

# OFF-LINE SWITCH MODE TRANSFORMERS

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

- Designed for Use with Power Integrations IC's.
- Design Engineering Support Available.
- Designed to Meet UL1950/IEC950 Safety Standards.
- Multiple Configurations.

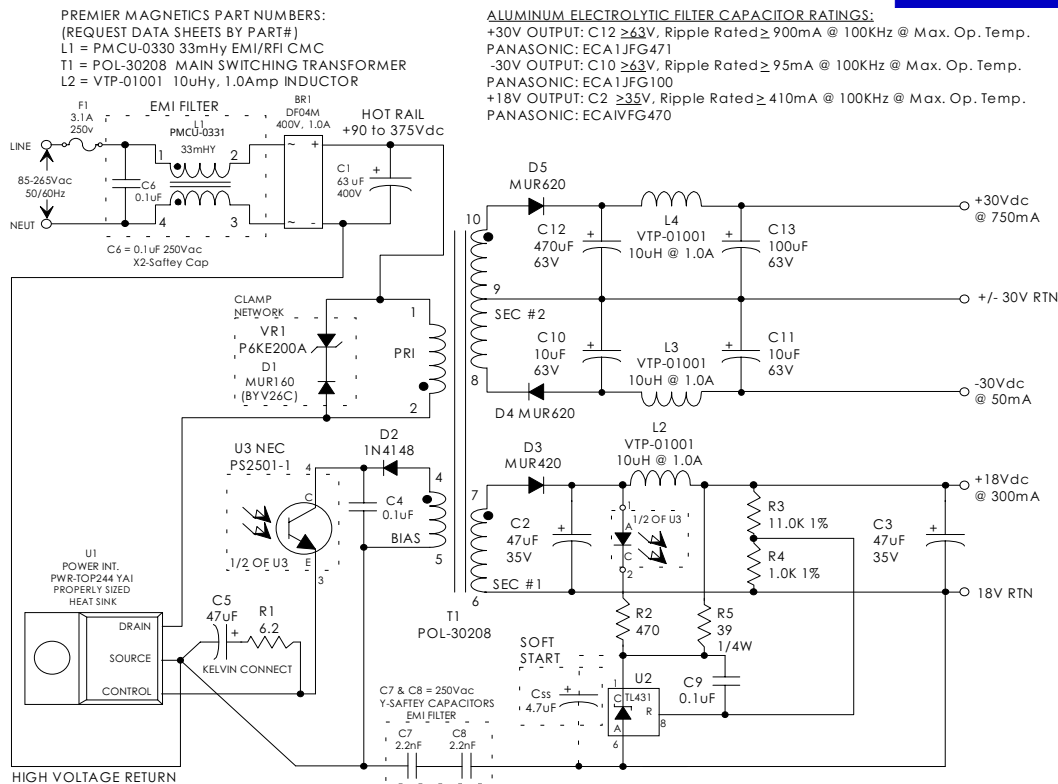
## GENERAL APPLICATION INFORMATION

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<sub>SS</sub> is optional depending on the specific application. Simpler topology is possible depending on the line/load regulation required.

## SCHMATIC



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## GENERAL ELECTRICAL SPECIFICATIONS AT 25°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.	APPLICATION DATA			Recommended	
		Output Voltages Vout Vdc	Output Currents lo_cot Apmps		Output Filter Inductor	Input Filter CMC
<a href="#">TSD-1684</a>	TOP 232	2.5/3.3/12	0.5/0.6/0.16	5.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1715</a>	TOP 242	3.3	0.6	2.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2023</a>	TOP 243Y	3.3	4	14	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2236</a>	TOP 242	3.3	2.4	8	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1848</a>	TOP 242	3.3/5	1.5/0.7	8.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1813</a>	TOP 233	3.3/5/5	1.5/1.5/0.3	14.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1687</a>	TOP 243	5.0	2.5	12.5	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-05006</a>	TOP 210	5.0	0.60	3.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-816</a>	TOP 210	5.0	0.60	3.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2620</a>	TOP 242	5	.5	1.85	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1185</a>	TOP 221	5.0	0.70	3.5	<a href="#">VTP-00301</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-05010</a>	TOP 200	5.0	1.00	5.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-05012</a>	TOP 200	5.0	1.20	6.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1812</a>	TOP 242	5.0	1.60	8.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-05020</a>	TOP 223	5.0	2.00	10.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-05030</a>	TOP 202	5.0	3.00	15.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2286</a>	TOP 234	5.0	3.00	150	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1486</a>	TOP 200	5.0	1.00	5.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-778</a>	TOP 201	5.0 x 2	1.20/0.080	6.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1952</a>	TOP 202	5/5	1.2/1.2	12	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1853</a>	TOP 246	5/5/5/24	7/45/15/15/5	140.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2062</a>	TOP 249	5/6.7/21.3/21.3/54	3.7/1.2/42/3/23	55	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1692</a>	TOP 242	5.0/7.5/7.5	0.4/0.25/0.25	5.8	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1829</a>	TOP 234	5/7/17.6/17.6/50	1.2/9/3/3/16	31.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-937</a>	TOP 204	5/+8/-8	3.0±1.0	30.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1201</a>	TOP 225	5/+9/-9	6/+1.3/-0.13	43.0	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1160</a>	TOP 225	5/+12/-12	6/+1.0/-0.10	43.0	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2220</a>	TOP 250	5/12/-12	8/6/.8	122	<a href="#">VTP-02007</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1695</a>	TOP 248	5/5/12/12	3/2/2/2	49.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1390</a>	TOP 226	5/12	5.0/3.0	61.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-877</a>	TOP 204	5/5/15	0.10/2.5/0.10	16.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1017</a>	TOP 209	5/15	0.02/0.10	1.7	N/A	<a href="#">PMCU-0220</a>
<a href="#">TSD-1135</a>	TOP 209	5/15	0.05/0.12	2.1	N/A	<a href="#">PMCU-0220</a>
<a href="#">TSD-1305</a>	TOP 209	5/15	0.05/0.12	2.1	N/A	<a href="#">PMCU-0220</a>
<a href="#">TSD-1110</a>	TOP 224	5/+15/-15	2.2±0.3	20.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1941</a>	TOP 247	5/7.75/21/21/51	1.4/1/35/35/19	39.2	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>

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		Output Voltages Vout Vdc	Output Currents I <sub>o_cot</sub> Amps	Output Power	Output Filter Inductor	Input Filter CMC
<a href="#">TSD-1866</a>	TOP 247	5/15/30	.75/.10/2.5	80.5	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-893</a>	TOP 201	5/+12/-12/30	1.0/.25/.25/.05	14.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-876</a>	TOP 210	5/12	0.10/0.20	3.0	Bead	<a href="#">PMCU-0220</a>
<a href="#">TSD-2414</a>	TOP 248	5/12/33	1/5/.2	18	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-815</a>	TOP 201	5/15	1.0/1.0	20.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1961</a>	TOP 248	5/15/24	1/1/4	116.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1820</a>	TOP 234	5/18	2/0.5	19.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2014</a>	TOP 244	5/20/5/15/-15	3/.250/.500/.100/.100	26	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1694</a>	TOP 234	5/20/20	1.3/.260/.260	17.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1753</a>	TOP 243	5/24	0.50/0.150	6.1	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-858</a>	TOP 210	5/24	0.30/0.08	3.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1968</a>	TOP 414	5/24	.300/.100	3.9	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1989</a>	TOP 246	5/24	1.2/2.5	66	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1696</a>	TOP 248	5/24/48	0.8/0.15/0.02	8.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2073</a>	TOP 247	5/26	3.5/1	58	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1869</a>	TOP 248	5/33	3.0/3.0	115.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-779</a>	TOP 202	5/33	1.0/0.50	21.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0100</a>
<a href="#">TSD-988</a>	TOP 214	5/28	1.0/0.50	21.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0100</a>
<a href="#">TSD-983</a>	TOP 202	5/33	1.0/0.50	21.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0100</a>
<a href="#">TSD-1422</a>	TOP 223Y	5/-65	1.0/0.1	11.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-979</a>	TOP 210	5.5/10	0.80/0.05	5.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2012</a>	TOP 243Y	5.7/24	1/5	18.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2085</a>	TOP 244	6/1.8	2.5/2.0	19	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1046</a>	TOP 221	6/25	0.30/0.09	3.9	<a href="#">VTP-00301</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1370</a>	TOP 222	6/24	0.55/0.10	5.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1144</a>	TOP 223	6/ -38/ -60	1.2/0.30/.050	20.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-940</a>	TOP 210	6.5	0.80	5.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-860</a>	TOP 224	6.9/2x15	0.30/0.60	20.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1347</a>	TOP 224	6.9/24/-15	0.3/0.6/0.2	20.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-07050</a>	TOP 226	7.0	5.00	35.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-07003</a>	TOP 209P	7.5	0.26	2.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1093</a>	TOP 209P	7.5	0.26	2.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-07020</a>	TOP 202	7.5	2.00	15.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1024</a>	TOP 223P	7.5/15	1.0/0.25	11.3	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1751</a>	TOP 249	7.5/15	1.0/8	128.0	<a href="#">VTP-02007</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1759</a>	TOP 243	7.5/24/24	.27/.20/.04	7.8	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2090</a>	TOP 247	7.5/26	3.5/1.0	53	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>

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		Output Voltages Vout Vdc	Output Currents Io_cot Apmps	Output Power	Output Filter Inductor	Input Filter CMC
<a href="#">TSD-2557</a>	TOP248	8	10	80	<a href="#">VTP-25010</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1195</a>	TOP224	8/16/16	2.0/0.25/0.25	30.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1740</a>	TOP 248	8/13/18/18	1.5/3x1.25	73.3	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-794</a>	TOP 202	8.5	4.00	34.0	<a href="#">VTP-01005</a>	<a href="#">PMCU-2220</a>
<a href="#">TSD-1691</a>	TOP 243	8.6	1.8	15.5	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1489</a>	TOP 221Y	9.0	0.40	3.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2552</a>	TOP 243	9/9	.5/5	9	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2560</a>	TOP 242Y	9	1	9	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-880</a>	TOP 204	9/24	3.0/0.60	50.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-97505</a>	TOP 221	9.75	0.50	4.9	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-813</a>	TOP 200	9.75	0.50	4.9	Bead	<a href="#">PMCU-0220</a>
<a href="#">POL-97506</a>	TOP 221	9.75	0.60	5.8	Bead	<a href="#">PMCU-0220</a>
<a href="#">TSD-2284</a>	TOP 234	10/10/18/18	.78/36/.06/0.06	14	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-825</a>	TOP 221P	12.0	0.30	3.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-935</a>	TOP 200	12.0	0.50	5.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-990</a>	TOP 222P	12.0	0.67	8.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-12012</a>	TOP 202	12.0	1.20	15.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-12017</a>	TOP 224P	12.0	1.70	20.4	<a href="#">VTP-01002</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-15020</a>	TOP 226	12.0	2.50	30.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-15033</a>	TOP 226	12.0	3.00	36.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2325</a>	TOP 245	12.0	2.5	30	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2331</a>	TOP 244	12.0	2.5	30	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2443</a>	TOP 247	12.0	2.75	33	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-762</a>	TOP 103	12.0	3.40	41.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1834</a>	TOP 247	12	3.75	45.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2371</a>	TOP	12.0	4.25	51	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-777</a>	TOP 104	12.0	5.00	60.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1405</a>	TOP 224P	12.0	1.70	20.4	<a href="#">VTP-01002</a>	<a href="#">PMCU-0220</a>
<a href="#">POL-12208</a>	TOP 223	12x2	0.50/0.30	9.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-12216</a>	TOP 224	12x2	0.80/0.80	21.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1943</a>	TOP 248	12x2	2.5/2.5	62.5	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1551</a>	TOP 222Y	12/5/3.3/-12	0.1/0.2/1.5/0.1	8.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2058</a>	TOP 246	12/5/3.3	1/2/5	39	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1654</a>	TOP 223Y	12/12	0.30/0.50	9.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2148</a>	TOP 242	12/15	.3/75	14	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2283</a>	TOP 249	12/24	5/2.5	120	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1469</a>	TOP 222Y	13/6/3.3/-13	0.1/0.2/1.5/0.1	8.8	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-15033</a>	TOP 104	13.8	4.00	56.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>

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<a href="#">TSD-946</a>	TOP 210	14.0	0.20	3.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1010</a>	TOP 210	14.0	0.43	4.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1003</a>	TOP 210	15.0	0.20	3.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1330</a>	TOP 210	15.0	0.20	3.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1811</a>	TOP 243	15.0	1.0	15.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-737</a>	TOP 223	15.0	1.00	15.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-15020</a>	TOP 226	15.0	2.00	30.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-15033</a>	TOP 226	15.0	3.33	50.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-812</a>	TOP 204	15.0	3.33	50.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-15073</a>	TOP 204	15.0	7.33	110.0	<a href="#">VTP-02007</a>	<a href="#">PMCE-3330</a>
<a href="#">POL-15204</a>	TOP 200	15x2	0.20/0.20	6.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1683</a>	TOP 221	15.0/15.0	0.20/0.18	6.3	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-860</a>	TOP 202	+15/6.9	+0.60/0.30	20.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1432</a>	TOP 224Y	15/-15/6.9	0.8/0.8/0.3	26.1	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1385</a>	TOP 204	15/15/5	0.2/0.2/1.0	11.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-873</a>	TOP 210	17.0	0.10	1.7	Bead	N/A
<a href="#">TSD-1035</a>	TOP 221	17.0	0.20	3.5	Bead	N/A
<a href="#">TSD-1197</a>	TOP 227	17/21/17	2.0/0.25/0.25	90.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1055</a>	TOP 210	15V to 18V	.300 to .350	5.5	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1439</a>	TOP 221Y	18.0	0.2	3.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-968</a>	TOP 202	18x2	0.40/0.40	14.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2175</a>	TOP 243	18/12/18	.70/.70/.40	29	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-30208</a>	TOP 244	18/+30/-30	0.30/0.75/0.5	30.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1668</a>	TOP 232	18.0	0.40	7.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1752</a>	TOP 232	19.0	0.45	8.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-2655</a>	TOP 247	19.5	4.62	90	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1993</a>	TOP 234Y	20.5/20.5	1/.45	30	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-22007</a>	TOP 202	22.0	0.70	15.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-924</a>	TOP 202	22.0	0.70	15.4	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-24013</a>	TOP 204	22.0	1.50	33.0	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-24020</a>	TOP 226	22.0	2.00	44.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1936</a>	TOP 243	24.0	0.50	12	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1693</a>	TOP 246	24.0	3.5	84	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-790</a>	TOP 200	24.0	0.15	3.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>

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pol 03/04

# OFF-LINE SWITCH MODE TRANSFORMERS

## GENERAL ELECTRICAL SPECIFICATIONS AT 25°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.	APPLICATION DATA			Recommended	
		Output Voltages Vout Vdc	Output Currents Io_cot Amps	Output Power	Output Filter Inductor	Input Filter CMC
<a href="#">TSD-2514</a>	TOP 243	24.0	.5	12	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1791</a>	TOP 234	24.0	1.25	30.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-24013</a>	TOP 226	24.0	1.30	31.2	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1043</a>	TOP 204	24.0	1.30	31.2	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-975</a>	TOP 214	24.0	1.30	31.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2339</a>	TOP 250	24.0	12.5	300	<a href="#">VTP-07012</a>	<a href="#">PMCE-3100</a>
<a href="#">TSD-2635</a>	TOP 250	24.0	6	144	<a href="#">VTP-02007</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-24020</a>	TOP 226	24.0	2.00	48.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-24208</a>	TOP 226	24.0x2	0.40x2	19.2	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-24219</a>	TOP 227	24.0x2	1.875x2	90.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2010</a>	TOP 249	24/2	2.7/2.7	130	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1667</a>	TOP 242	24.0/5.0	0.150/0.400	5.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-0220</a>
<a href="#">TSD-1395</a>	TOP 224Y	24.0/5.0	1.0/3.0	39.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1406</a>	TOP 223P	24.0/5.0	0.15/0.8	7.6	<a href="#">VTP-01001</a>	<a href="#">PMCU-5330</a>
<a href="#">TSD-1476</a>	TOP 202YAI	24.0/5.0	0.5/1.0	17.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0100</a>
<a href="#">TSD-2645</a>	TOP 249	24/5	3.5/3	99	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1647</a>	TOP 222	24.0/7.5	0.2/0.265	6.8	<a href="#">VTP-01001</a>	<a href="#">PMCU-0100</a>
<a href="#">TSD-2448</a>	TOP 248	24/24	.62/.62	35	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1468</a>	TOP 222	-24.0/-60.0	0.3/0.13	15.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2036</a>	TOP 243Y	26	.8	21	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-2634</a>	TOP 261	26/28	7/1.5	210	<a href="#">VTP-07012</a>	<a href="#">PMCE-3100</a>
<a href="#">TSD-2125</a>	TOP 245	28	1.15	32	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-28022</a>	TOP 204	28.0	2.20	61.6	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1717</a>	TOP 249	28.0	7.5	210.0	<a href="#">VTP-02007</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-30030</a>	TOP 227Y	28.0	4.00	112.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0160</a>
<a href="#">TSD-1056</a>	TOP 227Y	29/9.5	3.50/0.25	104.0	<a href="#">VTP-01003</a>	<a href="#">PMCE-0330</a>
<a href="#">POL-30030</a>	TOP 227Y	30.0	3.00	90.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0160</a>
<a href="#">TSD-1737</a>	TOP 247	30.0	4.0	120.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2647</a>	TOP 247Y	34/-34/24	1/1/.25	74	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2176</a>	TOP 244Y	40/5/3.3	.5/.3/.2	32	<a href="#">VTP-01002</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-40020</a>	TOP 227Y	40.0	2.00	80.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0160</a>
<a href="#">TSD-2194</a>	TOP 250	42	4.2	177.4	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2379</a>	TOP 243	44/44	.300/.100	18	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">POL-45012</a>	TOP 204	45.0	1.20	54.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1421</a>	TOP 222Y	48.0	0.25	12.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>

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# OFF-LINE SWITCH MODE TRANSFORMERS

**GENERAL ELECTRICAL SPECIFICATIONS AT 25°C**

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

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- 2 = Unit Designed for AC Input of 85 to 135Vac, 47/440Hz.
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- 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	Recom- mended Power Intgr.	APPLICATION DATA			Recommended	
		Output Voltages Vout Vdc	Output Currents I <sub>o_cot</sub> Amps	Output Power	Output Filter Inductor	Input Filter CMC
<a href="#">TSD-2119</a>	TOP 233	48	.5	24	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1739</a>	TOP 246	48.0	2.0	96.0	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1854</a>	TOP 250	48	4.16	200.0	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2470</a>	TOP 250	60	4.16	250	<a href="#">VTP-01005</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2629</a>	TOP 261	60	5	300	<a href="#">VTP-01005</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1686</a>	TOP 246	72.0	0.8	58.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1809</a>	TOP 245	72.0	0.5	36.0	<a href="#">VTP-01001</a>	<a href="#">PMCU-0330</a>
<a href="#">TSD-1552</a>	TOP 227	85/-85/48/24	0.175/0.175/1.3/1.3	123.4	<a href="#">VTP-01002</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2559</a>	TOP 249Y	85/-85/48/24	.5 each	121	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-974</a>	TOP104	-118	-0.13	15.3	<a href="#">VTP-01002</a>	N/A
<a href="#">TSD-2569</a>	TOP 258Y	180	.6	108	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-1851</a>	TOP 249	360	.180	65.0	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>
<a href="#">TSD-2637</a>	TOP 258	500	.200	100	<a href="#">VTP-01001</a>	<a href="#">PMCE-0330</a>

Specifications subject to change without notice. pol 03/04

## GENERAL ELECTRICAL SPECIFICATIONS AT 25°C



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

PART NUMBER	Recom- mended Power Intgr.	APPLICATION DATA			Recommended	
		Input Volts	Output Volts@Currents(A)	Output Power	Input Filter CMC	Output Filter Inductor
<a href="#">POL-HX009</a>	TOP 258MN	85-265	12V@.8, 8V@.075, 40V@.3	22	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001</a>
<a href="#">POL-HX010</a>	TOP 260EN	102-265	12V@8, 8V@4	100	<a href="#">PMCE-0330</a>	<a href="#">VTK-01007, VTP-01005</a>
<a href="#">POL-HX011</a>	TOP 258PN	185-265	24V@2.08	50	<a href="#">PMCE-0330</a>	<a href="#">VTP-12001</a>
<a href="#">POL-HX012</a>	TOP 259LN	90-265	19.7V@3.33	65	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX013</a>	TOP 254EN	90-265	12V@1.5	18	<a href="#">PMCE-0330</a>	<a href="#">VTP-12001</a>
<a href="#">POL-HX014</a>	TOP 254EN	90-265	6V@2.5	15	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX015</a>	TOP 258EN	90-265	19V@3.42	65	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX016</a>	TOP 258EN	90-265	19V@3.42	65	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX017</a>	TOP259EN	90-265	19V@3.42	65	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX018</a>	TOP 255PN	85-265	12V@1.67	20	<a href="#">PMCE-0330</a>	<a href="#">VTP-12001</a>
<a href="#">POL-HX019</a>	TOP 257EN	90-265	13V@2.69	35	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX020</a>	TOP 256EN	90-265	5V@2, 15V@2	40	<a href="#">PMCE-0330</a>	<a href="#">VTP-12001</a>
<a href="#">POL-HX021</a>	TOP 257EN	90-265	13V@2.69	35	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>
<a href="#">POL-HX022</a>	TOP 258PN	90-265	5V@1.7, 15V@1.9	35	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001, VTP 01001</a>
<a href="#">POL-HX023</a>	TOP 258PN	90-265	5V@2.2, 12V@2	35	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001, VTP01001</a>
<a href="#">POL-HX024</a>	TOP 261EN	108-132	5Vsb@2, 12V@2, 24V@4.1	133	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001, VTP 01005</a>
<a href="#">POL-HX025</a>	TOP 256EN	90-265	19V@2.1	40	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001</a>
<a href="#">POL-HX026</a>	TOP 256MN	100-375DC	5V@4	20	<a href="#">PMCE-0330</a>	<a href="#">VTP-01005</a>
<a href="#">POL-HX027</a>	TOP 258MN	90-265	32V@.65	20	<a href="#">PMCE-0330</a>	<a href="#">VTP-01001</a>
<a href="#">POL-HX028</a>	TOP 258MN	90-265	24V@1.46	35	<a href="#">PMCE-0330</a>	<a href="#">VTP-12001</a>
<a href="#">POL-HX029</a>	TOP 257PN	85-265	12V@2.5	30	<a href="#">PMCE-0330</a>	<a href="#">VTP-10002</a>

Note:  
POL-HX015: 12 Pins Vertical  
POL-HX016: 10 Pins extended Vertical, Secondary self-leads









# OFF-LINE SWITCH MODE TRANSFORMERS

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

## UL 1950 & CSA 950-95, C-UL US Recognized Parts

UL & CSA Recognized Components in UL File E162344 (S), Product Designation XNWX2

REF #	PART NUMBER	Package Schematic	REF #	PART NUMBER	Package Schematic	REF #	PART NUMBER	Package Schematic
1	TSD-737	E22/19/6	38	TSD-1110	EEL19			
2	TSD-762	E28/11	39	POL-05006	E-16 HORIZ			
3	TSD-777	E30	40	POL-05010	E-16 HORIZ			
4	TSD-778	E22/19/6	41	POL-05012	E-16 HORIZ			
5	TSD-779	E22/19/6	42	POL-05020	E-16 VERT			
6	TSD-790	E22/19/6	43	POL-05030	E22/19/6			
7	TSD-794	E28/11	44	POL-07003	E-16 VERT			
8	TSD-812	EER28L	45	POL-07020	E22/19/6			
9	TSD-813	E19 HORIZ	46	POL-07050	E28/11			
10	TSD-816	E-16 HORIZ	47	POL-12012	E22/19/6			
11	TSD-825	E-16 HORIZ	48	POL-12017	EI25 VERT			
12	TSD-858	E16 HORIZ	49	POL-12208	E22/19/6			
13	TSD-860	E28/11	50	POL-12216	EI25 VERT			
14	TSD-876	E19 HORIZ	51	POL-15020	E28/11			
15	TSD-877	E28/11	52	POL-15033	E30			
16	TSD-880	E30	53	POL-15073	EER28L			
17	TSD-893	E30	54	POL-15204	E19 HORIZ			
18	TSD-924	E22/19/6	55	POL-22007	E22/19/6			
19	TSD-935	E19 HORIZ	56	POL-24013	E28/11			
20	TSD-937	E28/11	57	POL-24020	E28/11			
21	TSD-940	E-16 HORIZ	58	POL-28022	E30			
22	TSD-946	E-16 HORIZ	59	POL-30030	EI33/29			
23	TSD-968	E22/19/6	60	POL-40020	EI33/29			
24	TSD-974	EFD25	61	POL-45012	E28/11			
25	TSD-975	EPC25	62	POL-97506	E19 HORIZ			
26	TSD-979	E-16 HORIZ						
27	TSD-983	E22/19/6						
28	TSD-988	EEL22						
29	TSD-990	E19 HORIZ						
30	TSD-1003	E-16 HORIZ						
31	TSD-1017	E-16 VERT						
32	TSD-1024	E22/19/6						
33	TSD-1043	E28/11						
34	TSD-1046	E22/19/6						
35	TSD-1055	EEL16						
36	TSD-1056	EI40						
37	TSD-1093	E-16 VERT						