



BD15021

Wide 3:1 Input Voltage Range
 15W DC/DC Converter
 15S12/48 with shielding connection to -Vin

Key Features

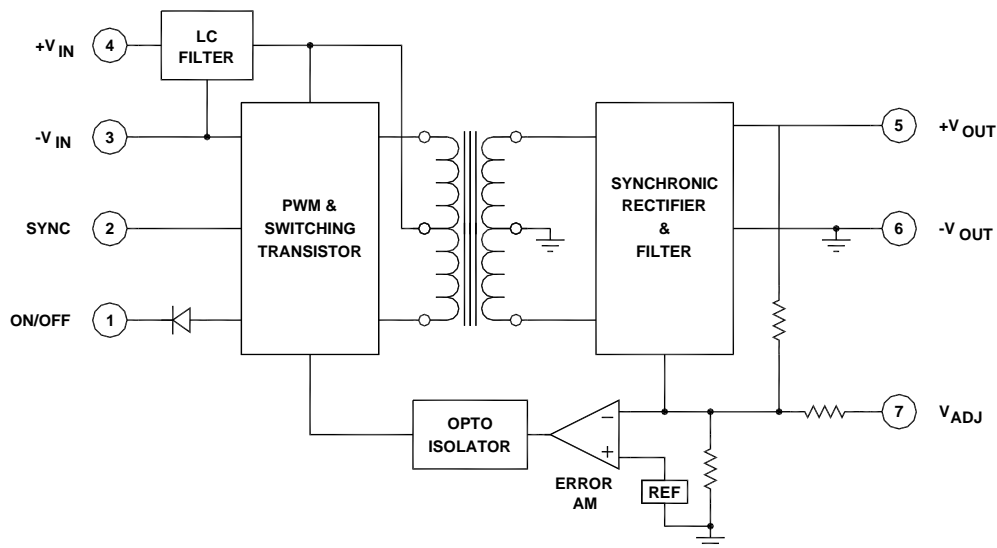
- Wide input voltage range (3:1)
- Input-to-output isolation
- Soft start
- Short circuit protection
- 150µA off state current
- Shielding Connection to -Vin (Input Ground Pin3)
- Output overvoltage protection (OVP)



Beta Dyne is protected under various patents, including but not limited to U.S. Patent numbers: 5,777,519; 6,188,276; 6,262,901; 6,452,818; 6,473,3171.

Functional Description

The BD15021 is a 15S12/48 single output DC/DC converter model that offers a 3:1 input voltage range, 400kHz switching frequency, forward topology and comes packaged in a 2x1x0.395-inch case with an industry standard pin out arrangement. The shielding connection of the BD15021 is to the -Vin (Input Ground Pin3). Six-sided shielding, SMD and improved thermal techniques guarantee reliability.



Typical Block Diagram (Single Output)

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Operating Temperature, Industrial (Ambient)	See Figure 1	-40		+71	°C
Operating Temperature, Extended		-55		+85	°C
Storage Temperature Range		-55		+125	°C
Thermal Resistance				7.4	°C/W _{DISS}
Maximum Operating Case Temperature				100	°C
Derating	See Figure 1				
Humidity	WJAc[ÁJíÁÁ} [}É& []á^}•i} *				
Cooling	Free-air convection				
EMI/RFI	Six-sided continuous shielded metal case				
MTBF]^!ÁTQŠÉPpÓSEGFÍØÁÇÖ! [~ }áhá^}i}* }ÉÁÉGí»ÖD		1.1×10 ⁶		hours

PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (LxWxH)	2.00x1.00x0.395 in. (50.80x25.40x10.03mm)				
Weight	1.06 oz. (30.3g)				
Case Material	Coated metal				
Shielding Connection	-Input Ground (Pin 3)				

EXTERNAL SYNCHRONIZATION

The converters can be synchronized to an external TTL or CMOS clock signal. Insert a 470pF to 1000pF ceramic capacitor between the driving clock signal and the SYNC pin (Pin 2) of the converter. The frequency of the signal must be between 390kHz

and 3Vdc minimum and 5Vdc typical. See Application Note DC-005: Synchronization.

EXTERNAL TRIMMING OF OUTPUT VOLTAGES (SINGLE)

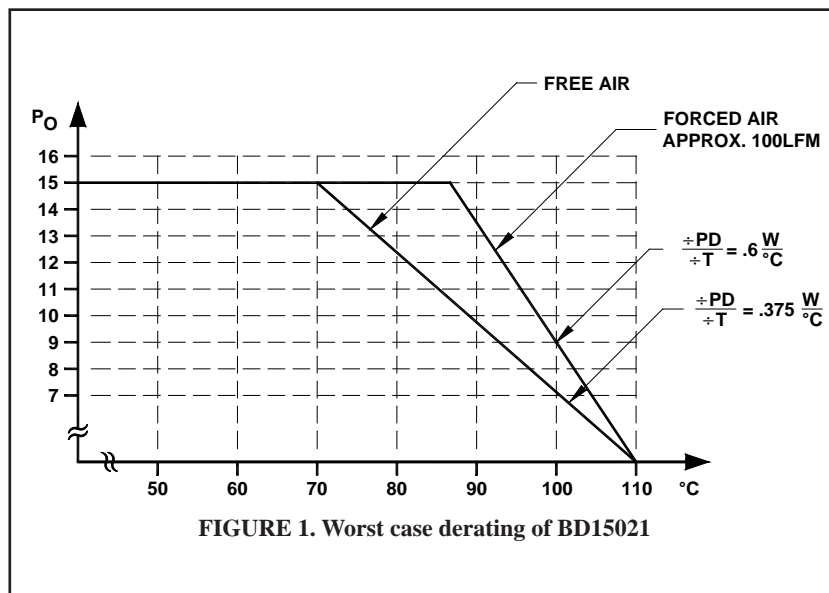
between the + (plus) output and trim pin of the converter. To trim the (+) output and trim pins of the converter. For UP/DOWN trimming capability, connect a 10kΩ trimmer potentiometer between the + (plus) output and trim pins of the converter. For UP/DOWN trimming capability, connect a 10kΩ trimmer potentiometer between the + (plus) output and trim pins of the converter. For UP/DOWN trimming capability, connect a 10kΩ trimmer potentiometer between the + (plus) output and trim pins of the converter.

The trim resistors/potentiometer can be connected at the converter output pins or the load. However, if connected at the load,

the resistance of the runs becomes part of the feedback network which improves load regulation. If the load is some distance from the converter, the use of #20 gauge wire is recommended to avoid excessive voltage drop due to the resistance of the circuit paths.

See our application notes:

- DC-001: Testing Transient Response in DC/DC Converters
- DC-004: Thermal Consideration for DC/DC Converters



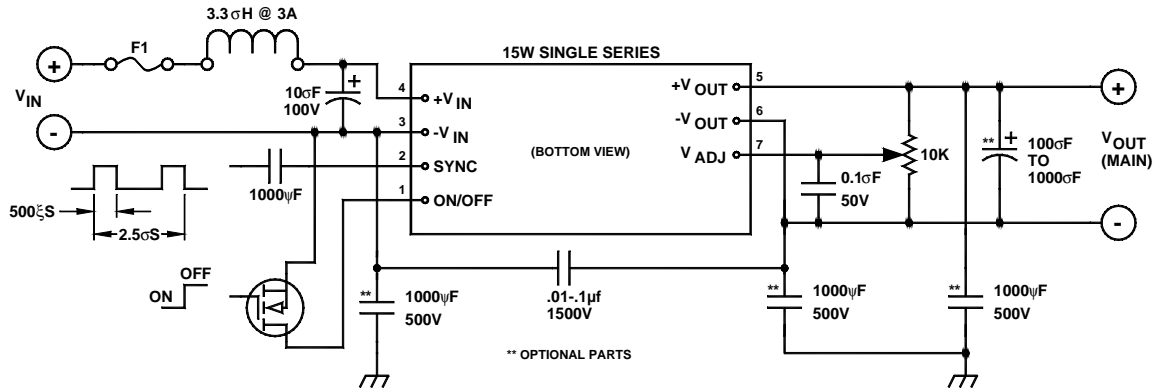
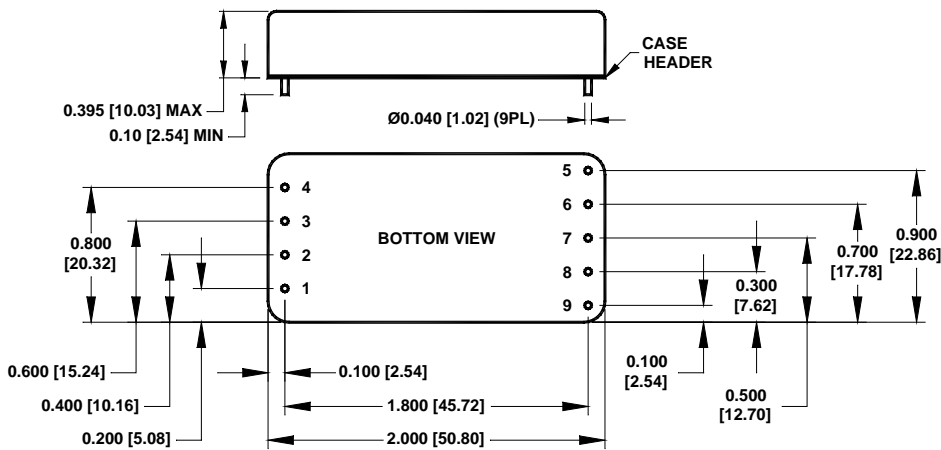


FIGURE 2. Typical connection diagram of BD15021

MECHANICAL SPECIFICATIONS
in inches [mm]



Pin	Function
	SINGLE
1	ON/OFF
2	SYNC
3	-V _{IN}
4	+V _{IN}
5	+OUTPUT
6	-OUTPUT
7	+V _{ADJ}
8	No Pin
9	No Pin