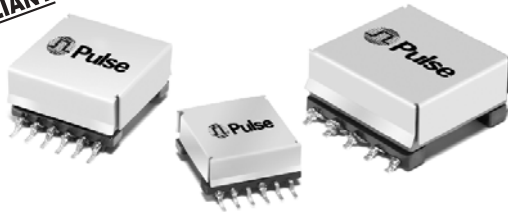


HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

EFD Platforms - EFD15, EFD20 and EFD25



Pulse®
A TECHNITROL COMPANY



- 🔌 Transformers and Inductors
- 🔌 Power: 30W to 180W
- 🔌 Three Different Platforms: THT and SMT
- 🔌 Low Profile Platforms: 8.4mm to 13.5mm
- 🔌 Custom designs available

Electrical Specifications @ 25°C — Operating Temperature -40°C to 125°C

TRANSFORMERS											
Part ^{6,7} Number	Application ²	Turns Ratio			Primary Secondary Isolation	Primary Inductance (μH MIN)	Leakage Inductance (μH MAX)	DCR (mΩ MAX)			
		Pri.	Sec.	Pri. Aux.				Pri.	Pri. Aux.	Sec. A	Sec. B
EFD 15 PLATFORMS - UP TO 30W											
EFD 15 - 10 PIN SMT - (21.6MM x 16.3MM x 8.4MM)											
PB2187	15W Flyback Transformer Vin=36-75v, Freq.=225kHz Vout=12v/1.7A, 15v/20mA	24	12	16	650Vdc Operational	38 @ 2.2A	0.6	190	410	50	N/A
EFD 15 - 12 PIN SMT - (22.2MM x 17.2MM x 8.4MM)											
PA0476	15W Flyback Transformer Vin=18-72v, Freq.=500kHz Vout=5v/3A, 10v/20mA	16	3	7	500Vrms Operational	35.5	0.15	23.5	87	8	N/A
PA0691	15W Flyback Transformer Vin=30-57v, Freq.=100kHz Vout=3.3v/3A, 5.6v/10mA10v/20mA	52	8 & 14	26	500Vdc Operational	146 @ 1.2A	2.4	600	2000	20 (3.3v)	720 (5.6v)
PA1039	15W Flyback Transformer Vin=29-59v, Freq.=100kHz Vout=5v/2A, 7.5v/10mA10v/20mA	50	10 & 15	22	500Vdc Operational	137.5 @ 1.2A	2.0	500	1300	25	760
PA1067	20W Forward Transformer Vin=34-75v, Freq.=555kHz Vout=3.3v/6A, 12v/25mA	12	3	10 & 12 (reset)	500Vrms	79	1	70	70 & 70 (reset)	6	N/A
EFD 20 PLATFORMS - UP TO 80W											
EFD 20 - 8 PIN THT - (21.0MM x 21.0MM x 13.0MM)											
PA1040	80W Forward Transformer Vin=30-57v, Freq.=250kHz Vout=12v/5A, -12v/1.6A, 12v/0.1A	14	7 & 7	7	1500Vdc Operational	154	2	45	80	15	24
EFD 20 - 10 PIN SMT - (26.2MM x 21.8MM x 10.4MM)											
PB2003	30W Flyback Transformer Vin=36-72v, Freq.=300kHz Vout=5v/6A, 15v/0.1A	16	2	7	1500Vrms Operational	29.2 @ 3.0A	1.7	75	75	4.5	N/A
EFD 20 - 12 PIN SMT - (29.2MM x 21.8MM x 11.4MM)											
PA0273	50W Forward Transformer Vin=36-72v, Freq.=250kHz Vout=12v/4.5A, 12v/0.1A	16	10	10	1500Vrms Basic	230	0.35	65	225	27	N/A
PA0751	13W Flyback Transformer Vin=25-75v, Freq.=250kHz Vout=3.3v/4.5A, 15v/100A	26	6	18	700Vdc Operational	99	2	85	300	12	N/A
PA0769	100W Forward Transformer Vin=36-75v, Freq.=250kHz Vout=±12v/2.1A, 5v/9A	15	7 & 7 & 3	5	1500Vdc Operational	74	1.5	50	110	35 & 35 (±12v)	3.8 (5v)
PA1066	45W Forward Transformer Vin=30-75v, Freq.=550kHz Vout=±5v/4.5A, 12v/20mA	11	4 & 4	9 & 11 (reset)	500Vrms	93	1	35	100	15 & 15	N/A
PB2041	48W Forward Transformer Vin=36-75v, Freq.=230kHz Vout=12v/3A, -12v/1A	10 + 10	12 & 12	N/A	1500Vrms Basic	324	1	82	N/A	30.8 (+12v)	86.4 (-12v Sec)
PB2089	33W Forward Transformer Vin=36-72v, Freq.=250kHz Vout=3.3v/10A, 2.2v/0.05A	13	3 & 2	N/A	1500Vrms Basic	141	1	31	923	5.5 (3.3v Sec)	112 (2.2v Sec)
PB2134	12W Flyback Transformer Vin=36-57v, Freq.=200kHz Vout=3.3v/3.5A, 12v/0.1A	32	4	15	1800Vdc Operational	195 @ 1.0A	5	200	215	12	N/A
PB2157	13W Forward Transformer Vin=31-57v, Freq.=200kHz Vout=3.3v/3.5A, 12v/0.1A	17 + 17	4	6	1500Vdc Operational	243	2	280	150	4.5	N/A

(Transformers continued on next page)

HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

EFD Platforms - EFD15, EFD20 and EFD25



Electrical Specifications @ 25°C — Operating Temperature -40°C to 125°C

TRANSFORMERS (continued)

Part Number	Application ²	Turns Ratio			Primary Secondary Isolation	Primary Inductance (μH MIN)	Leakage Inductance (μH MAX)	DCR (mΩ MAX)			
		Pri.	Sec.	Pri. Aux.				Pri.	Pri. Aux.	Sec. A	Sec. B
EFD 25 PLATFORMS - UP TO 180W											
EFD 25 - 10 PIN THT - (26.4MM x 26.1MM x 14.0MM)											
PA0397	100W Forward Transformer Vin=36-75v, Freq.=250kHz Vout=3.3v/30A, 12v/0.1A	9	2	8	1500Vdc Basic	113	0.64	21	570	3.3	N/A
EFD 25 - 10 PIN SMT - (32.0MM x 26.2MM x 13.5MM)											
PA0302	165 F-Bridge Transformer Vin=21-56v, Freq.=230kHz Vout=15v/11A	1	1	1	500Vrms Operational	24	0.1	8	130	8	8
EFD 25 - 12 PIN SMT - (32.0MM x 26.2MM x 13.7MM)											
PA0700	72W Forward Transformer Vin=12v, Freq.=250kHz Vout=48v/1.5A	3	22	N/A	2250Vrms Operational	21.4	0.5	4	N/A	95	N/A

INDUCTORS

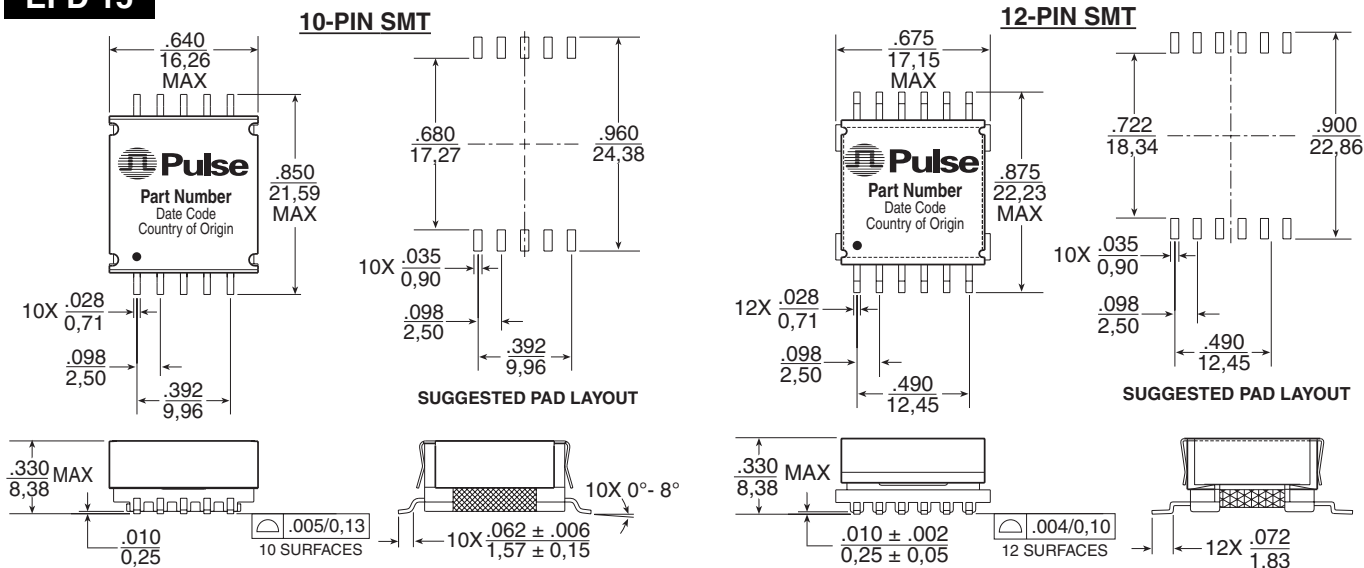
Part ^{6,7} Number	Application ²	Induct. @ Irated (µH MIN)	Irated (Adc)	Turns Ratio	DCR (mΩ MAX)			Induct. 0 Adc ³ (µH ±7%)	Saturation Current ⁴ @25°	Heating Current ⁵ (A)	±12v Winding to Aux. Isolation
					Winding 1	Winding 2	Winding 3				
EFD 20 PLATFORMS											
EFD 20 - 12 PIN SMT - (29.2MM x 21.8MM x 11.4MM)											
PB2042	Output Inductor for PB2041 Transformer	13	4	3:3:4 (+12v:-12v:Aux)	29.2 (+12v)	87.6 (+12v)	253 (15v Aux.)	14.4	5	4	1500 Vrms Basic

Notes:

- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- The above transformers and inductors have been tested and approved by Pulse's power IC partners and are sited in the appropriate datasheet or evaluation board documentation at these companies. To determine which IC and IC partners are matched with the above Pulse part numbers please consult the IC Cross Reference on the Pulse website.
- The rated current as listed is either 85% of the saturation current or the heating current whichever is lower.
- The saturation current is the current which causes the inductance to drop by 20% at 25°C. This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
- The heating current is the dc current which causes the temperature of the part to increase by approximately 40°C.
- Add 'T' suffix to the part number for Tape & Reel version (ie: PB2041T).
- RoHS compliant parts are being introduced. Please contact Pulse for RoHS compliant part availability. If available, order part by adding the suffix "NL" to the part number (i.e. PB2041 becomes PB2041NL and PB2041T becomes PB2041NLT).

Mechanicals

EFD 15



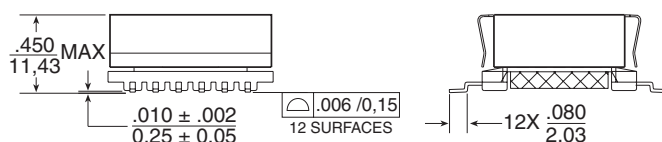
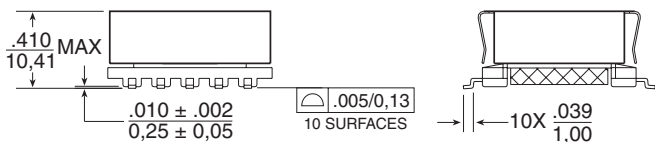
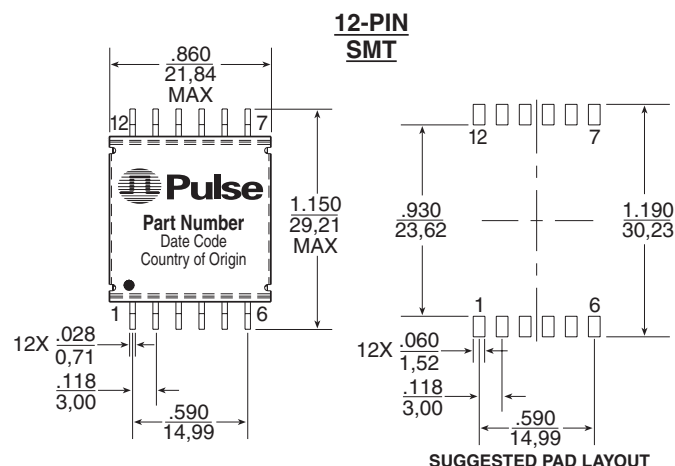
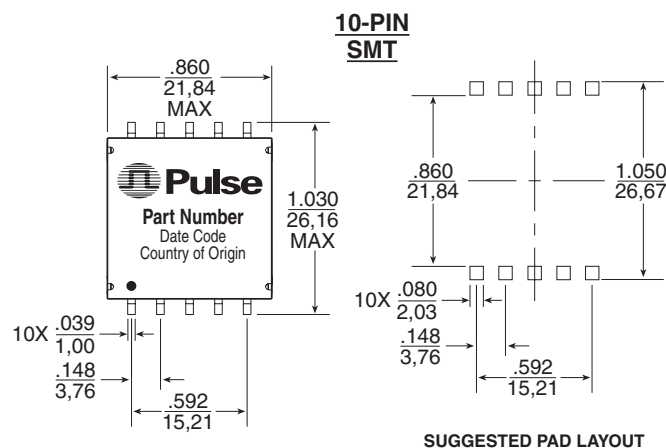
HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

EFD Platforms - EFD15, EFD20 and EFD25

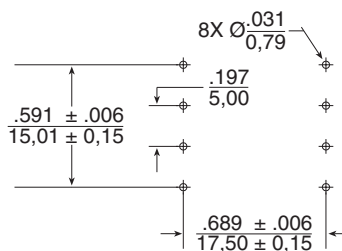
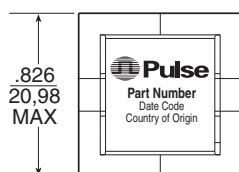
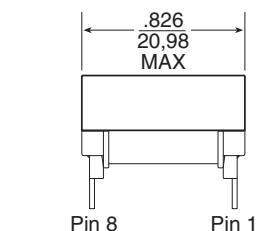


Mechanicals

EFD 20



8-PIN THT



SUGGESTED PAD LAYOUT

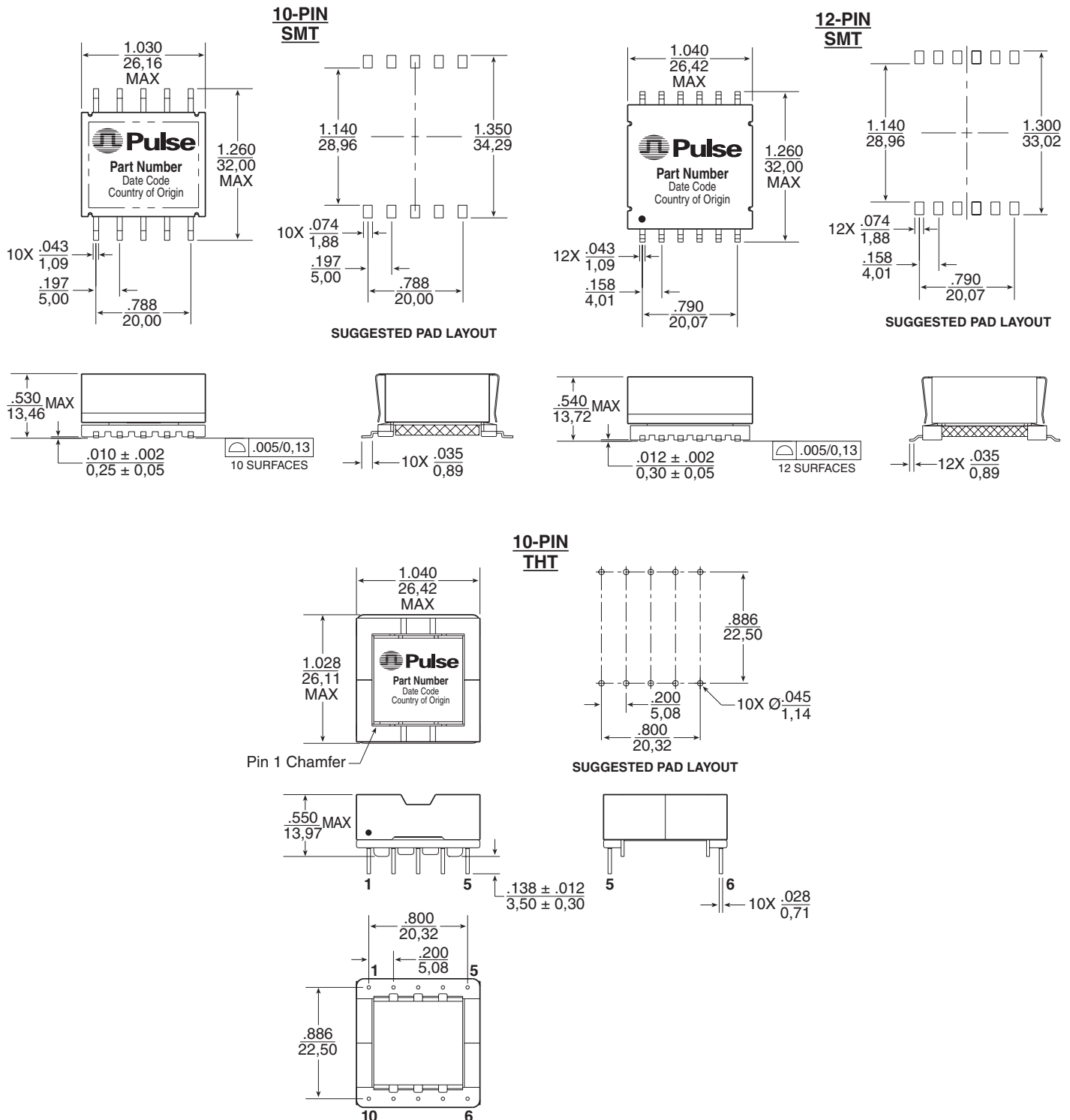
HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

EFD Platforms - EFD15, EFD20 and EFD25



Mechanicals

EFD 25



HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

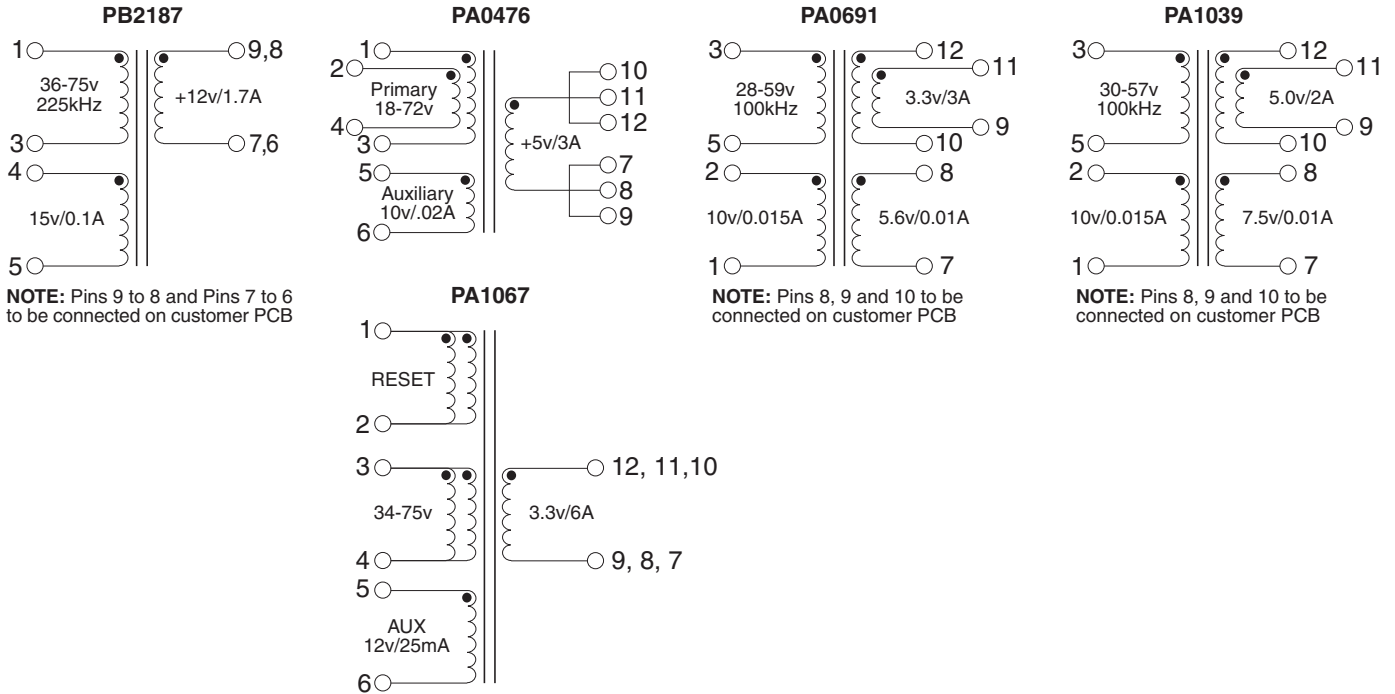
EFD Platforms - EFD15, EFD20 and EFD25



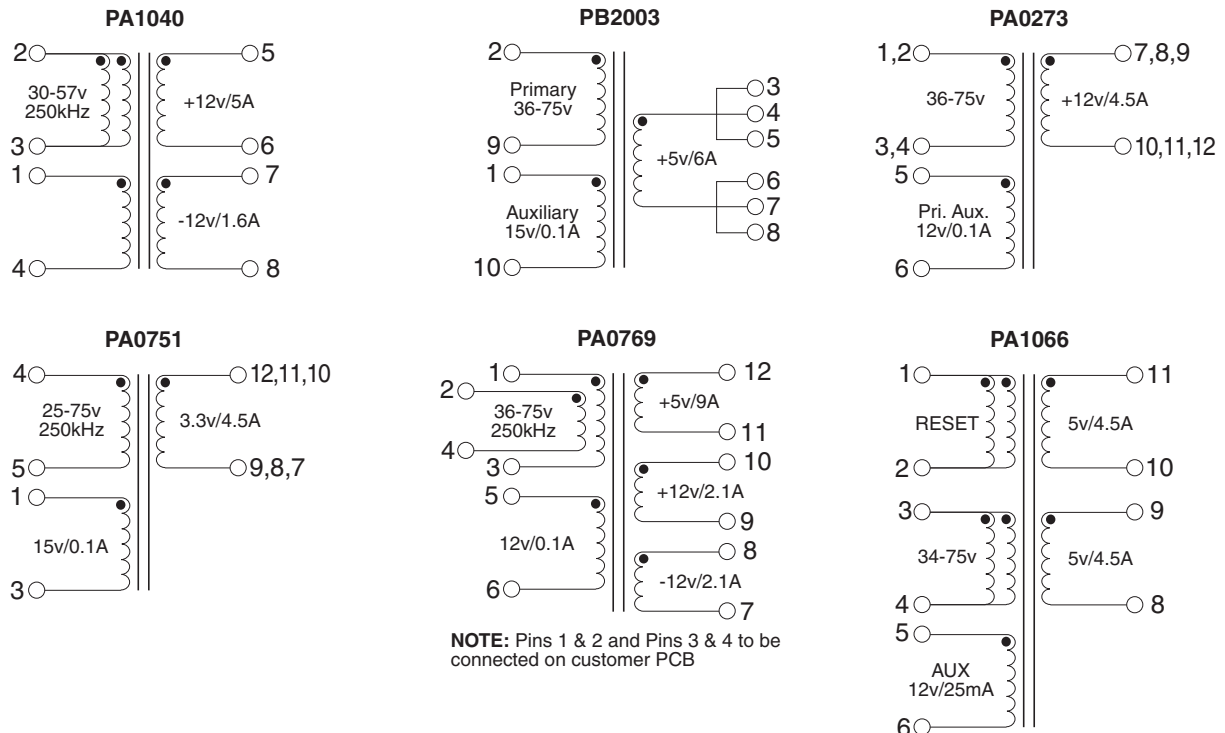
Pulse[®]
A TECHNITROL COMPANY

Schematics

EFD 15



EFD 20



(EFD 20 Schematics continued on next page)

HIGH FREQUENCY CONVENTIONAL WOUND MAGNETICS

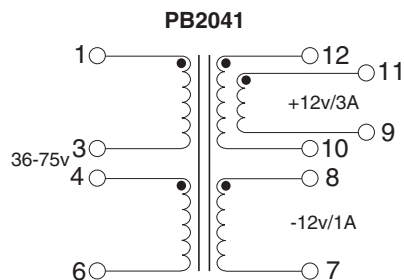
EFD Platforms - EFD15, EFD20 and EFD25



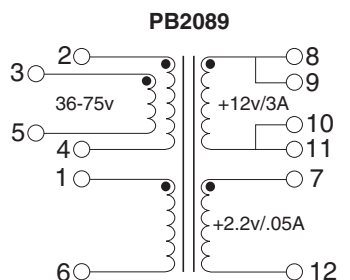
Pulse®
A TECHNITROL COMPANY

Schematics

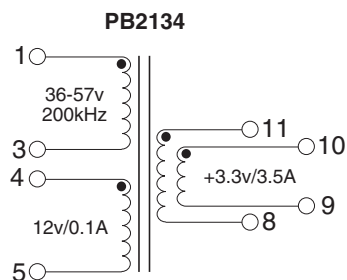
EFD 20 (continued)



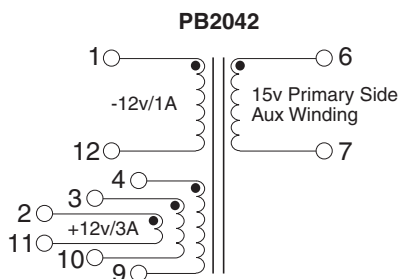
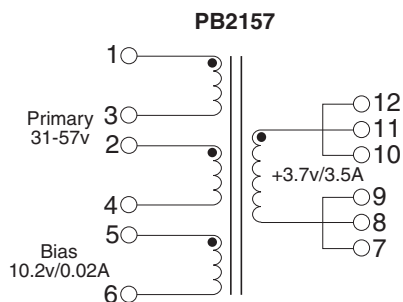
NOTE: Pins 12 & 11, Pins 9 & 10, and Pins 3 & 4 to be connected on customer PCB



NOTE: Pins 2 & 3 and Pins 4 & 5 to be connected on customer PCB

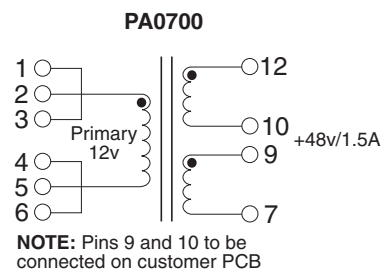
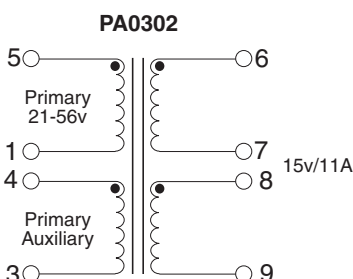
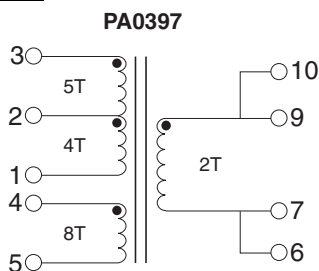


NOTE: Pins 10 & 11, Pins 8 & 9 to be connected on customer PCB



NOTE: Pins 2, 3 & 4 and Pins 9, 10 & 11 to be connected on customer PCB

EFD 25



NOTE: Pins 9 and 10 to be connected on customer PCB

For More Information:

Pulse Worldwide Headquarters

12220 World Trade Drive
San Diego, CA 92128
U.S.A.
www.pulseeng.com
TEL: 858 674 8100
FAX: 858 674 8262

Pulse Northern Europe

3 Huxley Road
Surrey Research Park
Guildford, Surrey GU2 5RE
United Kingdom
TEL: 44 1483 401700
FAX: 44 1483 401701

Pulse Southern Europe

Zone Industrielle
F-39270
Orgelet
France
TEL: 33 3 84 35 04 04
FAX: 33 3 84 25 46 41

Pulse China Headquarters

No. 1
Industrial District
Changan, Dongguan
China
TEL: 86 769 85538070
FAX: 86 769 85538870

Pulse North China

Room 1503
XinYin Building
No. 888 YiShan Road
Shanghai 200233
China
TEL: 86 21 54643211/2
FAX: 86 21 54643210

Pulse South Asia

150 Kampong Ampat
#07-01/02
KA Centre
Singapore 368324
TEL: 65 6287 8998
FAX: 65 6280 0080

Pulse North Asia

No. 26
Kao Ching Road
Yang Mei Chen
Taoyuan Hsien
Taiwan, R. O. C.
TEL: 886 3 4641811
FAX: 886 3 4641911

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners.

© Copyright, 2006. Pulse Engineering, Inc. All rights reserved.

www.pulseeng.com