 oz	20 A	49°C	24°C
B (signal group)	2 oz	0.8 A	50°C	24°C
C (5-contact group)	2 oz	7.5 A	52°C	24°C
D (30-contact group)	2 oz	45 A	53°C	24°C
E (20-contact group)	2 oz	30 A	50°C	24°C

# - See ILL. 1 for circuit configurations.

4. The operating temperature of the USR devices should not exceed the temperature rating of the insulating material (130°C). The operating temperature of the CNR devices should not exceed 55°C, adjusted to a 25°C ambient.

5. These PWB mounted connectors have been tested with a continuous filament woven glass fabric reinforced epoxy printed wiring board with the following trace dimensions. For details on the PWB layout, see ILL. 7.

<u>PWB Cu. Wt.</u>	<u>Circuit Configuration</u>	<u>Trace Thickness</u>	<u>Minimum Trace Width</u>
5 ounce	A (10-contact group)	0.007 in.	0.22 in.
5 ounce	B (signal contact group)	0.007 in.	0.015 in.
5 ounce	C (5-contact group)	0.007 in.	0.1 in.
5 ounce	D (30-contact group)	0.007 in.	0.574 in.
5 ounce	E (20-contact group)	0.007 in.	0.54 in.
2 ounce	A (10-contact group)	0.0028 in.	0.22 in.
2 ounce	B (signal contact group)	0.0028 in.	0.015 in.
2 ounce	C (5-contact group)	0.0028 in.	0.1 in.
2 ounce	D (30-contact group)	0.0028 in.	0.574 in.
2 ounce	6 AWG 20-contact group	0.0028 in.	0.54 in.

6. The maximum temperature recorded for the 10-Tail (6.5 mm Pitch) pin/contact was 81.3°C in an ambient of 26.5°C for a current of 60 A. The maximum temperature recorded for the 5-Tail (6.5 mm Pitch) pin/contact was 85.5°C in an ambient of 26.5°C for a current of 45A. The maximum temperature recorded for the 5-Tail (4.5 mm Pitch) pin/contact was 93.2°C in an ambient of 26.5°C for a current of 42 A. The maximum temperature recorded for the Signal pin/contact was 55.4°C in an ambient of 23.7°C for a current of 2 A.

7. The maximum temperature recorded for the 10-Tail (6.5 mm Pitch) pin/contact was 48.8°C in an ambient of 24°C for a current of 40 A. The maximum temperature recorded for the 5-Tail (6.5 mm Pitch) pin/contact was 52.9°C in an ambient of 24°C for a current of 45A. The maximum temperature recorded for the 5-Tail (4.5 mm Pitch) pin/contact was 49.9°C in an ambient of 24°C for a current of 25 A. The maximum temperature recorded for the Signal pin/contact was 49.6°C in an ambient of 24°C for a current of 1 A.

8. The maximum temperature recorded for an individual 10-Tail (6.5 mm Pitch) pin/contact was 87.7°C in an ambient of 23.7°C for a current of 65 A. The maximum temperature recorded for an individual 5-Tail (6.5 mm Pitch) pin/contact was 89.6°C in an ambient of 23.75°C for a current of 45A. The maximum temperature recorded for an individual signal pin/contact was 86.8°C in an ambient of 23.7°C for a current of 13 A.

9. The maximum temperature recorded for an individual 10-Tail (6.5 mm Pitch) pin/contact was 51.6°C in an ambient of 23.8°C for a current of 45 A. The maximum temperature recorded for an individual 5-Tail (6.5 mm Pitch) pin/contact was 53.3°C in an ambient of 23.8°C for a current of 37A. The maximum temperature recorded for an individual signal pin/contact was 38°C in an ambient of 23.8°C for a current of 6 A.

10. Models 6651380-1, 6651381-2, 6651381-3, 6651668-1, 6651669-1, 6651670-1, 6651671-1, 6651672-1, 6651673-1, 6651742-1, 6651743-1, 1766056-1, 6643841-1, 6643857-1, 6651199-1, 6651200-1, 6651608-1 and 6766085-1 are identical to Models 377-0054-01110, 376-0054-01130, 377-0070-01130, 376-0070-01200, 377-0071-01110, 376-0071-01110, 377-0072-00110, 376-0072-00110, 377-0069-01110, 376-0069-01200, 377-0084-11110, 376-0001-00200, 376-0030-00200, 376-0051-00130, 377-0051-00110, 377-0073-00110, 376-0076-00100. See ILL. 17 for part number correlation.