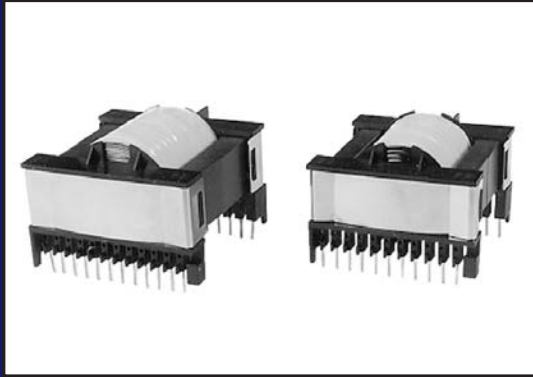


# SWITCH MODE TRANSFORMERS

## WCM 408 Series



### PRODUCT DESCRIPTION

Designed for switching power applications, West Coast Magnetics' 408 series transformers can accommodate in excess of 2 kW of power. The ETD geometry is ideal for safety critical applications, as a high degree of creepage and clearance is built into the bobbin geometry. WCM stocks material suitable for switching frequencies up to 500 kHz.

### FEATURES - BENEFITS



Power in excess of 2 kW • Adaptable to UL, CSA, VDE safety agency requirements • Design assistance from West Coast Magnetics • Fast prototype turnarounds

### DESIGN CONSTANTS

Size Code	$A_l$ (ungapped, min.)	$A_e$ core area (cm <sup>2</sup> )	$l_e$ magnetic path length (cm)	$V_e$ core volume (cm <sup>3</sup> )	$W_b$ bobbin winding area (cm <sup>2</sup> )	$W_{Ac}$ core area x winding area (cm <sup>4</sup> )	Bobbin window width (cm)	Bobbin window height (cm)	Mean length per turn (cm)
ETD 54	3520	2.80	12.7	35.6	3.16	8.85	3.68	0.86	9.6
ETD 59	4200	3.68	13.9	51.2	3.67	13.51	4.12	0.89	10.6

### OUTPUT POWER VS FREQUENCY OF OPERATION (WATTS)

Size Code	25 kHz	50 kHz	100 kHz	250 kHz	500 kHz
ETD 54	680	900	1200	1650	2000
ETD 59	1000	1350	1800	2500	3000

#### 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/cm<sup>3</sup>.

#### Notes:

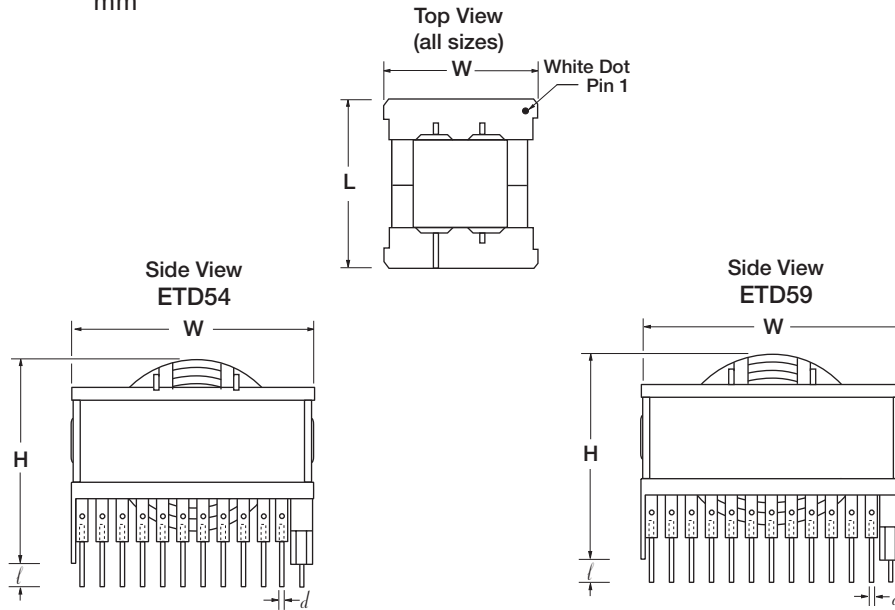
1. Reduce power rating in Table above by 50% for forward and flyback converter topologies.
2. Final sizing of the transformer will depend on a number of interrelated variables. The data in the above table should be considered a starting point only.
3. If safety agency is required, the final size may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



# SWITCH MODE TRANSFORMERS

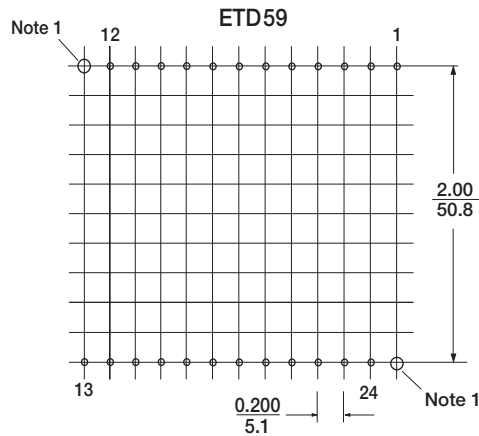
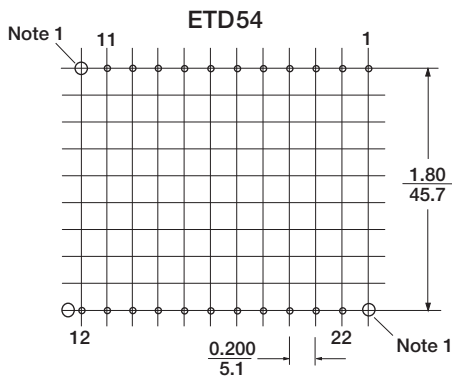
## WCM 408 Series

Dimensions: Inches  
mm



### PCB Layouts

○ Holes for bobbin



Note 1: Holes to secure transformer.  
Recommended diameter =  $\frac{.134}{3.4}$

Size Code	L	W	H	l	d
ETD54	$\frac{2.42}{61.5}$	$\frac{2.42}{61.5}$	$\frac{1.89}{48.0}$	$\frac{.178}{4.5}$	$\frac{.040}{1.0}$
ETD59	$\frac{2.61}{66.2}$	$\frac{2.63}{66.9}$	$\frac{1.99}{50.5}$	$\frac{.178}{4.5}$	$\frac{.040}{1.0}$

Note 2: All materials of construction minimum Class B 130 degrees C rated.

