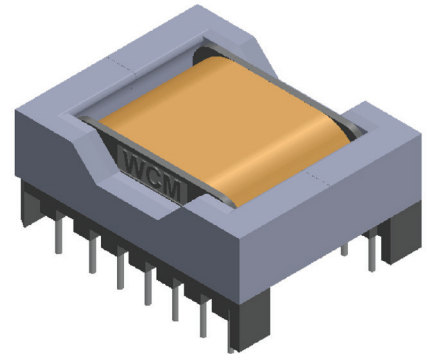


# WCM410-40 WCM410-20 WCM410-30 WCM410-10

## Switch Mode Transformers

### Product Description

West Coast Magnetics' new WCM410-40,-30,-20,-10 series sets the standard for medium power switch mode transformers. This new series has both very high power density and enough isolation to meet UL/CSA/VDE isolation requirements for medical transformers. They are designed specifically with a low loss core suitable for use up to 2 MHz.



### Output Power vs Frequency of Operation (Watts)

Product Code	Frequency	100 kHz	200 kHz	400 kHz	600 kHz	1 MHz
WCM410-40	Power Rating	270	329	402	490	600
WCM410-30	Power Rating	140	171	208	254	310
WCM410-20	Power Rating	68	83	101	123	150
WCM410-10	Power Rating	33	40	49	60	72

### Engineering Data

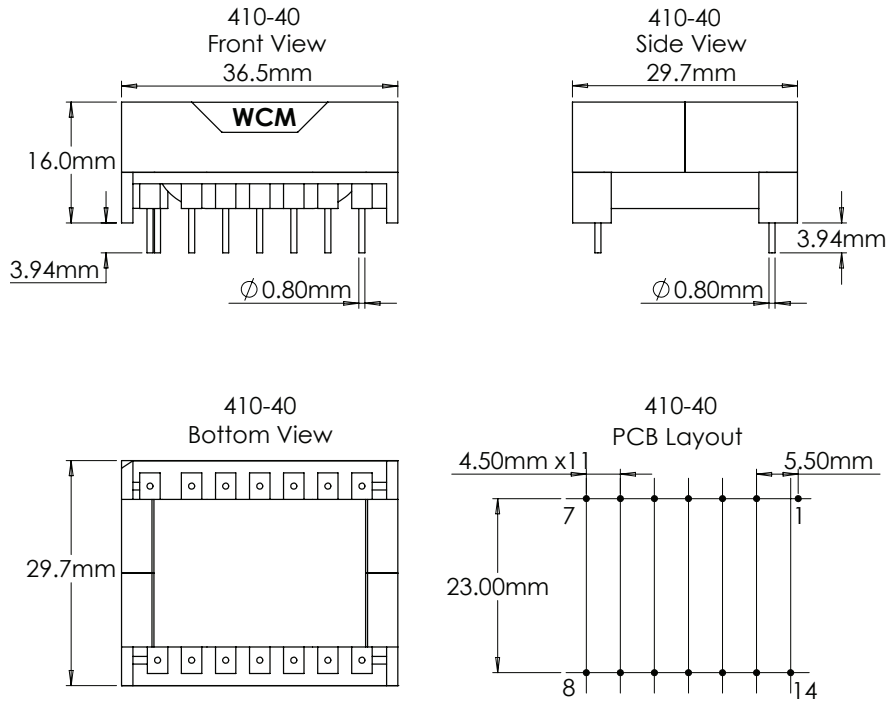
Product Code	Ae Core Area (mm <sup>2</sup> )	Le magnetic path length (mm)	Ve core volume (mm <sup>3</sup> )	Wa bobbin winding area (mm <sup>2</sup> )	WaAc Core area winding area (mm <sup>4</sup> )	Bobbin window width (mm)	Bobbin window height (mm)	Mean length per turn (mm)	Core material
WCM410-40	77.1	77.87	2806	75.66	5833	19.5	3.88	59.0	WCM-F300
WCM410-30	54.6	66.93	1765	54.56	2978	17.6	3.10	47.6	WCM-F300
WCM410-20	38.4	54.23	979	38.25	1468	15.0	2.55	38.2	WCM-F300
WCM410-10	25.4	43.96	530	27.97	710	11.9	2.35	31.5	WCM-F300

Note:  
1. Power rating is based on 40°C Temperature rise, unpotted, no forced air or cold plate cooling. Power rating will increase significantly with potted transformer and external cooling available.

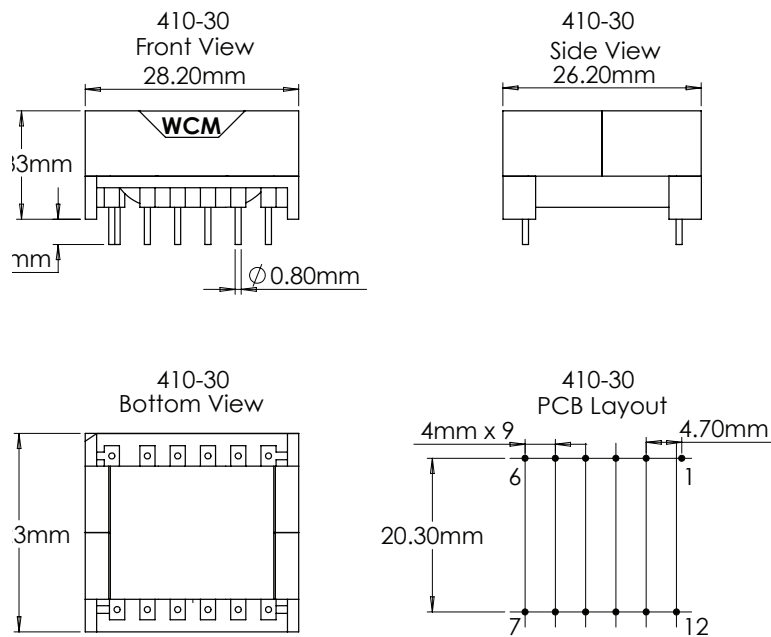


# Schematics

## WCM410-40 and WCM410-30



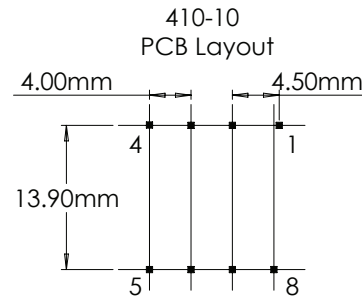
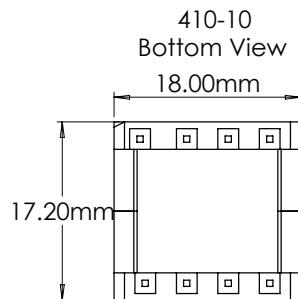
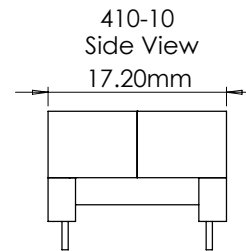
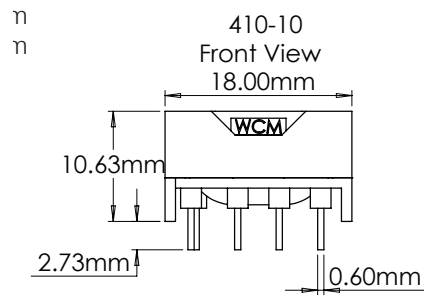
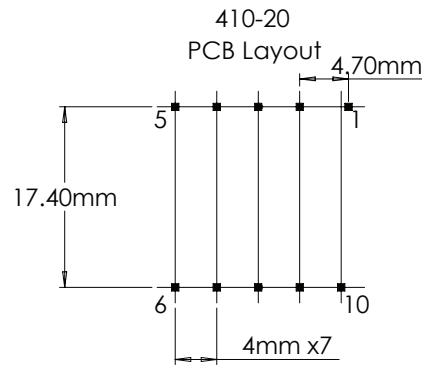
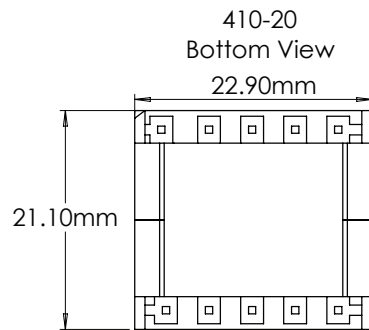
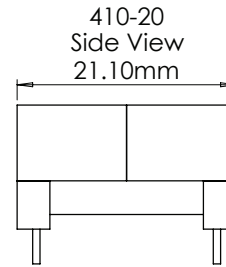
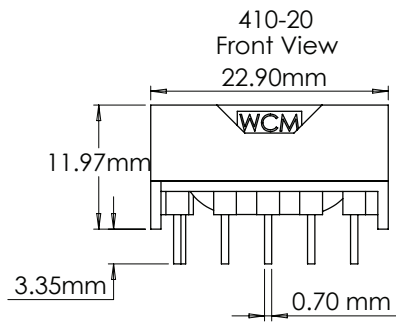
m  
m



Dimensions:	Tolerance:
Inches	Inches
mm	x.xx ± 0.020"
	x.xxx ± 0.005"
	Millimeters
	x.x ± 0.25mm
	x.xx ± 0.13mm

# Schematics

## WCM410-20 and WCM410-10



### Dimensions:

Inches  
mm

### Tolerance:

Inches

x.xx ± 0.020"  
x.xxx ± 0.005"

Millimeters

x.x ± 0.25mm  
x.xx ± 0.13mm

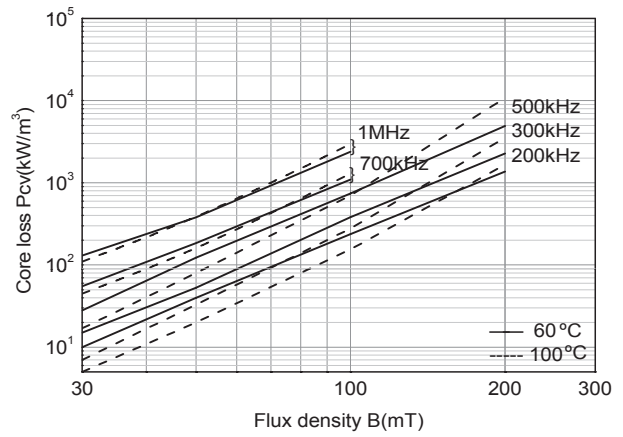
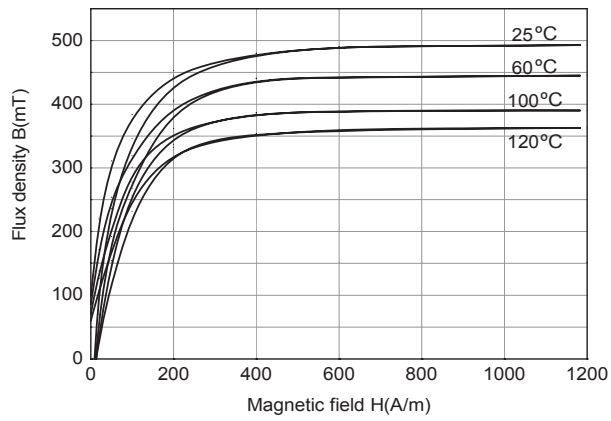
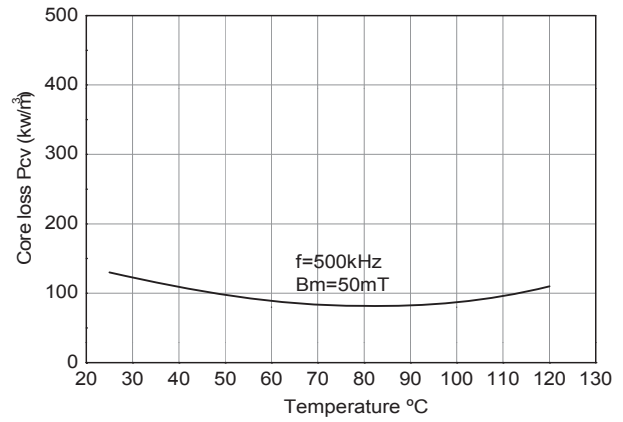
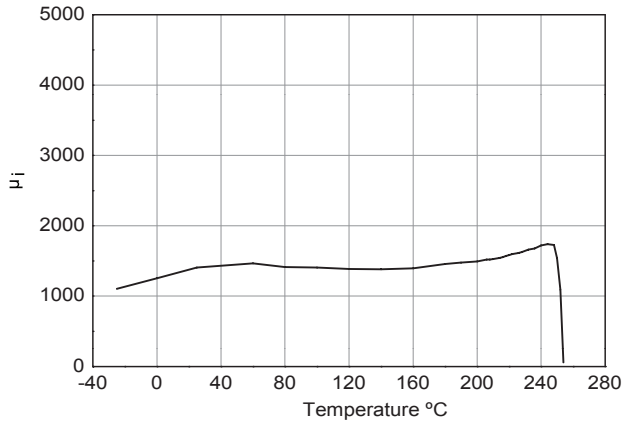
# Material Characteristics

## WCM-F300

Characteristics	Symbol	Unit		
Initial Permeability	$\mu_i$	-		1400 $\pm 25\%$
Amplitude Permeability	$\mu_a$	-		-
Saturation Flux Density at 1194 A/m	$B_s$	mT mT	25 °C 100 °C	490 390
Remanence	$B_r$	mT mT	25 °C 100 °C	100 70
Coercivity	$H_c$	A/m A/m	25 °C 100 °C	25 20
Core Loss	500 kHz 50 mT	$P_{cv}$	kw/m <sup>3</sup>	130
			kw/m <sup>3</sup>	80
			kw/m <sup>3</sup>	80
			kw/m <sup>3</sup>	110
			kw/m <sup>3</sup>	-
Electrical Resistivity	$\rho$	$\Omega \cdot m$		220
Curie Temperature	$T_c$	°C		>250
Density	$d$	kw/m <sup>3</sup>		$4.7 \times 10^3$

Test core: OD=25mm TH=8mm ID=15mm

# Graphs WCM-F300



Test core: OD=25mm TH=8mm ID=15mm