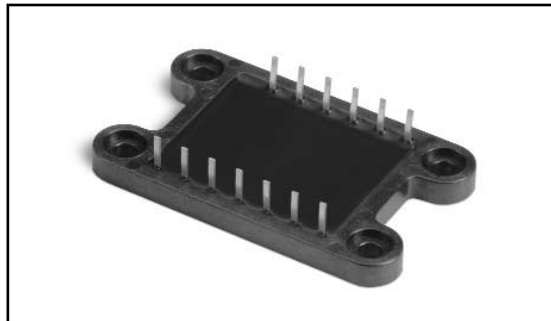


MODEL 7720 SERIES

Power Factor Correction Module



MODELS/RANGE

7720-1A	1,500 Watts / 3,000 Watts*
7720-2A	1,000 Watts / 2,250 Watts*
7720-3A	500 Watts / 1,500 Watts*

FEATURES AND BENEFITS

- Module contains all power components necessary to provide power factor correction in a switching power supply.
 - Rectifier bridge
 - Ultrafast platinum output diode
 - 500V .1 Ω Max. FET (7720-1A)
- Provides optimum use of available line current
- Allows power supply to meet harmonic requirement
- Module design reduces cost of heat sink
- Saves significant space and assembly time
- Low cost
- Internal temperature sensing
- Replaces up to 10 each TO-220 or TO-247 discrete power semiconductors
- Custom module versions available to meet specific requirements such as:
 - Motor drives
 - Power servo amplifiers
 - Solenoid drivers
 - Solid state relays
 - 3 phase rectifier bridges

APPLICATIONS

Designed to optimally facilitate a boost type power factor correction (PFC) system for designs with up to 20 A rms input current.

Standard applications include switching power supplies from 500 watts to 3,000 watts with line voltages up to 300 V rms.

* Based on minimum line voltage of 84 V rms / 168 V rms.
Specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

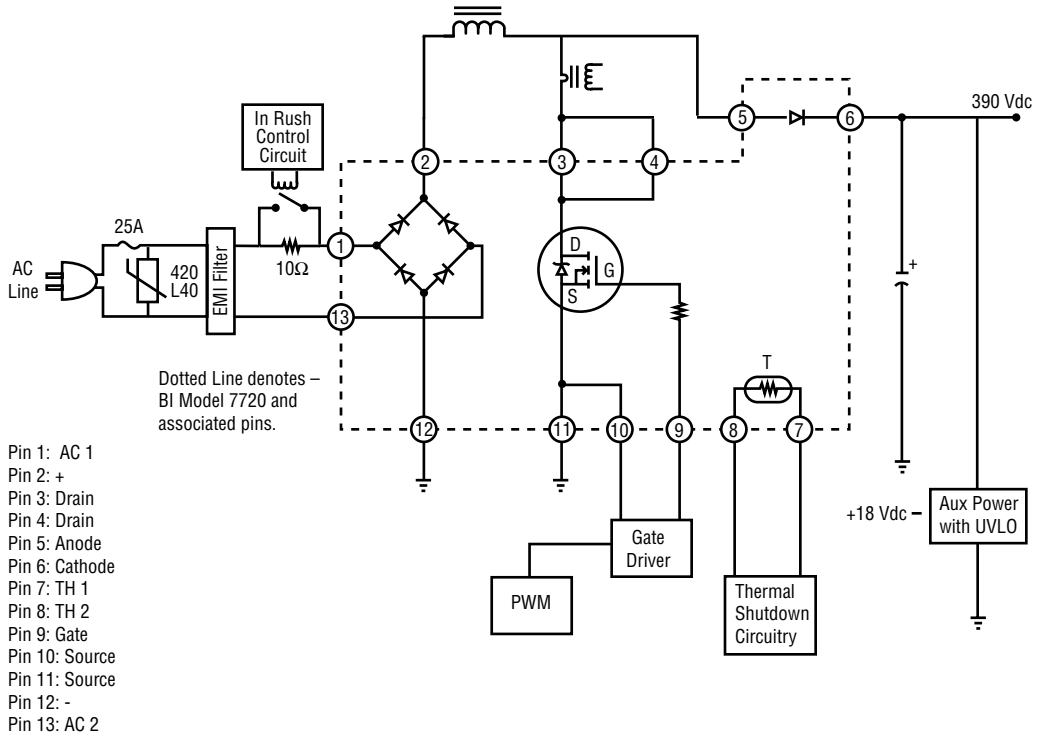
	Parameter	Symbol	Conditions ¹	7720-X	Min.	Typ.	Max.	Units		
FET	Drain Leakage Current	I_{DSS}	$V_{DS} = 500V, V_{GS} = 0V$	-1			1.0	mA		
				-2			750	μA		
				-3			500	μA		
	On-State Voltage	$V_{DS(on)}$	$I_{DS} = 28A, V_{GS} = 10V$	-1	2.2	2.9	V			
				-2	2.2	2.9	V			
				-3	2.2	2.9	V			
	Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 4V, I_{DS} = 1mA$	-1,-2,-3	2.0	3.0	4.0	V		
	Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 15V, V_{DS} = 0V$	-1			± 2	μA		
				-2			± 1.5	μA		
				-3			± 1	μA		
	Diode Forward Voltage	V_{SD}	$I_{SD} = 50A, V_{GS} = 0V$	-1	0.95	1.5	V			
				-2	0.95	1.5	V			
				-3	0.95	1.5	V			
	Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz$	-1	12		nF			
				-2	9		nF			
				-3	6		nF			
	Gate Resistor	R_G		-1	1.28		Ω			
				-2	1.70		Ω			
				-3	2.55		Ω			
	Junction Temperature	T_j		-1,-2,-3			150	$^{\circ}C$		
	Thermal Resistance	R_{thjc}		-1	0.19		$^{\circ}C/W$			
				-2	0.25		$^{\circ}C/W$			
				-3	0.38		$^{\circ}C/W$			
D1-D4	Reverse Leakage Current	I_R	$V_R = 600V$	-1,-2,-3	1	250	μA			
				Forward Voltage	V_F	$I_F = 25A$	-1,-2	1.0	1.2	V
							-3	1.0	1.2	V
	Junction Temperature	T_j		-1,-2,-3			150	$^{\circ}C$		
	Thermal Resistance	R_{thjc}		-1,-2	1.3		$^{\circ}C/W$			
				-3	1.4		$^{\circ}C/W$			
				Forward Voltage	V_F	$I_F = 25A$	-1,-2	1.5	2.8	V
-3	1.5	2.8	V							
	Forward Voltage	V_F	$I_F = 25A, t = 150^{\circ}C$	-1,-2	1.3	2.5	V			
				-3	1.3	2.5	V			
	Reverse Leakage Current	I_R	$V_R = 600V$	-1,-2,-3	1	500	μA			
				Reverse Leakage Current	I_R	$V_R = 600V, t = 150^{\circ}C$	-1,-2,-3	0.3	1.5	mA
Reverse Recovery Time	t_{rr}	$I_F = 1.0A, di/dt = 100A/\mu s$	-1,-2,-3				30	40	ns	
	Reverse Recovery Time	t_{rr}	$I_F = 25A, di/dt = 100A/\mu s$	-1,-2,-3	40	45	ns			
	Junction Temperature	T_j		-1,-2,-3			175	$^{\circ}C$		
	Thermal Resistance	R_{thjc}		-1,-2	1.3		$^{\circ}C/W$			
				-3	1.4		$^{\circ}C/W$			
TH1	Resistance	R_{25}	$I = 1mA$		22.5	25	27.5	K Ω		
				Resistance Ratio	R_T/R_{25}	$t = 80$		0.126		
$t = 90$	0.0916									
$t = 100$	0.0679									
$t = 110$	0.0511									
	Dissipation Constant	P_D			1.0		mW/ $^{\circ}C$			
	Thermal Time Constant	t				10	sec			

1 - $T_{Case} = 25^{\circ}C$ unless otherwise specified.

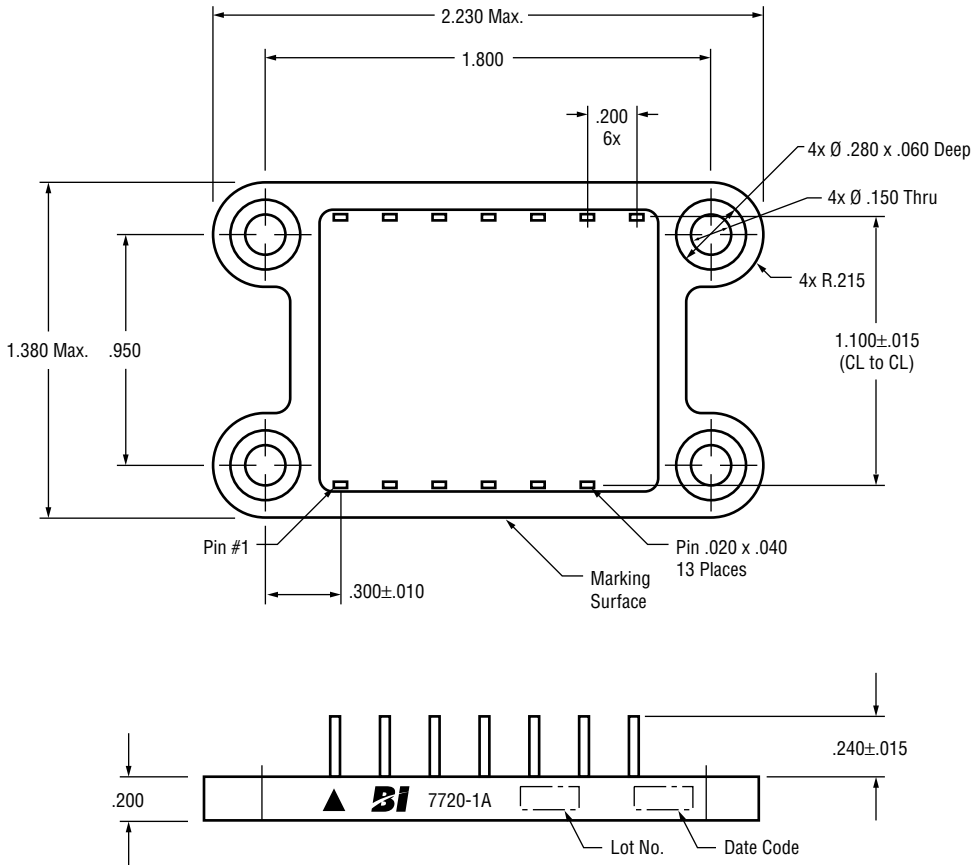
ENVIRONMENTAL

Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-40°C to +125°C
Recommended Operating Case Temperature, Max.	+100°C

SYSTEM DIAGRAM



OUTLINE DIMENSIONS (Inch)



ORDERING INFORMATION

