



METAL CLAD CIRCUIT BOARD

ADVANTAGES: This metal clad circuit board material has a middle range thermal dissipation property, which permits it to be preferable in those applications where the soldering operation may damage the electronic component before a good electrical/mechanical bond is achieved. This is generally a factor in application of the highest optical output LEDs and in audio amplifiers. The primary advantages lie in cost and delivery. And JP-Clad represents a cost-to-user about 1/3 less than the price of comparable material obtained elsewhere, and with “quick-turn” of 18” X 24” panel capabilities. Comparative basis is materials from Bergquist, Thermagon, CCI, Denka, NRK, and Hitachi, all of whom offer similar product. JP-Clad is available in all types and grades of Aluminum including the popular 5052 and 6062 as well as several thicknesses including the standard circuit board 32 mil and 62 mil dimensions. JP-Clad may also be formed to 90 degree bends with inside circuit providing the bend is gradual.

APPLICATIONS: JP-Clad circuit board material is useful in many high brightness LED, audio amplification, and power supply applications. While specifically designed as a low cost, intermediate heat transfer mounting substrate for surface mounted high brightness LEDs almost any application where heat needs to be removed from a semiconductor can benefit from JP-Clad’s excellent thermal properties.

HEAT TRANSFER: Heat transfer data comparing JP-Clad and Bergquist Thermolclad material is provided below. This data shows the JP-Clad and Bergquist material to be close in overall thermal dissipation, however the somewhat lower heat transfer of JP-Clad permits soldering of components with

ease and little or no pre-heating. By design, JP-Clad interface materials are not as thermally conductive, and this is a critical advantage particularly regarding LED applications where long soldering dwell-time and an associated high component temperature can be harmful to the LED chip and packaging.

COMPARATIVE ANALYSIS THERMOCLAD VS J-P CLAD

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Power in W Temp in deg C Voltage in mv Current in ma Tambient = 19.5 C

Bergquist Thermoclad

Time (min)	Circuit Temp	Back Temp	Current	Voltage	Power
0	18.5	18.5	33.8	32.8	1.11
3	35.4	30.3	33.8	32.8	1.11
5	37.7	32	33.3	32.4	1.08
8	40.4	34.7	33.7	32.9	1.11
10	42.3	36.1	33.7	32.8	1.11
34	46.3	40.1	33.7	32.8	1.11
60	46.7	40.3	33.5	32.7	1.10

Bentwater J-P Clad

Time (min)	Circuit Temp	Back Temp	Current	Voltage	Power
0	17.6	17.6	33.3	32.6	1.09
3	38.4	28.8	33.3	32.6	1.09
5	40.9	31.2	33.3	32.5	1.08
8	43.8	33.5	33.6	32.7	1.10
10	44.7	34.2	33.3	32.6	1.09
34	43.9	35.6	32.6	32.7	1.07
60	50.6	39.6	33.2	32.5	1.08

Total area 3.88 in²

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