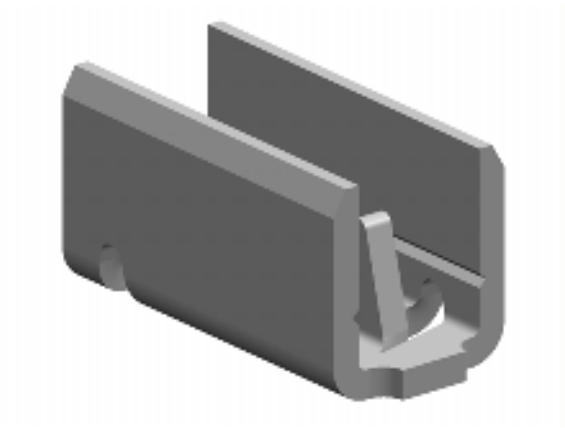
ENGINEERED INTERCONNECTION SOLUTIONS

Test Report
for

Part Number 1286
Part Number 1293
Part Number 1295

Revised 8/1/14



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SCOPE:

The intent of this test report is to document test results recorded for various applied conditions to a family of new connectors noted as Part Numbers 1295, 1286, and 1293. The test was designed to verify the reliability of these terminals.

PULL TESTS:

1. Pull tests were performed to illustrate the strength of the wire and connector interface after crimping, while the terminal was surface mounted onto a PCB.

   The connector was mounted onto a copper clad .062 inch thick FR4 Printed Circuit Board. Solder paste a thickness of .006" was applied to the solder pad, the terminal was placed, and the board was reflowed through an oven.

   A 50 lb Chatillon force gauge and test stand was used to apply the load. Forces were applied in two directions.

   A. Straight axial tensile load was applied to stranded wire along the axis of the connector.

      Load data recorded (in pounds):

Part Number	Ref. Wire AWG	Pull Force Applied			
1295	22 AWG	13.30	11.60	11.10	8.40
1286	18 AWG	16.90	19.02	20.70	21.90
1293	12 AWG	40.70	42.00	44.20	29.30

      Mode of failure was that the wire pulled out of the terminal. The crimped terminal was not deformed. (Fig. 1)

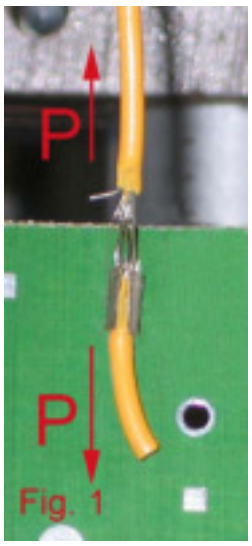


Fig. 1

B. Straight axial tensile load was applied to the stranded wire perpendicular to the axis of the connector, pulling away from the surface of the printed circuit board. This was simply a test to determine how much force was required to pull the wire from the connector.

Load data recorded (in pounds):

Part Number	Ref. Wire AWG	Pull Force Applied			
1295	22 AWG	10.00	8.30	12.70	10.00
1286	18 AWG	15.92	14.56	15.48	16.36
1293	12 AWG	18.40	16.80	17.10	17.50

Mode of failure was that the wire PVC insulation stripped from the wire and/or the crimped terminal deformed slightly during wire pullout. (Fig. 2)

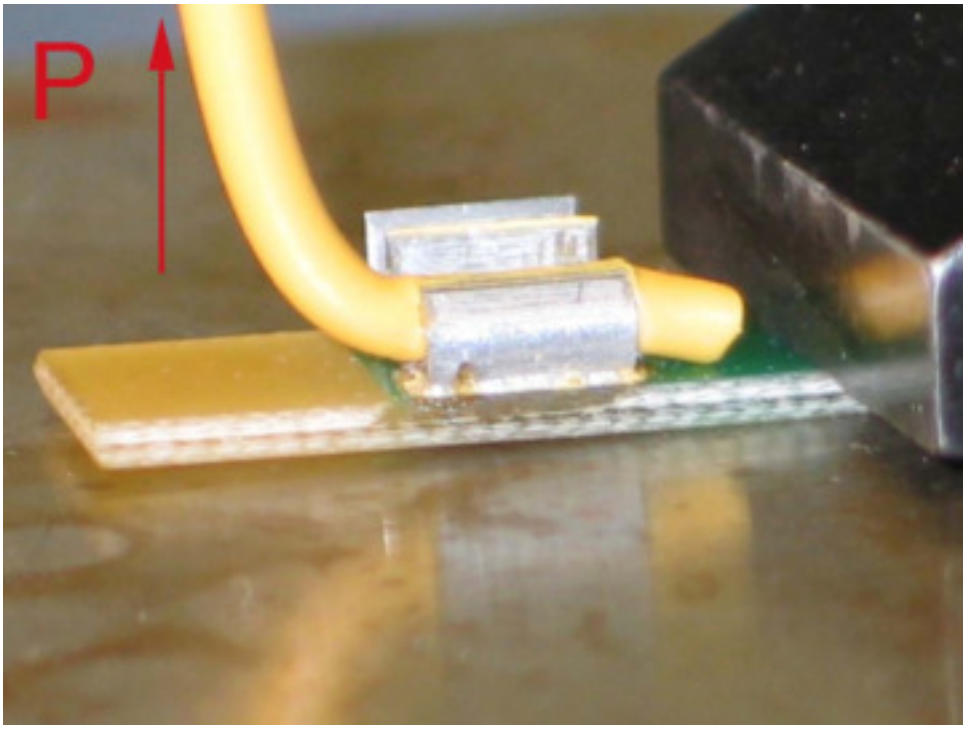


Fig. 2

PUSH TESTS:

1. Push force tests were performed to test the terminal's retention to the PC Board.

   A 100 lb Chatillon force gauge and test stand was used to apply the load. Forces were applied in two directions.

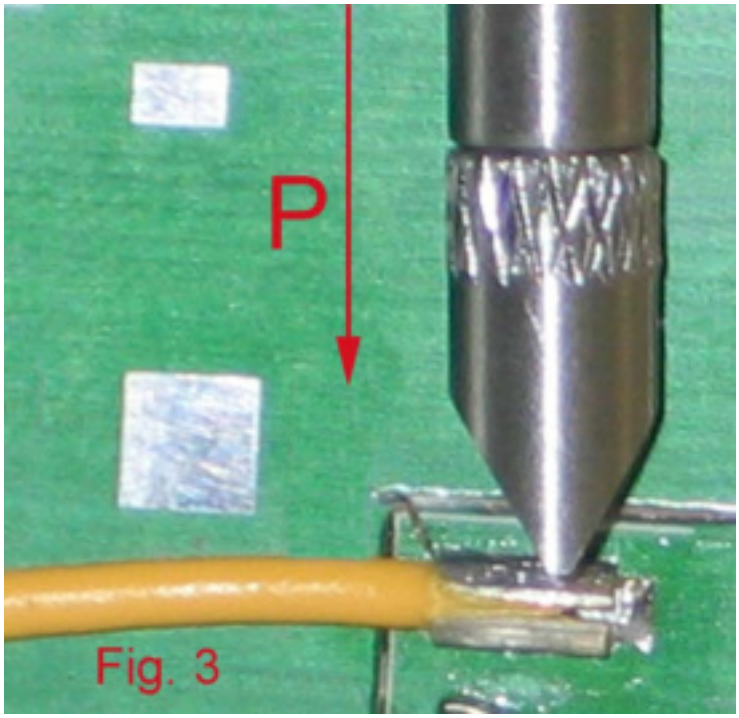
   A. The Push load was applied perpendicular to the axis of the connector along the plane of the Printed Circuit Board while surface mounted, as shown in Figure 3. The push force test was performed with the wire crimped in the connector.

      Load data recorded (in pounds):

Part Number	Ref. Wire AWG	Push Force Applied			
1295	22 AWG	42.16	47.62	47.84	46.35
1286	18 AWG	39.22	49.76	35.58	54.90
1293	12 AWG	100+	100+	100+	100+

(Maximum Load measure on Force Gauge)

      Mode of failure was that the solder joint failed. The wire was still retained in the connector. The copper pad remained on the board. The Crimped terminal was not deformed. (Fig.3)



B. The Push load was applied along the axis of the surface mounted connector without a crimped wire, as shown in Figure 4.

Load data recorded (in pounds):

Part Number	Ref. Wire AWG	Push Force Applied			
1295	22 AWG	66.30	62.90	55.60	79.70
1286	18 AWG	79.00	45.20	69.30	51.60
1293	12 AWG	96.30	100+	100+	100+

Mode of failure was that the solder joint failed and/or the copper pad tore. The uncrimped terminal was not deformed. (Fig. 4)

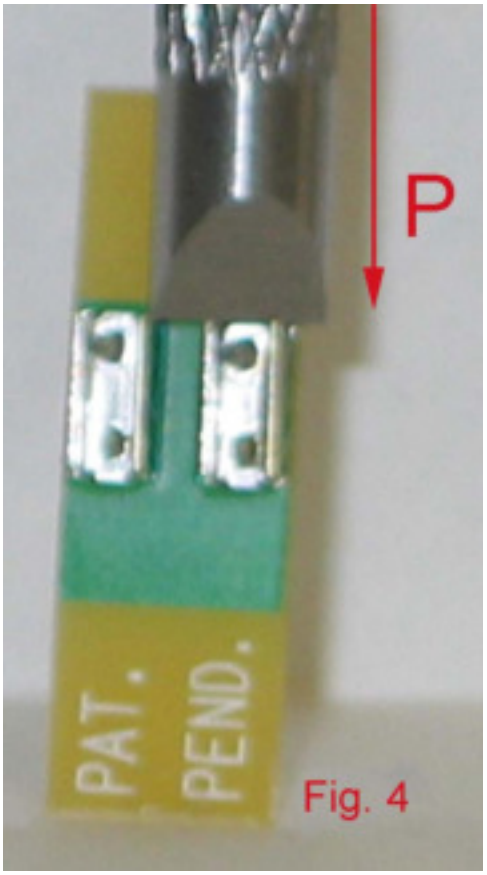


Fig. 4

AMPACITY DETERMINATION

The heat rise test was conducted during UL qualification testing. The current limit was established at a 30 degree Celsius rise above ambient, as detailed in the UL 1977 Standard.

Six crimped connector specimens for each Part Number were used in the test. Ambient temperatures were recorded for each part.

The specimens were connected to a power supply. Current was then applied in increments and held until thermal equilibrium was achieved. The temperature of each connector was recorded with a thermocouple. The data listed was determined to be a maximum current rating of each Part Number.

IMPORTANT: THESE TESTS WERE CONDUCTED IN AN OPEN AIR ENVIRONMENT. IT IS STRONGLY RECOMMENDED THAT CUSTOMERS PERFORM VALIDATION TESTING IN THEIR SPECIFIC APPLICATION AS RESULTS CAN BE INFLUENCED BY SEVERAL FACTORS.

Heat Rise Test Data for Part Number 1295

Test Current 6.5 Amperes

TEMPERATURE, Degrees Celsius						
Sample Number						Ambient
1	2	3	4	5	6	
26.0	18.4	20.2				24.4
24.9	17.5	19.9				23.7
25.3	17.8	20.0				24.4
			28.4	26.9	24.6	21.8
			28.1	26.8	24.6	21.8
			28.2	26.9	24.6	21.8

Heat Rise Test Data for Part Number 1286

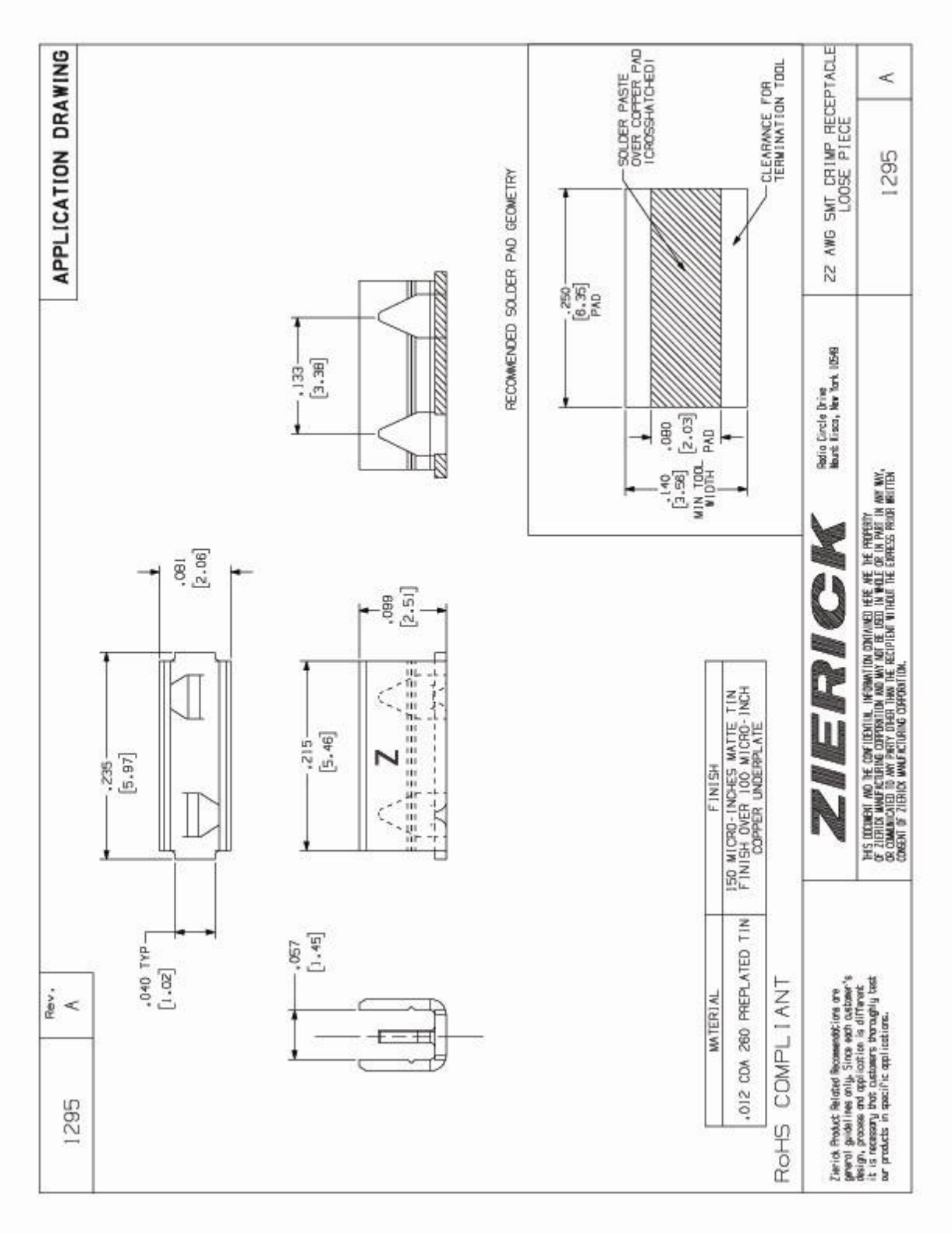
Test Current 13.0 Amperes

TEMPERATURE, Degrees Celsius						
Sample Number						Ambient
1	2	3	4	5	6	
28.8	26.2	24.7				22.0
28.7	24.3	24.9				21.9
27.9	25.2	24.3				22.0
			26.3	28.0	29.3	22.6
			26.2	27.6	28.3	22.6
			25.7	27.6	28.1	22.6

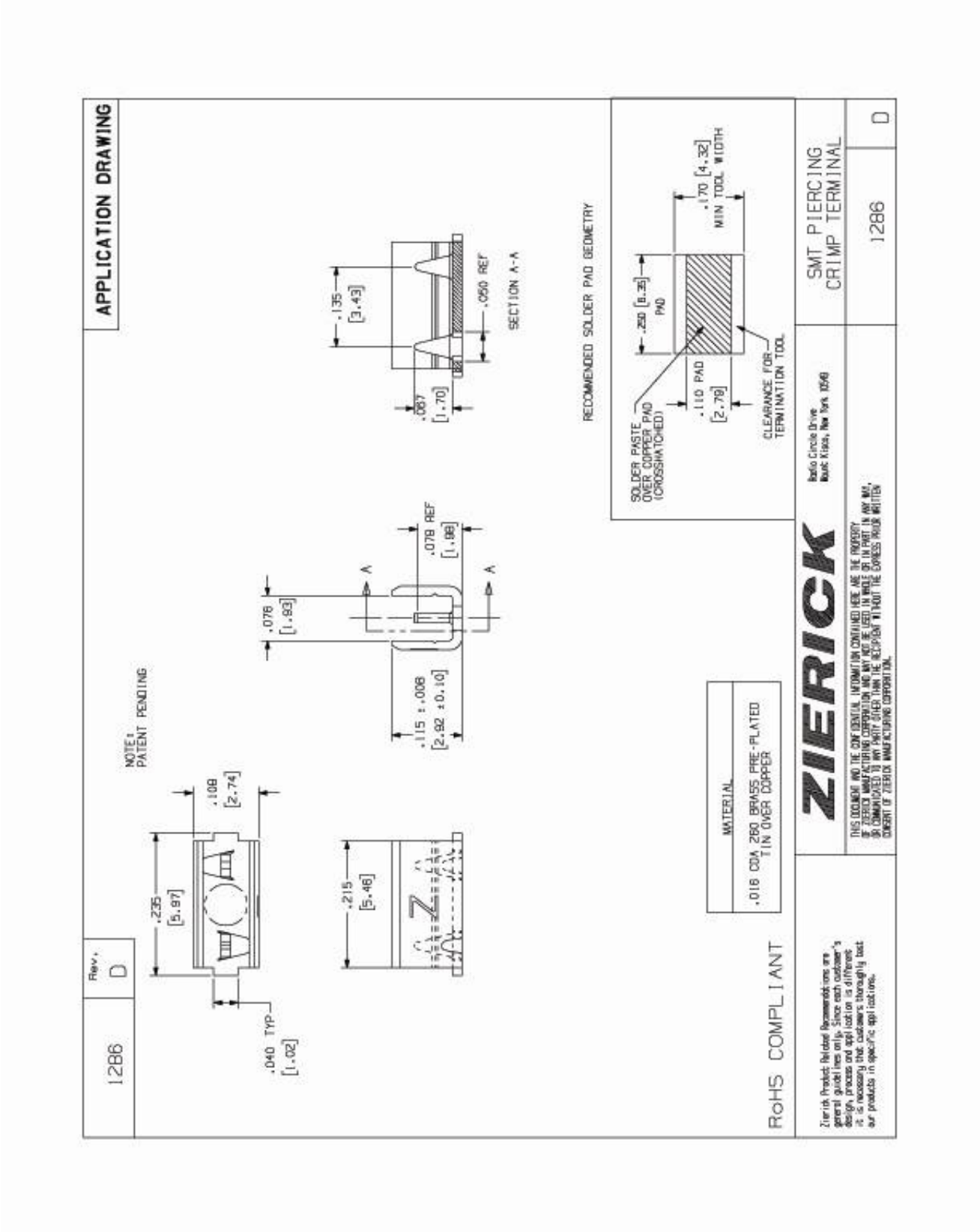
Heat Rise Test Data for Part Number 1293

Test Current 16.0 Amperes

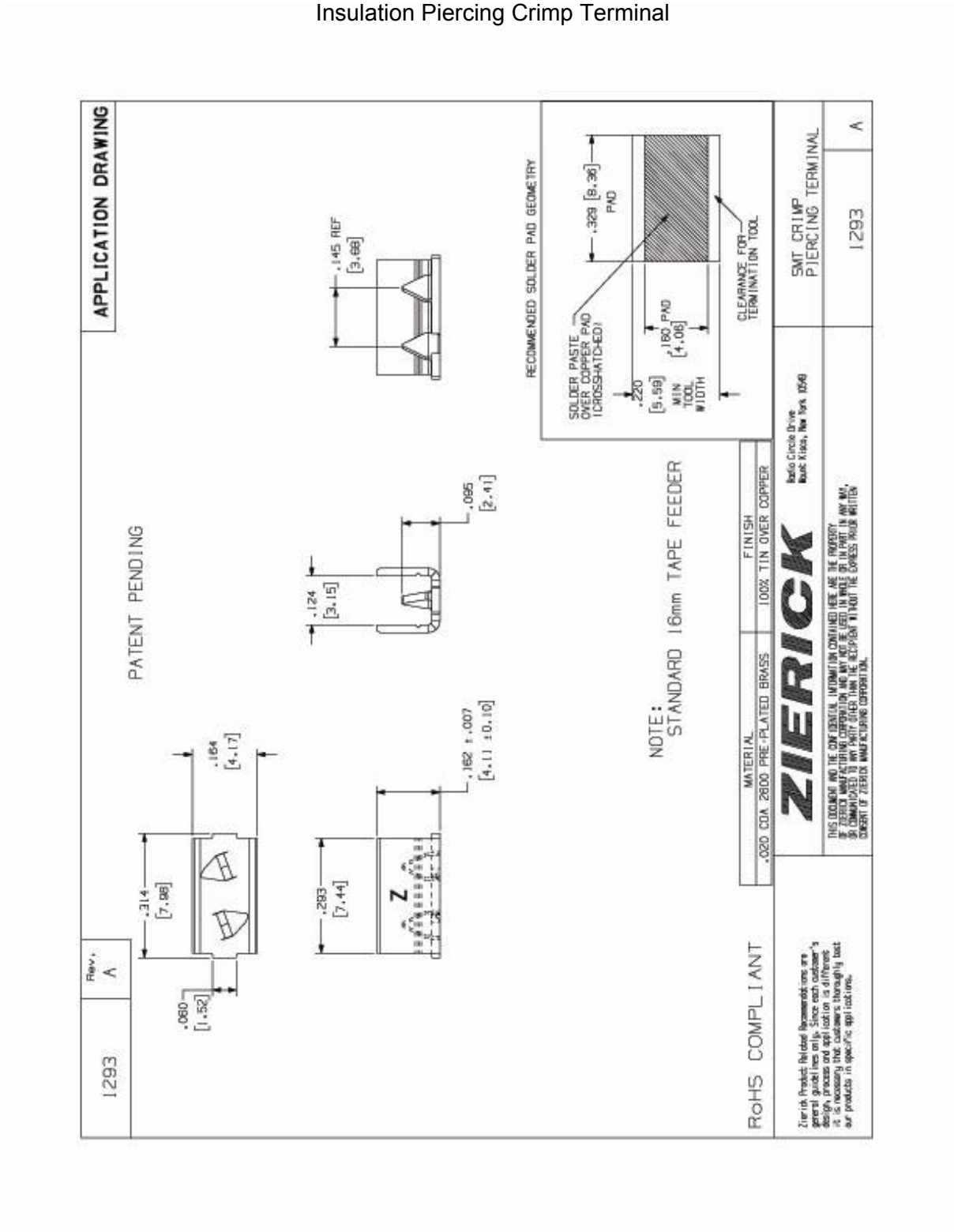
TEMPERATURE, Degrees Celsius						
Sample Number						Ambient
1	2	3	4	5	6	
25.9	25.0	23.0				21.7
25.5	24.8	22.4				21.8
25.1	24.8	22.3				21.8
			24.6	28.7	28.8	22.9
			24.2	28.3	28.4	22.8
			24.2	27.8	28.2	22.8



Application Drawing for PN 1295



Application Drawing for PN 1286



Application Drawing for PN 1293