

Features

- Power from 10 to 60 W
- Output voltage from 3.3 to 12 V
- Hi-Pot up to 1500 VAC
- Surface mount
- RoHS compliant*

Applications

- High efficiency PoE interface and DC/DC controllers
- PoE PD controllers
- Synchronous flyback converters

PDC-FD Series – DC to DC Transformers

General Specifications

Operating Temperature..... -40 °C to +125 °C
 Storage Temperature..... -40 °C to 85 °C
 Moisture Sensitivity Level..... 1

Additional Information

Click these links for more information:



Electrical Specifications @ 25 °C

Bourns Part Number	Primary Inductance		Leakage Inductance		DC Resistance @ 0.3 V		Turns Ratio @ 100 kHz, 0.1 V _{rms} ¹		Hi-Pot	
PDC010-FD15A03S	(3-5) @ 100 kHz, 0.1 V _{rms}	166.5 μH ±10 %	(3-5) Other terminals shorted @ 250 kHz, 0.1 V _{rms}	2.5 μH max.	(1-2)	720 mΩ max.	(3-5:2-1)	2 ±2 %	(2,3-8,11,12) @ 2 mA, 1 sec.	1500 VAC ref.
			(7-8) Secondary terminals shorted @ 250 kHz, 0.1 V _{rms}	0.4 μH max.	(3-5)	765 mΩ max.	(3-5:8-7)	3.7 ±2 %		
					(7-8)	380 mΩ max.	(3-5:11-9)	6.5 ±2 %		
PDC015-FD15A05S	(1,2-3,4) @ 250 kHz, 0.1 V _{rms}	95 μH ±10 %	(1,2-3,4) Other terminals shorted @ 100 kHz, 0.1 V _{rms}	1.5 μH max.	(1,2-3,4)	230 mΩ max.	(1-3:2-4)	1.0 ±2 %	(1,2,5-10,11,12) @ 2 mA, 1 sec.	1500 VAC ref.
					(4-6)	375 mΩ max.	(1-3:5-6)	2.25 ±2 %		
					(7,8,9-10,11,12)	10 mΩ max.	(1-3:10-7,11-8,12-9)	5.4 ±2 %		
PDC020-FD15A12S	(3,4-5,6) @ 250 kHz, 0.1 V _{rms}	200 μH ±10 %	(3,4-5,6) w/ (9,10-11,12 shorted) @ 250 kHz, 0.1 V _{rms}	1.8 μH max.	(3,4-5,6)	200 mΩ max.	(3,4-5,6:2-1)	4.0 ±2 %	(2,3,4-8,11,12) @ 5 mA, 1 sec.	1500 VAC ref.
					(9,10-11,12)	35 mΩ max.	(3,4-5,6:7-8)	6.66 ±2 %		
					(3,4-5,6) w/ (7-8 shorted) @ 250 kHz, 0.1 V _{rms}	5.8 μH max.	(1-2)	250 mΩ max.		
PDC025-FD20A05S	1 - 3 (1,2 short 3,4 short) @ 250 kHz, 0.5 V _{rms}	70 μH ±10 %	(1-3) w/ (1,2 short 3,4 short 5,6 short 7,8, 9,10,11,12 short) @ 250 kHz, 0.5 V _{rms}	1.0 μH max.	(1-3) w/ (1,2 short 3,4 short)	70 mΩ max.	(1-3:5-6) w/ (1,2 short 3,4 short 7,8, 9 short 10,11,12 short)	2.444 ±5 %	(5-1) w/ (1,2 short 3,4 short 7,8, 9 short 10,11,12 short) @ 1mA, 2 sec.	1500 VAC ref.
					(12-7)	20 mΩ max.				
					(11-8)		310 mΩ max.			
					(10-9)			(1-3:10-7) w/ (1,2 short 3,4 short 7,8,9 short 10,11,12 short)		
					(5-6)					

¹ Turn ratio condition of PDC025-FD20A05S is 250 kHz, 0.5 V_{rms}, other part numbers are 100 kHz, 0.1 V_{rms}

(Continued)



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

PDC-FD Series – DC to DC Transformers

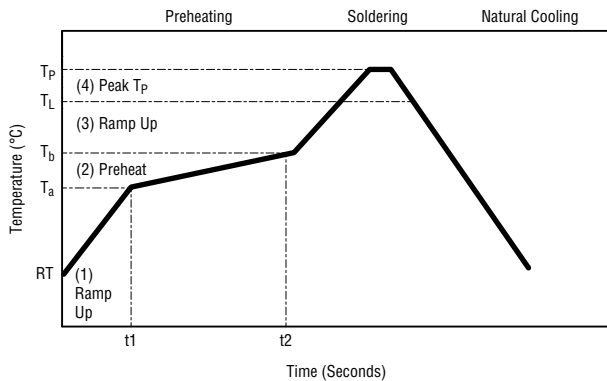


Electrical Specifications @ 25 °C (continued)

Bourns Part Number	Primary Inductance		Leakage Inductance		DC Resistance @ 0.3 V		Turns Ratio @ 100 kHz, 0.1 V _{rms} ¹		Hi-Pot	
PDC025-FD20A12S	(3,4-5,6) @ 250 kHz, 0.1 V _{rms}	75 μH ±10 %	(3,4-5,6) w/ (9,10,11,12 shorted) @ 250 kHz, 0.1 V _{rms}	0.76 μH max.	(3,4-5,6)	77 mΩ max.	(3,4-5,6:12,11-9,10)	4.0 ±2 %	(2,3,4-8,11,12) @ 5 mA, 2 sec.	1500 VAC ref.
					(9,10-11,12)	9.8 mΩ max.	(3,4-5,6:2-1)	4.0 ±2 %		
					(1-2)	96 mΩ max.	(3,4-5,6:8-7)	6.66 ±2 %		
					(8-7)	70 mΩ max.				
PDC060-FD20A12S	(1,2-3,4) @ 200 kHz, 1.0 V _{rms}	20.5 μH ±5 %	(1,2-3,4) w/ (5,6,7,8,9,10,11,12 shorted) @ 100 kHz, 1.0 V _{rms}	1.0 μH max.	(1,2-3,4)	45 mΩ max.	(1,2-3,4:10,11,12-7,8,9)	2.67 ±5 %	(1,2,5-10,11,12) @ 1 mA, 2 sec.	
					(10,11,12-7,8,9)	12 mΩ max.	(1,2-3,4:10,11,12-7,8,9)	2.28 ±5 %		
					(5-6)	250 mΩ max.				

¹ Turn ratio condition of PDC025-FD20A05S is 250 kHz, 0.5 V_{rms}, other part numbers are 100 kHz, 0.1 V_{rms}

Solder Profile



IR Reflow Profile		Pb-Free Assembly
Step #	Profile Feature	Condition / Duration
Step 1	Ramp Up Rate	3 °C / second max.
Step 2	Preheat 150 °C to 200 °C (T _a to T _b)	t1-t2: 60-120 seconds
Step 3	Ramp Up Rate (T _L to T _P)	3 °C / second max.
	Temperature Maintained Above 217 °C	60-150 seconds
Step 4	Peak Temperature (T _P)	260 +0/-5 °C
	Time Within 5 °C of Actual Peak Temperature	30 seconds max.
Ramp Down Rate (T _P to T _L)		6 °C/second max.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

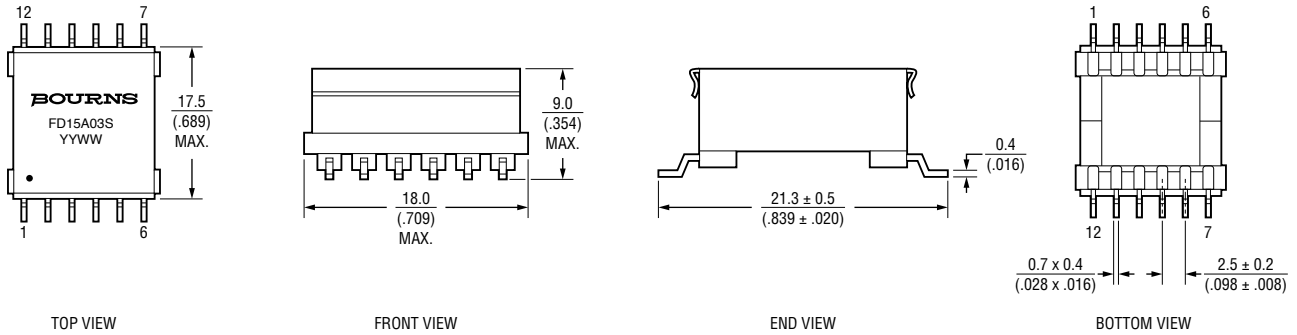
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

PDC-FD Series – DC to DC Transformers

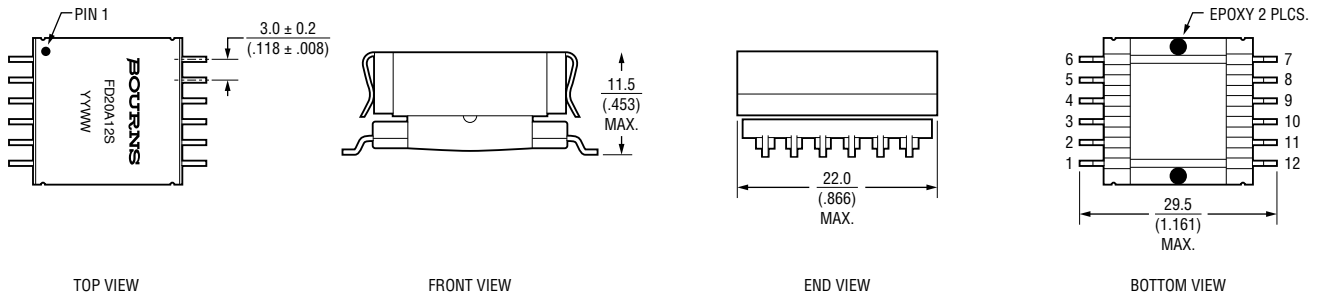


Product Dimensions

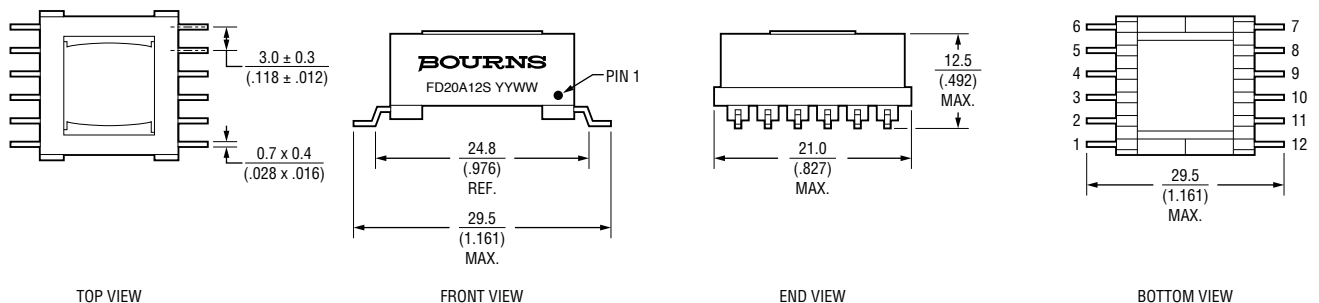
PDC010-FD15A03S, PDC015-FD15A05S, PDC020-FD15A12S



PDC025-FD20A05S, PDC025-FD20A12S



PDC060-FD20A12S



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

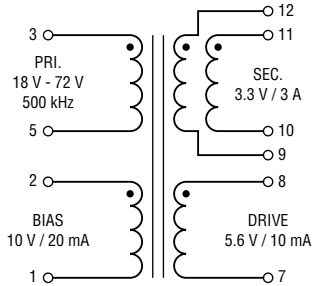
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

PDC-FD Series – DC to DC Transformers

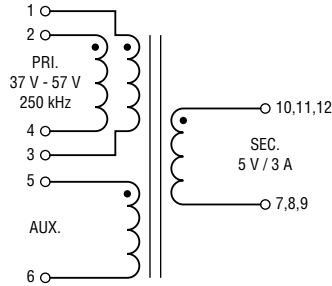
BOURNS®

Electrical Schematics

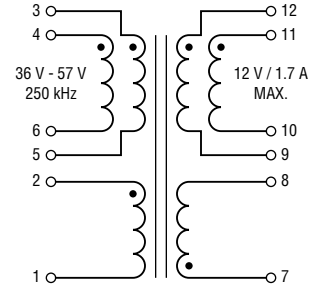
PDC010-FD15A03S



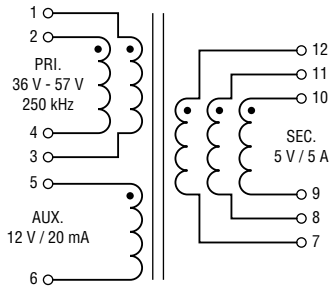
PDC015-FD15A05S



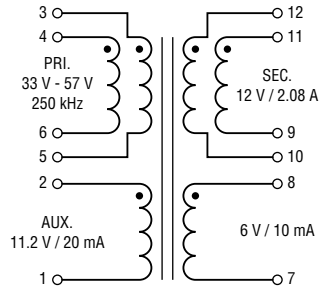
PDC020-FD15A12S



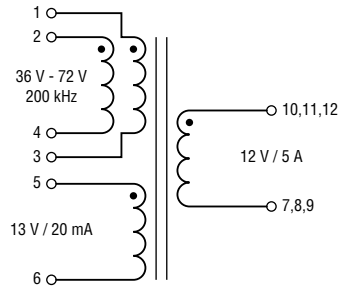
PDC025-FD20A05S



PDC025-FD20A12S

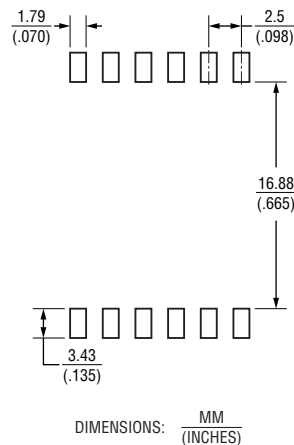


PDC060-FD20A12S

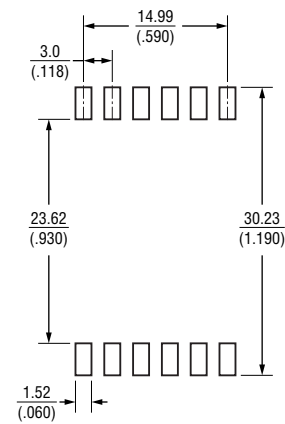


Recommended Layout

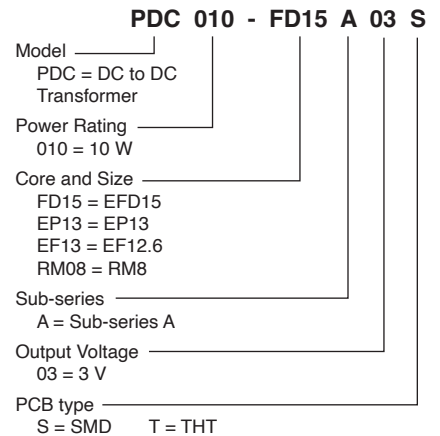
PDC010-FD15A03S, PDC015-FD15A05S, PDC020-FD15A12S



PDC025-FD20A05S, PDC025-FD20A12S, PDC060-FD20A12S



How To Order



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

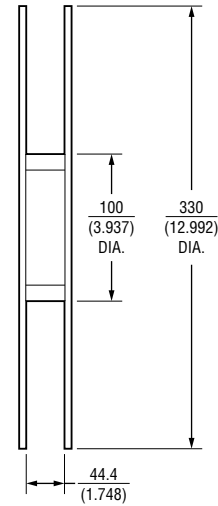
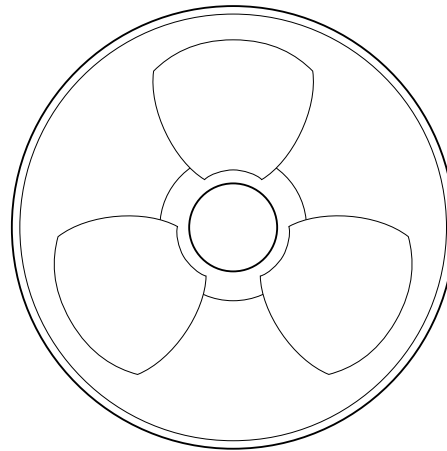
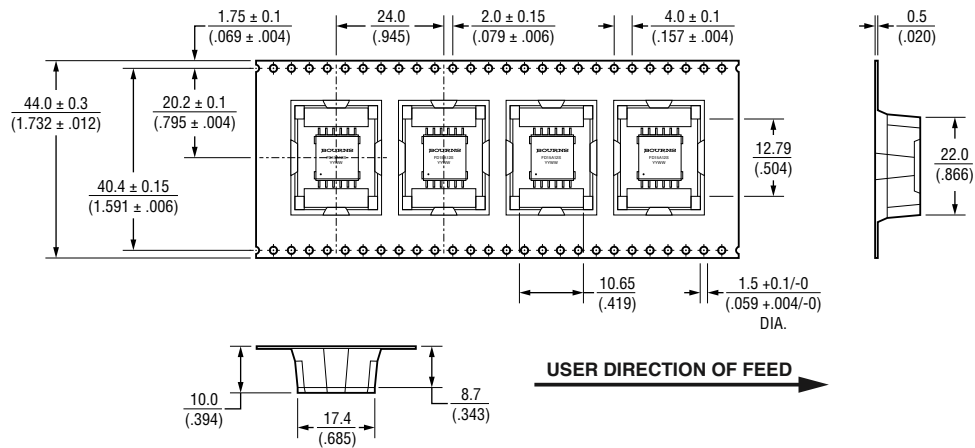
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

PDC-FD Series – DC to DC Transformers

BOURNS®

Packaging Specifications

PDC010-FD15A03S, PDC015-FD15A05S, PDC020-FD15A12S: 200 pcs./reel, 2 reels/carton, 400 pcs.



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

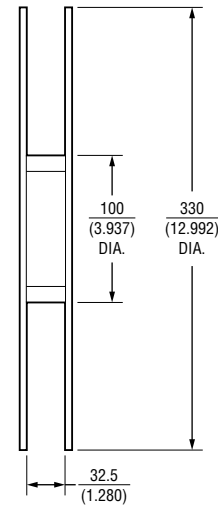
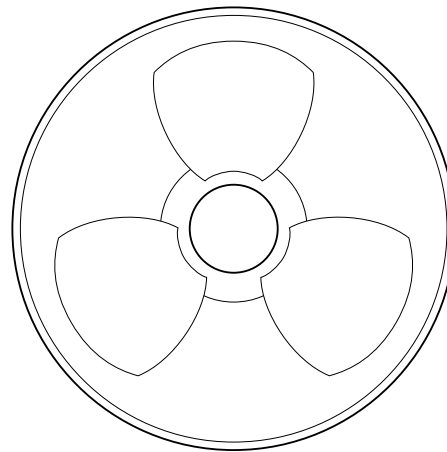
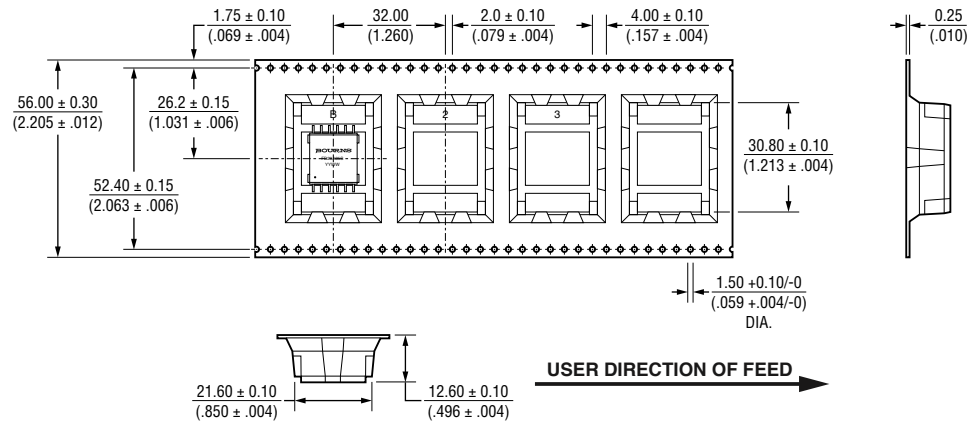
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

PDC-FD Series – DC to DC Transformers

BOURNS®

Packaging Specifications

PDC025-FD20A05S, PDC025-FD20A12S: 150 pcs./reel, 2 reels/carton, 300 pcs.



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

PDC060-FD20A12S: 40 pcs./tray, 4 trays/inner box, 6 inner boxes/carton, 960 pcs.

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com

REV. 10/23

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

