

Indicated Parts are UL1950 & CSA-950 Recognized under UL File# E162344

- * Designed for Use with Power Integrations IC's.
- * Designed to Meet UL 1950/IEC950 Safety Standards.

- * Design Engineering Support Available.
- * Multiple Configurations.

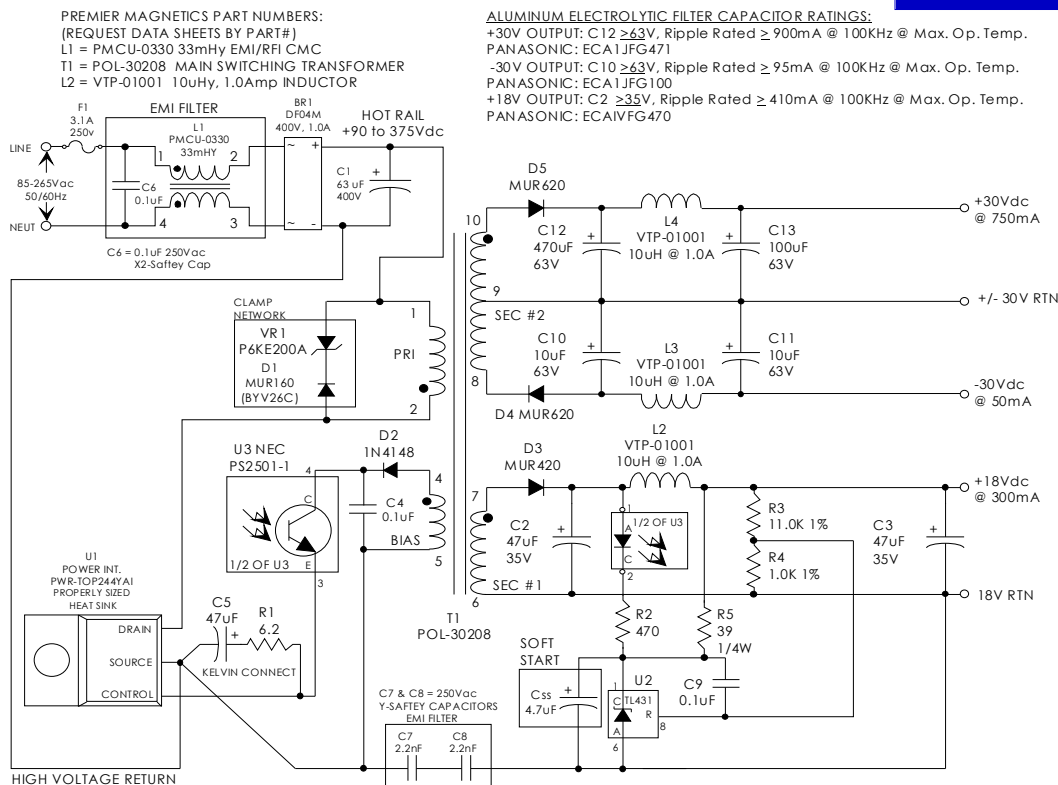
GENERAL APPLICATION INFORMATION

Premier Magnetics' Off-Line Switch Mode Transformers have been designed for use with Power Integrations, Inc. TOPXXX series of off-line PWM switching regulators in the Flyback Buck-Boost circuit configuration. This conversion topology can provide isolated multiple outputs with efficiencies up to 90%. Premier's Switching Transformers have been optimized to provide maximum power throughput.

The TOPXXX series from Power Integrations, Inc. are self contained upto 132KHz controlled PWM switching regulators. This series contains all necessary functions for an off-line switched mode control DC power source. These switching regulators provide a very simple solution to off-line designs. The inductors and transformer used with the PWR-TOPXXX are critical to the performance of the circuit. They define the overall efficiency, output power and overall physical size.

Below is a universal input high precision 15V @ 2 Amps (30 watt) application circuit utilizing Power Integrations PWR-TOP226 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. The soft start capacitor C_{ss} is optional depending on the specific application. Simpler topology is possible depending on the line/load regulation required.

SCHEMATIC



OFF-LINE SWITCH MODE TRANSFORMERS

GENERAL ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO +70°C

Units are Designed for a Universal AC Input of 85 to 265Vac, 47/440 Hz, Unless Otherwise Designated.

- 1 = Unit Designed for Voltage Doubler Input -or- PFC Corrected Front End.
- 2 = Unit Designed for AC Input of 85 to 135Vac, 47/440Hz.
- 3 = Minimum Parts Count Design (lowest cost). Designed for Relatively Constant Load Power.
Applications Where Load Regulation of 5.0 % & Line Regulation of 3.0 % is Acceptable.
- 4 = Faraday Shield Between Primary + Bias & Secondaries. Connected to Bias - Pin.



CLICK ON THE RESPECTIVE [PART NUMBER](#) TO DISPLAY A DETAIL DATA SHEET

PART NUMBER	Recommended Power Intgr. Controller	APPLICATION DATA			Recommended		Package Schematic
		Output Voltages Vout Vdc	Output Currents Io_cont Amps	Con Watt	Output Filter Inductor (L2)	Input Filter CMC (L1)	
TSD-1684	TOP 232	2.5/3.3/12	0.5/0.6/0.16	5.2	VTP-01001	PMCU-0330	EE16
TSD-1715	TOP 242	3.3	0.6	2.0	VTP-01001	PMCU-0220	EE16
TSD-1848	TOP 242	3.3/5	1.5/0.7	8.5	VTP-01001	PMCU-0330	EE16
TSD-1813	TOP 233	3.3/5/5	1.5/1.5/0.3	14.0	VTP-01001	PMCU-0330	EEL19
TSD-1687	TOP 243	5.0	2.5	12.5	VTP-01002	PMCU-0330	E22/19
POL-05006 ³	TOP 210	5.0	0.60	3.0	VTP-01001	PMCU-0220	E16-Horz
TSD-816	TOP 210	5.0	0.60	3.0	VTP-01001	PMCU-0220	E16-Horz
TSD-1185	TOP 221	5.0	0.70	3.5	VTP-00301	PMCU-0220	E16-Vert
POL-05010 ³	TOP 200	5.0	1.00	5.0	VTP-01001	PMCU-0220	E16-Horz
POL-05012	TOP 200	5.0	1.20	6.0	VTP-01001	PMCU-0330	E16-Horz
TSD-1812	TOP 242	5.0	1.60	8.0	VTP01001	PMCU-0220	EE16
POL-05020	TOP 223	5.0	2.00	10.0	VTP-01002	PMCU-0330	E16-Vert
POL-05030	TOP 202	5.0	3.00	15.0	VTP-01002	PMCU-0330	E22/19/6
TSD-1486	TOP 200	5.0	1.00	5.0	VTP-01001	PMCU-0220	EE16/EI16
POL-HX030	TOP 252	5.0	1.00	5.0	VTP-01001	PMCU-0220	EF12.6
TSD-1952	TOP 202	5 x 2	1.2/1.2	12.0	VTP-01001	PMCU-0220	EPC19
TSD-778	TOP 201	5.0 x 2	1.20/0.80	6.4	VTP-01001	PMCU-0330	E22,10pin
TSD-1853	TOP 246	5.0 x 4	.150-7.0	140.0	VTP-01005	PMCE-0330	ER35
TSD-1692	TOP 242	5.0/7.5/7.5	0.4/0.25/0.25	5.8	VTP-01001	PMCU-0220	EE16
TSD-1829	TOP 234	5/7/17.6/17.6/50	1.2/.9/.3/.3/.16	31.0	VTP-01002	PMCU-0330	EE30
TSD-937	TOP 204	5/+8/-8	3.0/+1.0	30.0	VTP-01002	PMCE-0330	E28/11
TSD-1201	TOP 225	5/+9/-9	6/+1.3/-0.13	43.0	VTP-01005	PMCU-0330	E133/29
TSD-1160	TOP 225	5/+12/-12	6/+1.0/-0.10	43.0	VTP-01005	PMCU-0330	E133/29
TSD-1695	TOP 248	5/5/12/12	3/2/2/2	49.0	VTP-01001	PMCE-0330	EE33
TSD-1390	TOP 226	5/12	5.0/3.0	61.0	VTP-01005	PMCE-0330	E133/29
TSD-877	TOP 204	5x2 & 15	2.5/0.10	16.0	VTP-01002	PMCU-0330	E28/11
TSD-1017	TOP 209	5/15	0.02/0.10	1.7	N/A	PMCU-0220	E16-Vert
TSD-1135	TOP 209	5/15	0.05/0.12	2.1	N/A	PMCU-0220	E22/19/6
TSD-1305 ⁴	TOP 209	5/15	0.05/0.12	2.1	N/A	PMCU-0220	E22/19/6
TSD-1110	TOP 224	5/+15/-15	2.2/+0.3	20.0	VTP-01002	PMCU-0330	EEL19
TSD-1941	TOP 247	5/7.75/21/21/51	1.4/1/.35/.35/.19	39.2	VTP-01002	PMCU-0330	EI30
TSD-1866	TOP 247	5/15/30	.75/.10/2.5	80.5	VTP-01002	PMCE-0330	EE33
TSD-1869	TOP 248	5/33	3.0/3.0	115.0	VTP-01002	PMCU-0330	EFD25
TSD-893	TOP 201	5/30/+12/-12	1.0/.05/.25/.25	14.0	VTP-01001	PMCU-0330	E30
TSD-876	TOP 210	5/12	0.10/0.20	3.0	Bead	PMCU-0220	E19-Horz
TSD-815 ¹	TOP 201	5/15	1.0/1.0	20.0	VTP-01001	PMCU-0330	E22/19/6
TSD-1961	TOP 248	5/15/24	1/1/4	116.0	VTP-01002	PMCE-0330	EERL35

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pol 10/99

OFF-LINE SWITCH MODE TRANSFORMERS

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		Output Voltages Vout Vdc	Output Currents Io_cont Amps	Con Watt	Output Filter Inductor (L2)	Input Filter CMC (L1)	
TSD-1820	TOP 234	5/18	2/0.5	19.0	VTP-01001	PMCU-0330	E20/10/6
TSD-1694	TOP 234	5/20/20	1.3/.260/.260	17.0	VTP-01001	PMCU-0330	EEL19
TSD-1753	TOP 243	5/24	0.50/0.150	6.1	VTP-01001	PMCU-0220	EE19
TSD-858	TOP 210	5/24	0.30/0.08	3.4	VTP-01001	PMCU-0220	E16-Horz
TSD-1696	TOP 248	5/24/48	0.8/0.15/0.02	8.6	VTP-01001	PMCU-0330	EI28
TSD-779	TOP 202	5/33	1.0/0.50	21.5	VTP-01001	PMCU-0100	E22/19/6
TSD-988	TOP 214	5/28	1.0/0.50	21.0	VTP-01001	PMCU-0100	EEL22
TSD-983	TOP 202	5/33	1.0/0.50	21.5	VTP-01001	PMCU-0100	E22/19/6
TSD-1422	TOP 223Y	5/-65	1.0/0.1	11.5	VTP-01001	PMCU-0330	EFD30
TSD-979	TOP 210	5.5/10	0.80/0.05	5.0	VTP-01001	PMCU-0220	E16-Horz
TSD-1046³	TOP 221	6/25	0.30/0.09	3.9	VTP-00301	PMCU-0220	E22/19/6
TSD-1370	TOP 222	6/24	0.55/0.10	5.0	VTP-01001	PMCU-0220	E2425
TSD-1144¹	TOP 223	6/-38/-60	1.2/0.30/.050	20.0	VTP-01001	PMCE-0330	E2425
TSD-940	TOP 210	6.5	0.80	5.2	VTP-01001	PMCU-0220	E16-Horz
TSD-860	TOP 224	6.9/2x15	0.30/0.60	20.0	VTP-01001	PMCU-0330	E28/11
TSD-1347	TOP 224	6.9/24/-15	0.3/0.6/0.2	20.0	VTP-01001	PMCU-0330	E28/11
POL-07050	TOP 226	7.0	5.00	35.0	VTP-01005	PMCE-0330	E28/11
POL-07003	TOP 209P	7.5	0.26	2.0	VTP-01002	PMCU-0330	E16-Vert
TSD-1093⁴	TOP 209P	7.5	0.26	2.0	VTP-01002	PMCU-0330	E16-Vert
POL-07020	TOP 202	7.5	2.00	15.0	VTP-01002	PMCU-0330	E22/19/6
TSD-1024	TOP 223P	7.5/15	1.0/0.25	11.3	VTP-01002	PMCU-0330	E22/19/6
TSD-1751	TOP 249	7.5/15	1.0/8	128.0	VTP-02007	PMCE-0330	EER35
TSD-1759	TOP 243	7.5/24/24	.27/.20/.04	7.8	VTP-01001	PMCU-0220	EE16
TSD-1195	TOP224	8/16/16	2.0/0.25/0.25	30.0	VTP-01001	PMCE-0330	E30
TSD-1740	TOP 248	8/13/18/18	1.5/3x1.25	73.3	VTP-01001	PMCE-0330	EER35
TSD-794¹	TOP 202	8.5	4.00	34.0	VTP-01005	PMCU-2220	E28/11
TSD-1691	TOP 243	8.6	1.8	15.5	VTP-01002	PMCU-0330	E22/19
TSD-1489	TOP 221Y	9.0	0.40	3.6	VTP-0100	PMCU-0220	EE16/EI16
TSD-880	TOP 204	9/24	3.0/0.60	50.0	VTP-01002	PMCE-0330	E30
POL-97505	TOP 221	9.75	0.50	4.9	VTP-01001	PMCU-0330	E16-Vert
TSD-813²	TOP 200	9.75	0.50	4.9	Bead	PMCU-0220	E19-Horz
POL-97506	TOP 221	9.75	0.60	5.8	Bead	PMCU-0220	E19-Horz
TSD-825³	TOP 221P	12.0	0.30	3.6	VTP-01001	PMCU-0220	E16-Horz
TSD-935³	TOP 200	12.0	0.50	5.0	VTP-01001	PMCU-0220	E19-Horz
TSD-990³	TOP 222P	12.0	0.67	8.0	VTP-01001	PMCU-0220	E19-Horz
POL-12012	TOP 202	12.0	1.20	15.0	VTP-01001	PMCU-0330	E22/19/6
POL-12017	TOP 224P	12.0	1.70	20.4	VTP-01002	PMCU-0220	E25-Vert

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pol 03/04

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		Output Voltages Vout Vdc	Output Currents Io cont Amps	Con Watt	Output Filter Inductor (L2)	Input Filter CMC (L1)	
POL-15020	TOP 226	12.0	2.50	30.0	VTP-01002	PMCU-0330	E28/11
POL-15033	TOP 226	12.0	3.00	36.0	VTP-01002	PMCE-0330	E30
TSD-762²	TOP 103	12.0	3.40	41.0	VTP-01002	PMCE-0330	E28/11
TSD-1834	TOP 247	12	3.75	45.0	VTP-01005	PMCE-0330	E119
TSD-777²	TOP 104	12.0	5.00	60.0	VTP-01005	PMCE-0330	E30
TSD-1405	TOP 224P	12.0	1.70	20.4	VTP-01002	PMCU-0220	E25.4
POL-12208	TOP 223	12x2	0.50/0.30	9.6	VTP-01001	PMCU-0330	E22/19/
POL-12216	TOP 224	12x2	0.80/0.80	21.5	VTP-01001	PMCU-0330	E125-Vert
TSD-1943	TOP 248	12x2	2.5/2.5	62.5	VTP-01002	PMCE-0330	E30
TSD-1551	TOP 222Y	12/5/3.3/-12	0.1/0.2/1.5/0.1	8.4	VTP-01001	PMCU-0330	EE22/19/6
TSD-1654	TOP 223Y	12/12	0.30/0.50	9.6	VTP-01001	PMCU-0330	EE19/EI19
TSD-1469	TOP 222Y	13/6/3.3/-13	0.1/0.2/1.5/0.1	8.8	VTP-01001	PMCU-0330	EE22/19/6
POL-15033²	TOP 104	13.8	4.00	56.0	VTP-01002	PMCE-0330	E30
TSD-946³	TOP 210	14.0	0.20	3.0	VTP-01001	PMCU-0330	E16-Horz
TSD-1010	TOP 210	14.0	0.43	4.5	VTP-01001	PMCU-0330	EFD20
TSD-1003³	TOP 210	15.0	0.20	3.0	VTP-01001	PMCU-0330	E16-Horz
TSD-1330³	TOP 210	15.0	0.20	3.0	VTP-01001	PMCU-0330	E16-Vert
TSD-1811	TOP 243	15.0	1.0	15.0	VTP-01001	PMCU-0220	EE16
TSD-737³	TOP 223	15.0	1.00	15.0	VTP-01001	PMCU-0330	E22/19/6
POL-15020	TOP 226	15.0	2.00	30.0	VTP-01002	PMCU-0330	E28/11
POL-15033	TOP 226	15.0	3.33	50.0	VTP-01002	PMCE-0330	E30
TSD-812	TOP 204	15.0	3.33	50.0	VTP-01002	PMCE-0330	EER28L
POL-15073¹	TOP 204	15.0	7.33	110.0	VTP-02007	PMCE-3330	EER28L
POL-15204³	TOP 200	15x2	0.20/0.20	6.0	VTP-01001	PMCU-0220	E19-Horz
TSD-1683	TOP 221	15.0/15.0	0.20/0.18	6.3	VTP-01001	PMCU-0220	EE22
TSD-860	TOP 202	+15/6.9	+0.60/0.30	20.0	VTP-01001	PMCU-0330	E28/11
TSD-1432	TOP 224Y	15/-15/6.9	0.8/0.8/0.3	26.1	VTP-01001	PMCU-0330	EER28L
TSD-1385	TOP 204	15/15/5	0.2/0.2/1.0	11.0	VTP-01002	PMCU-0330	E28/11
TSD-873¹	TOP 210	17.0	0.10	1.7	Bead	N/A	EP10-SMD
TSD-1035	TOP 221	17.0	0.20	3.5	Bead	N/A	EP10-SMD
TSD-1197	TOP 227	17/21/17	2.0/0.25/0.25	90.0	VTP-01002	PMCE-0330	E133/29
TSD-1055³	TOP 210	15V to 18V	.300 to .350	5.5	VTP-01001	PMCU-0220	EEL16
TSD-1439	TOP 221Y	18.0	0.2	3.6	VTP-01001	PMCU-0220	EE16/EI16
TSD-968³	TOP 202	18x2	0.40/0.40	14.4	VTP-01001	PMCU-0330	E22/19/6
POL-30208	TOP 244	18/+30/-30	0.30/0.75/0.5	30.0	VTP-01001	PMCU-0330	EE28/11
TSD-1668	TOP 232	18.0	0.40	7.2	VTP-01001	PMCU-0220	EEL16
TSD-1752	TOP 232	19.0	0.45	8.6	VTP-01001	PMCU-0220	EEL19
POL-22007	TOP 202	22.0	0.70	15.4	VTP-01001	PMCU-0330	E22/19/6

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		Output Voltages Vout Vdc	Output Currents Io_cont Amps	Con Watt	Output Filter Inductor (L2)	Input Filter CMC (L1)	
TSD-924⁴	TOP 202	22.0	0.70	15.4	VTP-01001	PMCU-0330	E22/19/6
POL-24013	TOP 204	22.0	1.50	33.0	VTP-01002	PMCU-0330	E28/11
POL-24020	TOP 226	22.0	2.00	44.0	VTP-01002	PMCE-0330	E30
TSD-1936	TOP 243	24.0	0.50	12..	VTP-01001	PMCU-0220	EE16
TSD-1693	TOP 246	24.0	3.5	8.4	VTP-01005	PMCU-0330	EI30
TSD-790	TOP 200	24.0	0.15	3.6	VTP-01001	PMCU-0220	E22/19/6
TSD-1801	TOP 243	24.0	0.20	4.8	VTP-01001	PMCU-0220	EE16
TSD-1791	TOP 234	24.0	1.25	30.0	VTP-01001	PMCU-0330	EF25
POL-24013	TOP 226	24.0	1.30	31.2	VTP-01002	PMCU-0330	E28/11
TSD-1043⁴	TOP 204	24.0	1.30	31.2	VTP-01002	PMCU-0330	E28/11
TSD-975	TOP214	24.0	1.30	31.2	VTP-01001	PMCU-0330	EPC25
POL-24020	TOP 226	24.0	2.00	48.0	VTP-01002	PMCE-0330	E30
POL-24208	TOP 226	24.0x2	0.80x2	38.4	VTP-01001	PMCU-0330	E25-Vert
POL-24219	TOP 227	24.0x2	1.875x2	90.0	VTP-01001	PMCE-0330	EI33/29
TSD-1667	TOP 242	24.0/5.0	0.150/0.400	5.6	VTP-01001	PMCU-0220	EI19
TSD-1395	TOP 224Y	24.0/5.0	1.0/3.0	39.0	VTP-01002	PMCE-0330	EE30
TSD-1406	TOP 223P	24.0/5.0	0.15/0.8	7.6	VTP-01001	PMCU-5330	EE22/19/6
TSD-1476	TOP 202YAI		24.0/5.00.5/1.0	17.0	VTP-01001	PMCU-0100	EI22/19/6
TSD-1647	TOP 222	24.0/7.5	0.2/0.265	6.8	VTP-01001	PMCU-0100	EE16/EI16
TSD-1468	TOP 222	-24.0/-60.0	0.3/0.13	15.0	VTP-01001	PMCU-0330	EE19/EI19
POL-28022	TOP 204	28.0	2.20	61.6	VTP-01002	PMCE-0330	E30
TSD-1717	TOP 249	28.0	7.5	210.0	VTP-02007	PMCE-0330	ETD39
POL-30030¹	TOP 227Y	28.0	4.00	112.0	VTP-01005	PMCE-0160	EI33/29
TSD-1056¹	TOP 227Y	29/9.5	3.50/0.25	104.0	VTP-01003	PMCE-0330	EI40
POL-30030	TOP 227Y	30.0	3.00	90.0	VTP-01002	PMCE-0160	EI33/29
TSD-1737	TOP 247	30.0	4.0	120.0	VTP-01005	PMCE-0330	E42
POL-40020	TOP 227Y	40.0	2.00	80.0	VTP-01002	PMCE-0160	EI33/29
POL-45012	TOP 204	45.0	1.20	54.0	VTP-01002	PMCE-0330	E28/11
TSD-1421	TOP 222Y	48.0	0.25	12.0	VTP-01001	PMCE-0330	EF25
TSD-1739	TOP 246	48.0	2.0	96.0	VTP-01002	PMCE-0330	EI33
TSD-1854	TOP 250	48	4.16	200.0	VTP-01005	PMCE-0330	E42/21
TSD-1686	TOP 246	72.0	0.8	58.0	VTP-01001	PMCE-0330	E28
TSD-1809	TOP 245	72.0	0.5	36.0	VTP-01001	PMCU-0330	EI25
TSD-1552	TOP 227	85/-85/48/24	0.175/0.175/1.3/1.3	123.4	VTP-01002	PMCE-0330	EI33/29/1



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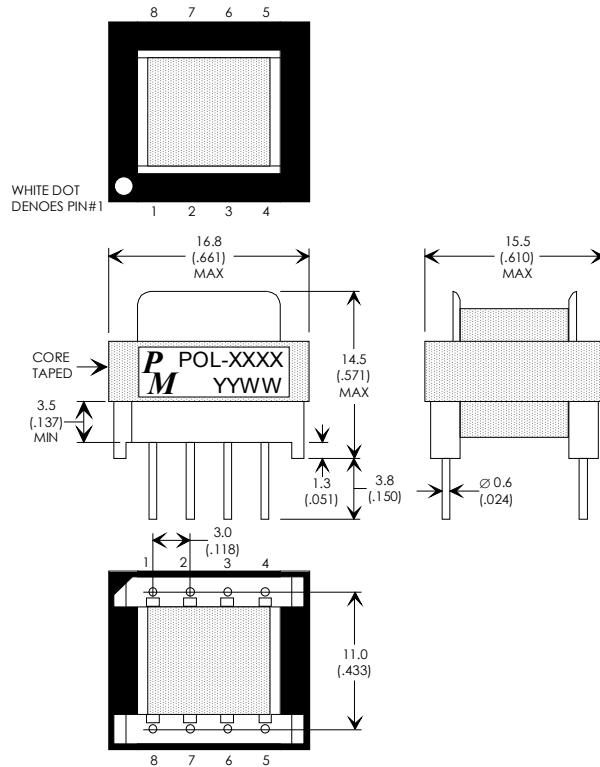


CLICK ON THE RESPECTIVE PART NUMBER TO DISPLAY A DETAIL DATA SHEET

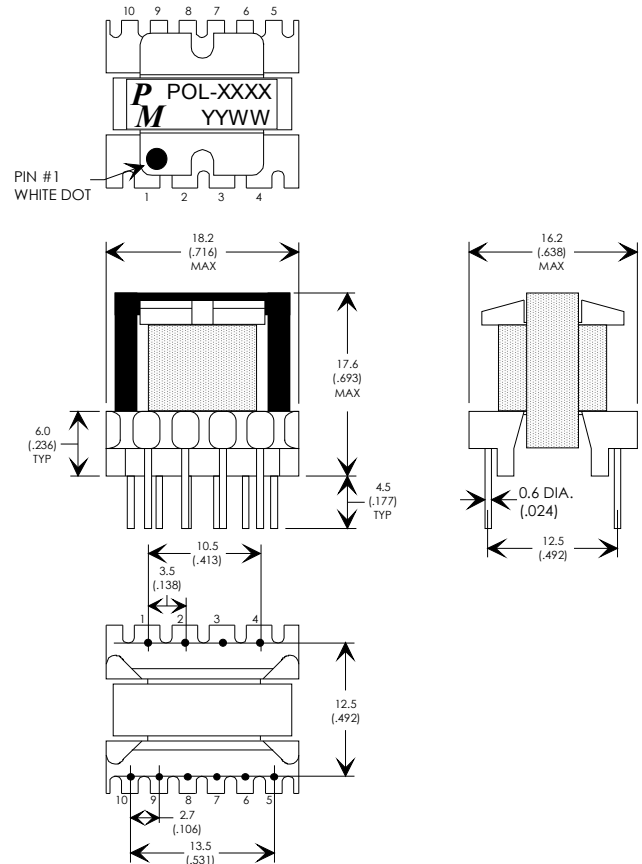
[illegible]

MECHANICALS

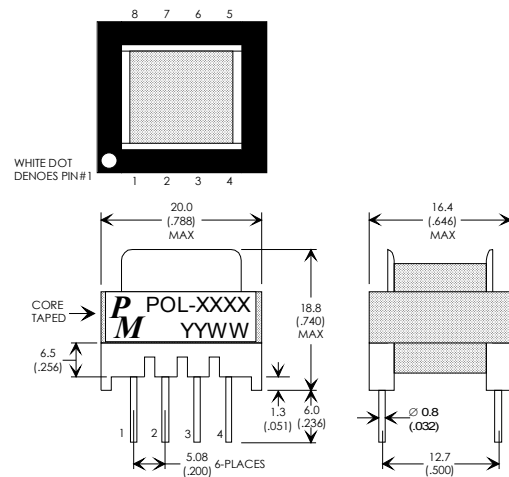
E16-Horz



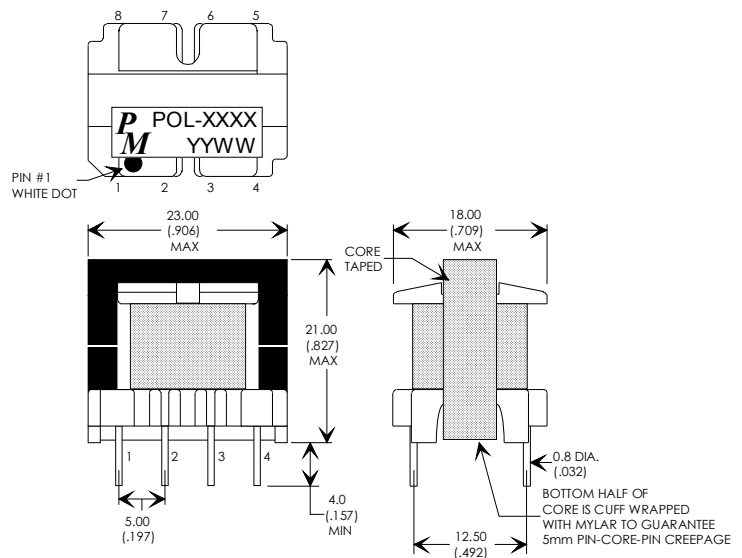
E16-Vert



E19-Horz



E22/19/6

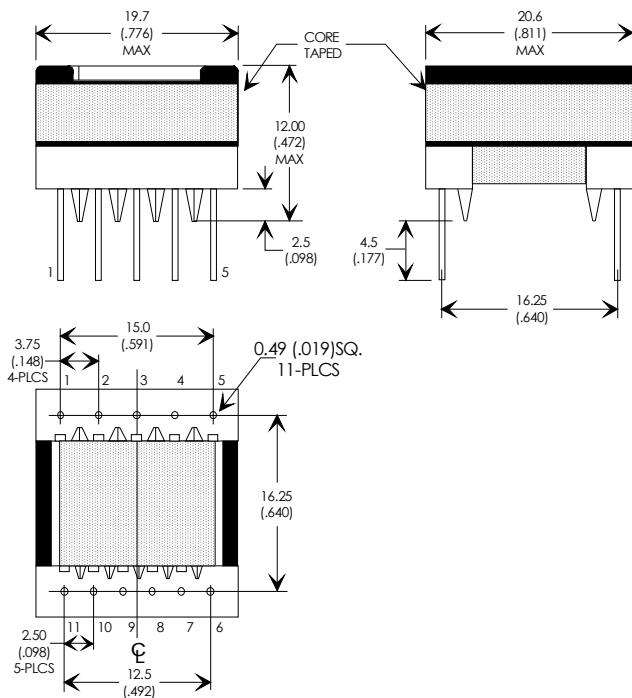


Specifications subject to change without notice.

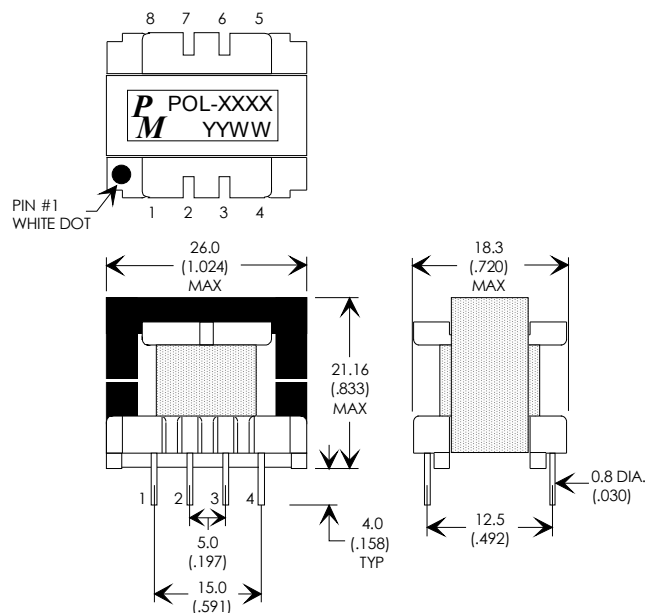
pol 03/04

MECHANICALS

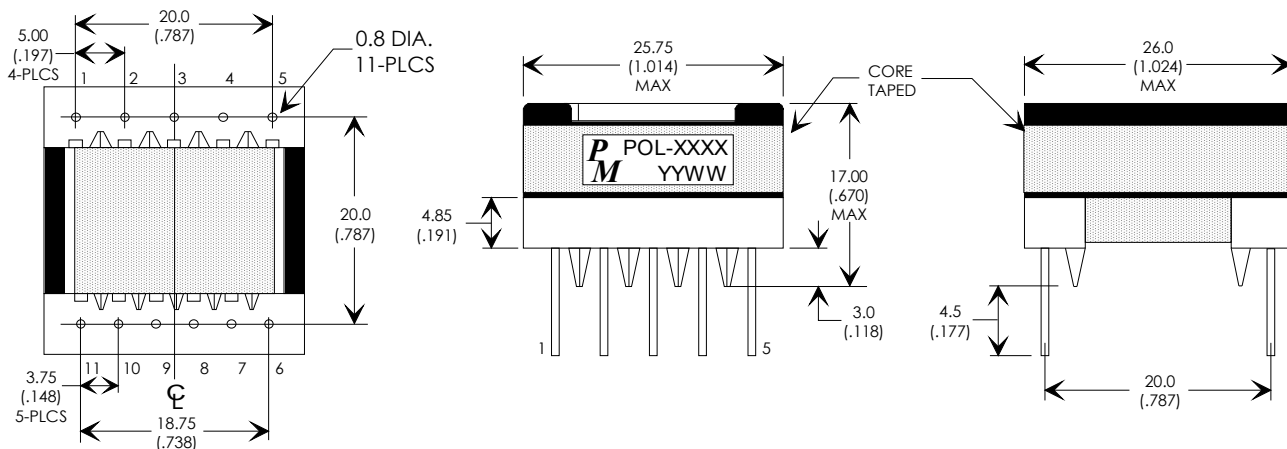
EPC 19



E-25

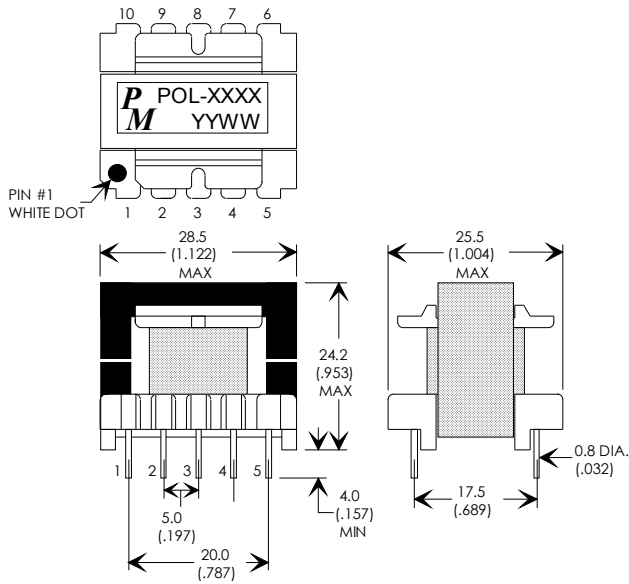


EPC25

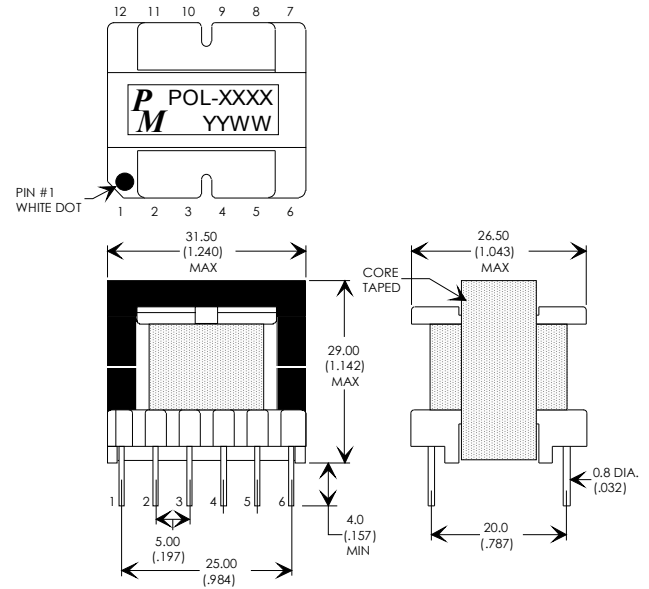


MECHANICALS

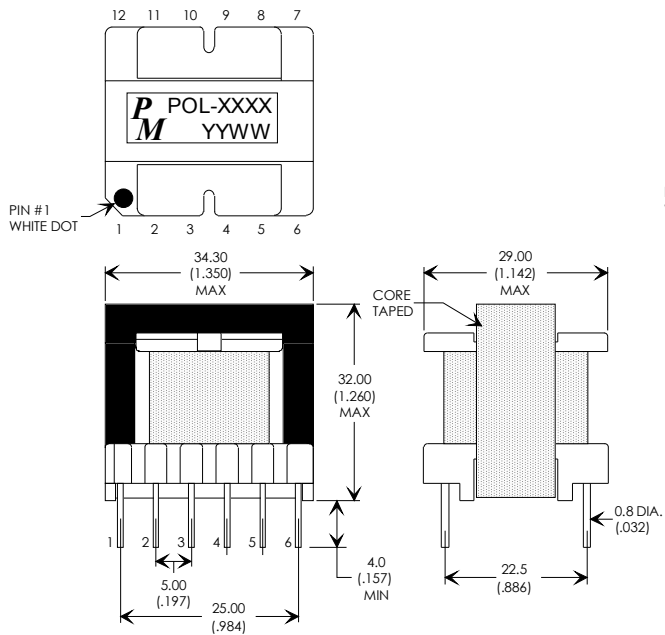
E28/11



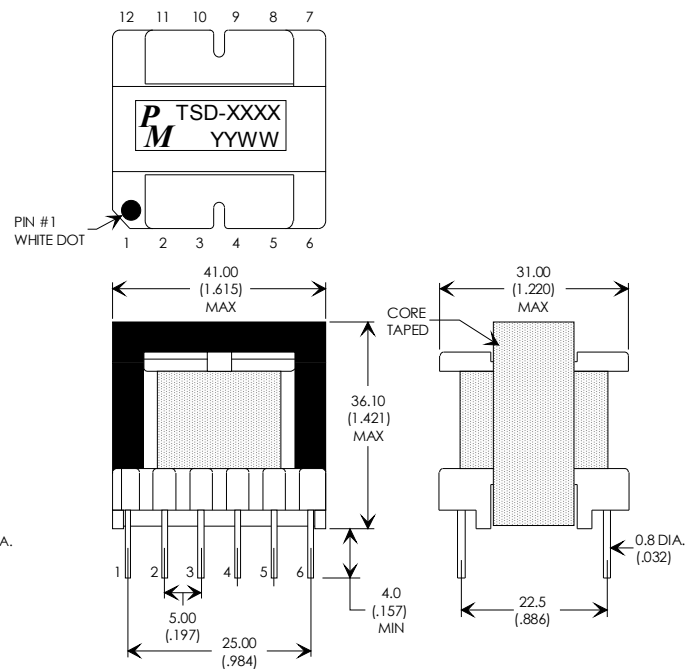
E30



EI33/29



EI40



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