Preliminary Data Sheet

674H Power Module: 48 Vdc Input, 2 Vdc Output, 5 W

With isolated input/output the 674H Power Module allows versatile polarity configurations.

Benefits

- Compact package designed for mounting on circuit boards saves circuit board space.
- Output voltage stepping and input/output isolation provide design flexibility.
- Output current limiting helps to minimize the risk of damage to the load.

Features

- Input/output isolation
- Output current limiting
- Output voltage programming
- Remote shutdown
- Precision output regulation

Description

The 674H Power Module is a dc/dc converter that operates from a nominal 48 Vdc input and provides a single isolated 2 Vdc output. The unit has a maximum output power rating of 5 W and is designed for mounting on circuit boards. The 674H Power Module contains a precision reference, clock, pulse-width modulation (PWM) control circuit, and high-efficiency power train. A forward switching configuration generates a floating output from a floating input voltage. The 674H Power Module is housed in a 40-pin DIP that is 2.20 inches long, 1.60 inches wide, and 0.490 inch high.

Electrical Specifications

V_{IN} = 48 Vdc, T_A = 25°C; unless specified otherwise

Parameter	Symbol	Min	Typ	Max	Unit
Input Voltage	V_{IN}	40	48	60	Vdc
Input Current*	I_{IN}	—	—	0.25	A
Output Voltage Setpoint	V_{OUT}	1.98	2.00	2.02	Vdc
Output Current	I_{OUT}	0.2	—	2.5	A
Output Ripple & Spikes		—	—	10	mV rms
(20 MHz BW)		—	—	50	mV p-p
Line Regulation		—	—	0.2	%
Load Regulation		—	—	1.0	%
Dynamic Response**					
Output Deviation High		—	50	—	mV
Output Deviation Low		—	75	—	mV
Settling Time		—	300	—	μs
Input/Output Isolation					
Withstand Voltage		—	—	150	Vdc
Withstand Voltage (2 s surge)		—	—	300	V
Capacitance		—	1200	—	pF
Efficiency					
At 80% of Full Load	η	66	70	—	%
Short Circuit Current					
(V_{OUT} = 1 V)		—	—	4.5	A
Operating Ambient Temperature	T_A	−40	—	+70	°C

* Maximum value occurs when unit is operating at full load and input voltage drops until the unit can no longer regulate.

** I_{OUT} = 1.25 A, with load step = 0.75 A

Special Features

Remote Shutdown

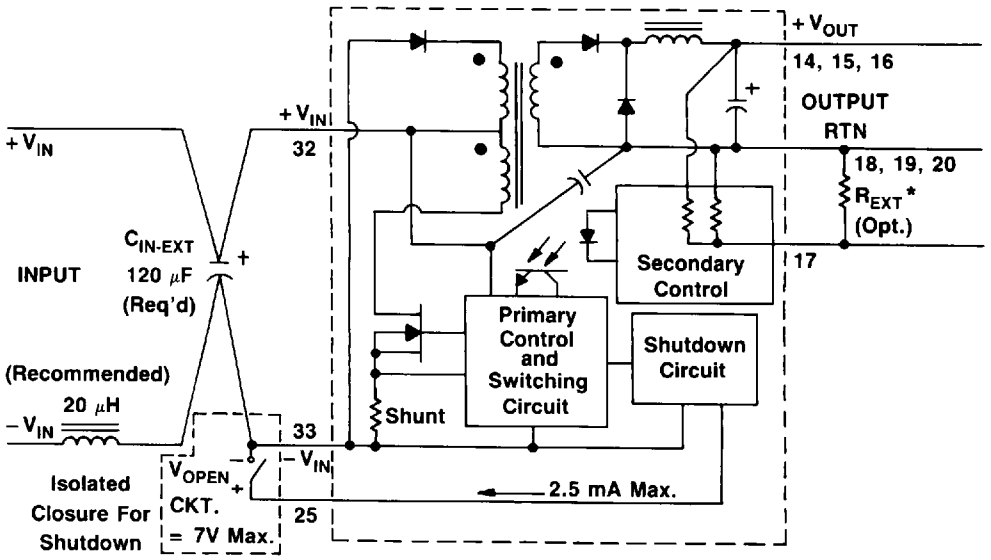
An isolated closure between pins 25 and 33 will shut down the module (see connection diagram). No connection to pin 25 is required if shutdown feature is not used.

Output Voltage Programming

By using an external resistor (R_{EXT}) connected between pins 17 and 18, 19, 20, the module output voltage may be stepped.

V_{OUT} (Vdc)	R_{EXT} (kΩ)
2.0	none
2.1	23.5
2.2	11.7

Connection Diagram



NOTES: All unused pins shall be soldered to the PWB with no electrical connections.

Maximum closed circuit voltage allowed between pins 25 and 33 to ensure shutdown = 1.2 V.

*See Special Features, Output Voltage Programming

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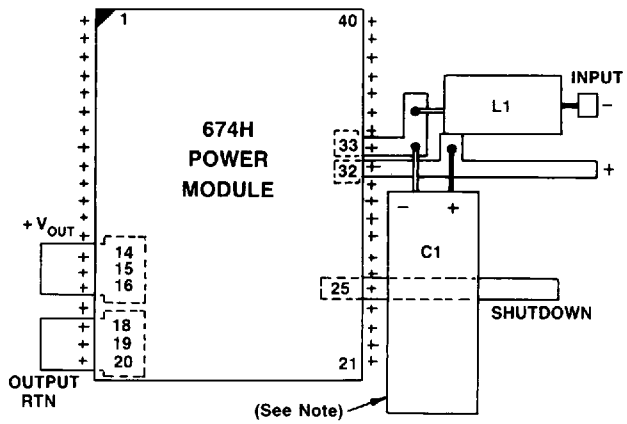
Recommended Printed Wiring Board Layout



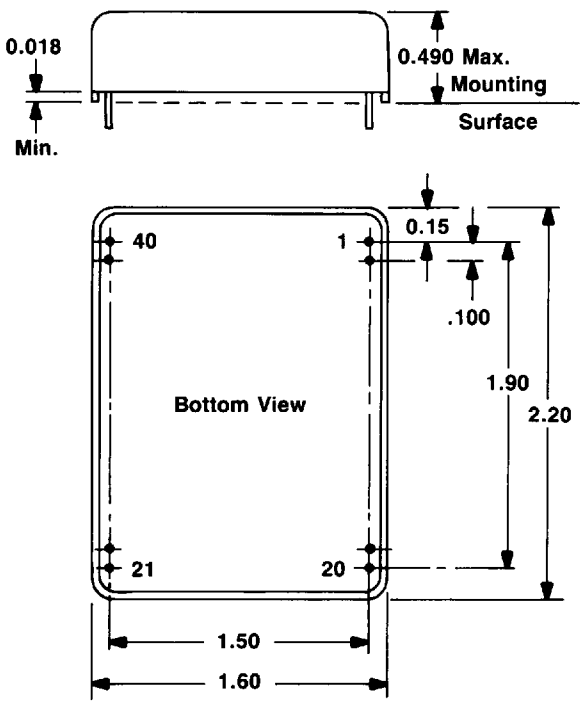
NOTE: It is recommended that input filter components C1 and L1 be located adjacent to pins 32 and 33 of power module to guarantee proper operation.

C1: approximately 120 μF, rated voltage ≥ 63 Vdc, I rms max > 450 mA, ESR at 100 kHz < 0.5 Ω.

L1: 20 μH at 0.5 A max.

Outline Diagram

(Dimensions in Inches)



(Recommended PWB plated hole size — 0.043" dia.)

For additional information, contact your AT&T Account Manager, or call:

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