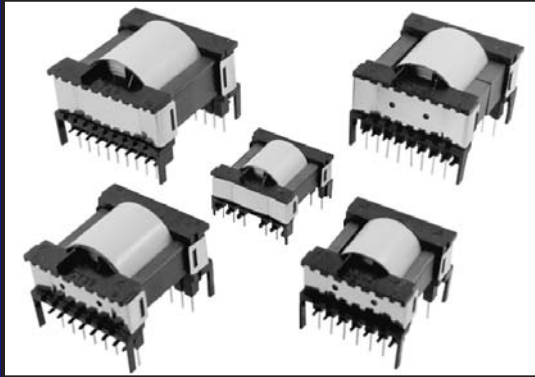


SWITCH MODE TRANSFORMERS

WCM 404 Series



PRODUCT DESCRIPTION

West Coast Magnetics' 404 series is ideal for use in switch mode power supply applications. These transformers extend the output power range available beyond the West Coast Magnetics' 401 and 402 series transformers up to 500 Watts. The geometry of the 404 series core and bobbin provides a uniform winding area around the magnetic circuit which provides greater efficiency than other E-core designs. The material has also been designed to maximize inter-winding isolation, making the 404 series a good choice when safety agency compliance is important.

FEATURES - BENEFITS



Output power to 500 Watts • More efficient than other E core designs • Adaptable to UL, CSA, VDE safety agency requirements • Standard gapped cores available from stock • Design assistance from West Coast Magnetics

DESIGN CONSTANTS

Size Code	A_l (ungapped, min.)	A_l (single gap)	A_e core area (mm ²)	l_e magnetic path length (mm)	V_e core volume (mm ³)	W_a bobbin winding area (mm ²)	$W_a A_c$ core area x winding area (mm ⁴)	Bobbin window width (mm)	Bobbin window height (mm)	Mean length per turn (mm)
ETD 29	1600	160	76	72	5500	95	7220	19.4	4.9	53
ETD 34	1900	160	97	79	7600	123	11930	21.0	5.9	60
ETD 39	2100	250	125	92	11500	177	22125	25.9	6.8	69
ETD 44	2600	250	173	104	17800	214	37022	29.7	7.2	77
ETD 49	3000	400	211	114	24000	273	57603	32.7	8.3	85

OUTPUT POWER VS FREQUENCY OF OPERATION (WATTS)

Size Code	25 kHz	50 kHz	100 kHz	250 kHz	500 kHz
ETD 29	73	98	131	185	221
ETD 34	115	153	204	287	344
ETD 39	198	264	352	495	593
ETD 44	311	415	554	778	932
ETD 49	460	612	817	1146	1374

Power Curve Assumptions:

1. Push/Pull circuit topology
2. Bobbin Window area utilization = 40%
3. Flux density (B) chosen so that core losses at all Frequencies are 70mW/cm³.

Notes:

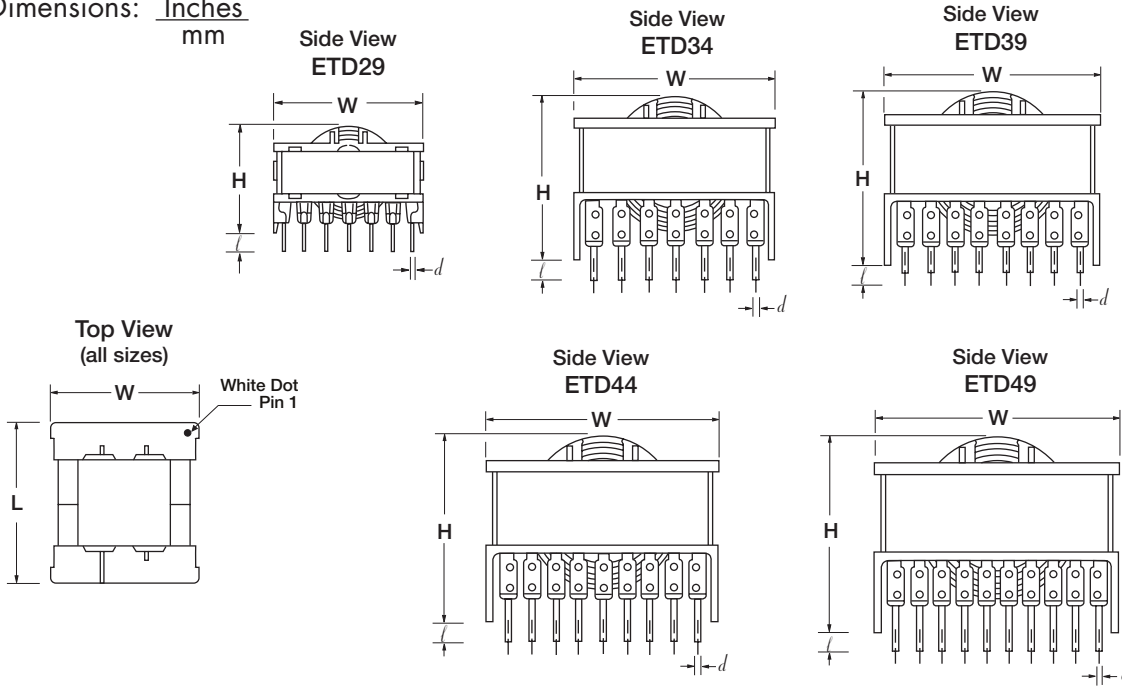
1. Reduce power rating in Table above by 50% for forward and flyback converter topologies.
2. Final sizing of the transformer will depend on a number of interrelated variables. The data in the above table should be considered a starting point only.
3. If safety agency is required, the final size may be significantly larger than the data in the table would indicate.



SWITCH MODE TRANSFORMERS

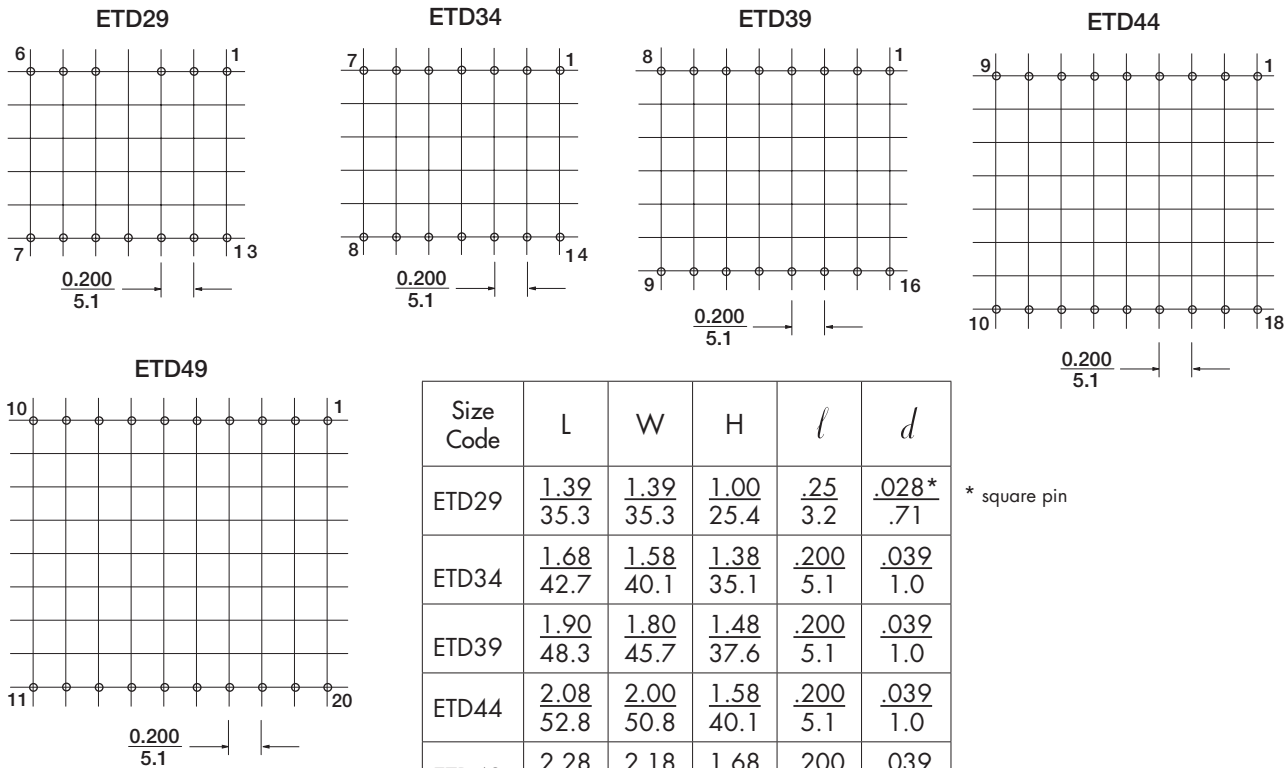
WCM 404 Series

Dimensions: Inches
mm



PCB Layouts

- Holes for bobbin



* square pin

Note: All materials of construction minimum Class B 130 degrees C rated.

