

# Standard Hybrid Microcircuits



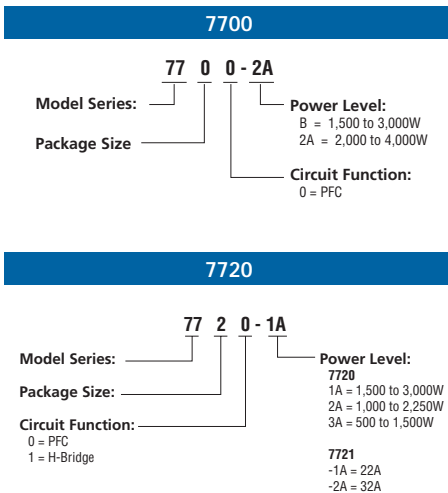
Power Modules  
Power Factor Correction

Power Modules H-Bridge

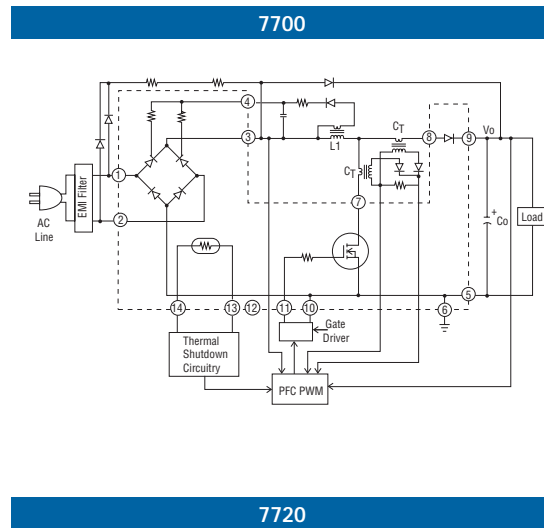
Model	7700B	7700-2A	7720	7721-X
Output Power, Watts	1,500 to 3,000	2,000 to 4,000	500 to 3,000	
FET, Max. or IGBT, Max	0.1w 500 Volts FET	67 mW 500 Volts, Low Charge FET	0.1, 0.13, 0.2w 500 Volts FET	2.5 Volts @ 32 Amps - 2A 3.0 Volts @ 22 Amps - 1A 500 Volts
Output Diodes, Max.	2.8 Volts @ 24 Amps 600 Volts Hyperfast	2.8 Volts @ 50 Amps 600 Volts Hyperfast	2.8 Volts @ 18, 25 Amps 600 Volts Hyperfast	2.8 Volts @ 50 Amps - 2A 2.8 Volts @ 24 Amps - 1A 600 Volts Ultrafast
Bridge	1.2 Volts @ 25 Amps 600 Volts, w / SCRs	1.2 Volts @ 40 Amp 800 Volts, w / SCRs	1.2 Volts @ 18, 25 Amps 600 Volts	
Thermistor (NTC) Ohms	25K	25K	25K	25K
Operating Temp. Range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C

Designed to optimally facilitate a boost type power factor correction (PFC) system for designs with up to 25Arms input current. Standard applications include switching power supplies from 500 to 4,000 watts with line voltages from 84 to 265Vrms.

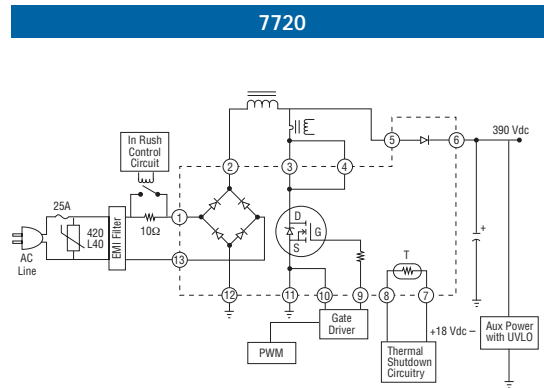
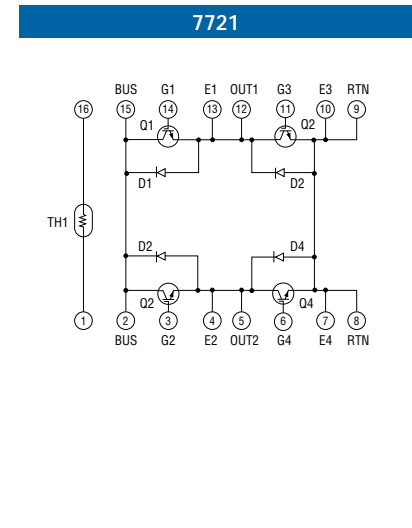
## Ordering Information



## System Diagrams



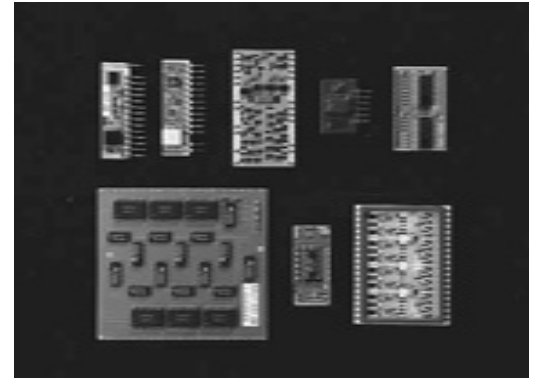
## Schematic Diagram



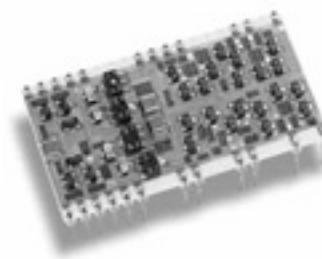
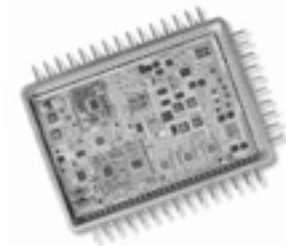
## Custom Hybrid Microcircuits

### Assemblies

Hybrid microcircuit assemblies are being used in an increasing number of applications. Our Military “chip & wire” hybrids accommodate a wide variety of analog and digital control circuits. Our Power Modules focus on applications requiring power and thermal management of large semiconductor components. Additionally in small to mid-size assemblies, our Commercial Hybrids offer price competitive solutions along with quality and design advantages.



Model	Military Hybrids	Commercial Hybrids	Power Modules
Typical Product Specifications	Integrated Thick Film Resistors Resistor Tolerance 1% Resistor Matching 0.5% ICs of all types (die form) SMD Capacitors & Inductors	Integrated Thick Film Resistors Resistor Tolerance 1% Resistor Matching 0.5% SMT ICs of all types SMD Capacitors & Inductors	Power Semiconductors in die form SMD Thermistors SMD Resistors SMD Capacitors
Average Complexity	50 Resistors 50 Capacitors 20 Active Components Power to 15 Watts Current to 5 Amps	50 Resistors 50 Capacitors 20 Active Components Power to 15 Watts Current to 5 Amps	5 to 20 Semiconductors Power to 5000 Watts Current to 30 Amps
Typical Circuit Applications	Analog, Digital, Mixed Signal Conditioning Motor Driver Active Filters Linear Amplifiers Sensor Circuits Voltage Regulators Data Converters DC/DC Converters	Analog, Digital, Mixed Signal Conditioning Motor Driver Active Filters Power Amplifiers Sensor Circuits DC/DC Converters Line Protection Fuel Cards	Power Factor Correction Power Amplification Bridge Rectifier Motor Drive H-Bridge
Typical Customer Applications	Avionics Power Supplies Satellite Inertial Control	Telecommunication Systems Power Supplies Industrial Control Systems Computer & Workstation Instrumentation Automotive	Power Supplies Industrial Control Avionics Audio Systems Welding Systems



Subassemblies

Model	Military Hybrid 165-X	Commercial Hybrid 143-X	Power Module 170-X
Microelectronics Specialists	<p>BI Technologies has extensive circuit knowledge and over 40 years of design experience with military grade hybrid products</p>	<p>For upgrading “Through-hole” circuit boards to surface mount technology or developing a new design, BI Technologies provides solutions.</p>	<p>BI Technologies has a dedicated production line supporting processes to optimize heat dissipation for our high power modules</p>
Features	<p>Multi-layer thick film on Alumina</p> <p>Integral Thick Film Resistors</p> <p>Custom Thin Film Subassemblies</p> <p>Chip &amp; Wire construction</p> <p>Metal and Ceramic Packages</p> <p>Surface mount or Plug-in packages</p> <p>MIL-STD-883 Screening</p> <p>Listed in QML-38534</p> <p>MIL-PRF-38534</p> <p>TS16949 Certified Facility</p> <p>Smallest Size</p> <p>Highest Reliability</p>	<p>Multi-layer construction</p> <p>Surface mount components on ceramic substrates</p> <p>Chip-on-Board capability</p> <p>Integral Thick Film Resistors</p> <p>Versatile lead configurations</p> <p>One and two sided designs</p> <p>Low cost assemblies</p> <p>US and Offshore assembly in TS16949 facility</p> <p>US design and management</p> <p>Reduced board size</p> <p>Superior Thermal Performance</p>	<p>Direct Bonded Copper on alumina substrate</p> <p>Large diameter aluminum wire bonding</p> <p>Versatile molded packaging</p> <p>Directly mountable to heat sink</p> <p>High voltage and high current designs</p> <p>Fully isolated heat sink</p> <p>Excellent thermal management</p> <p>Reduced stray inductance</p> <p>Standard Power Factor Correction modules to 5000 Watts</p>

**A Commitment To Microcircuits**

BI Technologies is the preferred choice for companies seeking custom, high-reliability hybrid microcircuits which meet exacting performance, cost and schedule requirements. With over 40 years of experience in thick film and thin film design and manufacturing, BI Technologies offers strength of experience, large company resources and small company flexibility. All factors combined give us the ability to rapidly respond to your needs.