



Inductors

Flyback transformers, EFD series

Series/Type: **B82802A**

Date: 2009-08-14

Version: 1

Input voltage 36 V DC ... 60 V DC
Operating frequency 100 kHz

Applications

- Insulated converter for DC/DC applications (up to 55 W)
- Power over Ethernet (PoE/12 W and PoE+/30 W)
- Powered devices (PD) and power sourcing equipment (PSD)

Features

- Low profile SMT package with high through-out power capability
- Industry standard footprints
- Compliant with JEDEC J-STD 020
- MSL level 1
- RoHS-compatible
- Customer-specific variations available on request

Marking

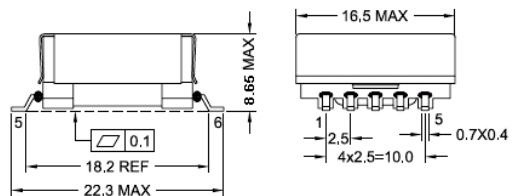
- Manufacturer's logo, ordering code, inductance, date of manufacture (coded)

Delivery mode and packing unit

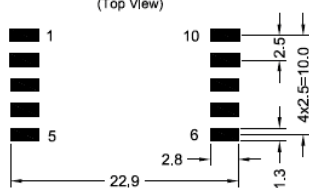
- Blister tape, 330-mm Ø reel
- Packing units:
 - Type EFD 15: 300 pcs./reel, 1200 pcs./carton
 - Type EFD 20: 160 pcs./reel, 640 pcs./carton
 - Type EFD 25: 80 pcs./reel, 320pcs./carton

Dimensional drawings

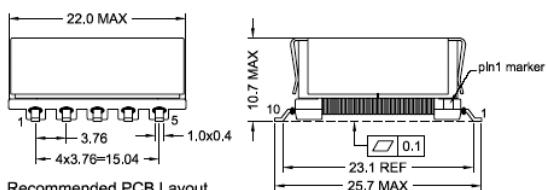
Type EFD 15



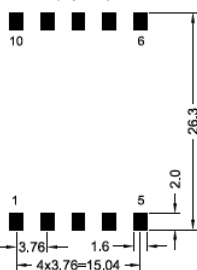
Recommended PCB Layout (Top View)



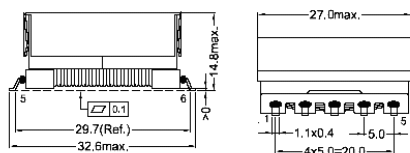
Type EFD 20



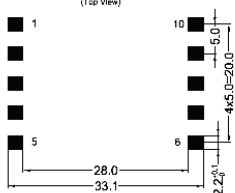
Recommended PCB Layout (Top View)



Type EFD 25



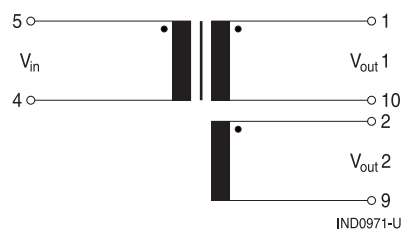
Recommended PCB layout (Top View)



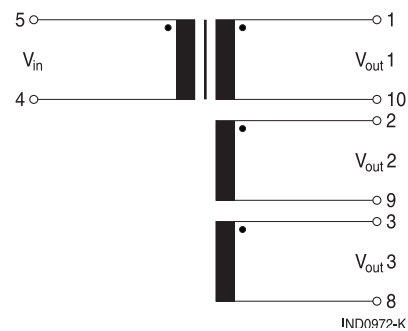
Pinning

EFD 15/EFD 20

A

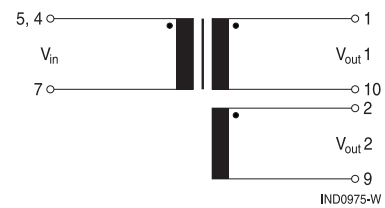


B

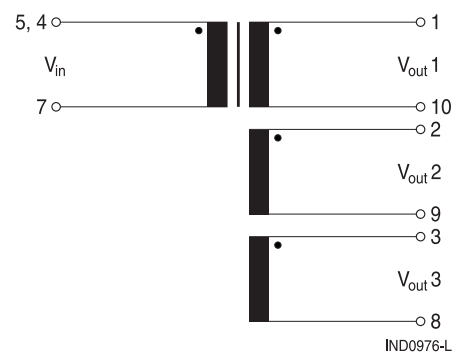


EFD 25

A



B



Technical data and measuring conditions

Input voltage V_{in}	36 V DC ... 60 V DC
Test voltage V_{test}	1500 V AC
Main inductance L	100 kHz, 100 mV, 25 °C
Inductance tolerance	±10% at 25 °C
DC current I_{DC}	With I_{DC} bias L_{drop} approx. 20%
Operating frequency f	100 kHz
DC resistance R_{max}	Measured at 25 °C, maximum values (specified per winding)
Solderability	≥99.9 Sn or Sn96.5Ag3.0Cu0.5: (245 ±5) °C, (3 ±0.3) s Wetting of soldering area: ≥95% (to IEC 60068-2-58)
Operating temperature range	-40°C ... +125°C

Characteristics

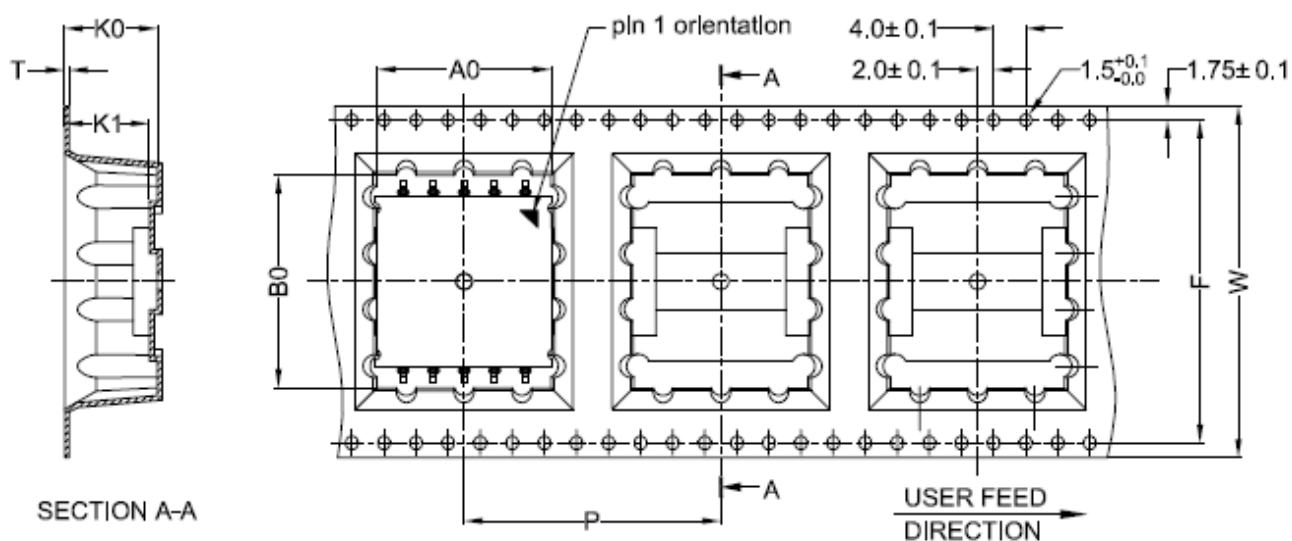
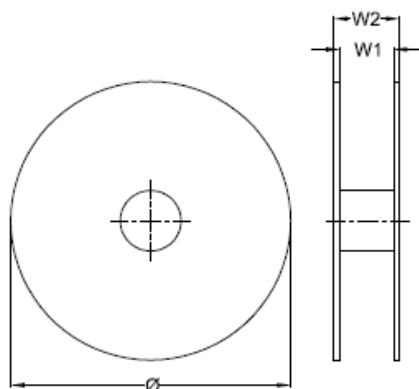
Core shape	Pin-ning	L	L_{stray}	V_{out1}	V_{out2}	V_{out3}	Power (set)	Turns ratio	DC resistance R_{max} (Ω)			
									primary	secondary		
EFD...		μH	μH	V/A	V/A	V/A	W		V_{out1}	V_{out2}	V_{out3}	
15	A	100	3.0	5/1.2	12/0.5	–	12	1 : 2.25 : 6.5	0.030	0.19	0.45	–
15	B	100	3.0	3.3/1.2	5/0.8	12/0.33	12	1 : 2.5 : 0.75 : 7.5	0.05	0.37	0.43	0.03
20	A	40	1.5	5/3	12/1.25	–	30	1 : 2.25 : 6.5	0.015	0.04	0.10	–
20	B	40	1.8	3.3/3	5/2	12/0.83	30	1 : 2.25 : 0.75 : 6.5	0.018	0.04	0.096	0.010
25	A	22	1.5	5/5.5	12/2.3	–	55	1 : 2.5 : 7.5	0.0032	0.04	0.034	–
25	B	22	1.2	3.3/5.5	5/3.7	12/1.5	55	1 : 2.33 : 0.66 : 6.67	0.015	0.04	0.05	0.0033

Ordering codes

Core shape	Pinning	Ordering code
15	A	B82802A0012A215
15	B	B82802A0012A315
20	A	B82802A0030A220
20	B	B82802A0030A320
25	A	B82802A0055A225
25	B	B82802A0055A325

Taping and packing

Item	Core	Blister tape								Reel		
		W	T	A0	B0	P	K0	K1	F	Ø	W1	W2
Dim. (mm)	EFD 15	44.0	0.5	16.6	22.3	24.0	8.6	8.1	40.4	330.0	44.0	48.0
	EFD 20	44.0	0.6	21.7	26.6	32.0	11.6	10.6	40.4	330.0	44.0	48.0
	EFD 25	56.0	0.6	26.2	33.0	44.0	14.6	13.8	52.4	330.0	56.0	60.0
Tolerance		±0.3	±0.05	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.5	±2.0	±0.15

Blister tape

Reel


Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition or in the Internet) and in the data sheets.
 - Particular attention should be paid to the derating curves given there.
 - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.
- If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.
- The following points must be observed if the components are potted in customer applications:
 - Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
 - It is necessary to check whether the potting material used attacks or destroys the wire insulation, plastics or glue.
 - The effect of the potting material can change the high-frequency behaviour of the components.
- Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

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The following applies to all products named in this publication:

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