

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.

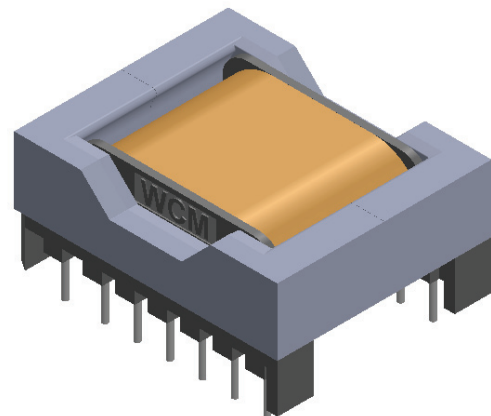
OUTPUT POWER VS FREQUENCY OF OPERATION (WATTS)

Size 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

Size Code	Ae Core Area (mm ²)	Le magnetic path length (mm)	Ve core volume (mm ³)	Wa bobbin winding area (mm ²)	WaAc Core area winding area (mm ⁴)	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

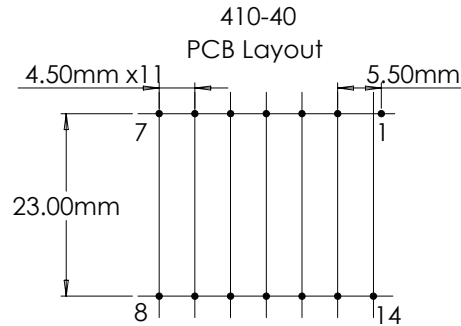
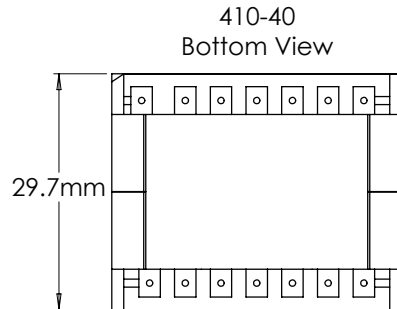
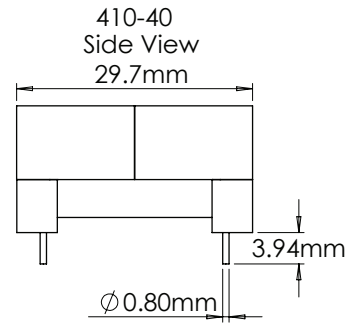
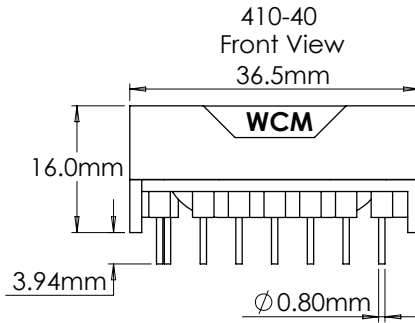
Power rating is based on 40°C Temperature rise, unpotted, no forced air or cold plate cooling. Power rating will increase significantly with potted transformer and external cooling available.



WCM410-40 WCM410-20
WCM410-30 WCM410-10 p.2

Dimensions: $\frac{\text{inches}}{\text{mm}}$

switch mode transformers



Tolerance:

Inches

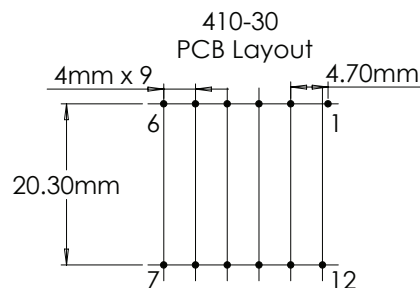
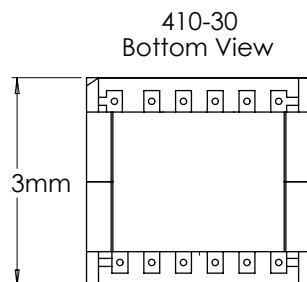
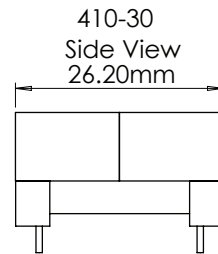
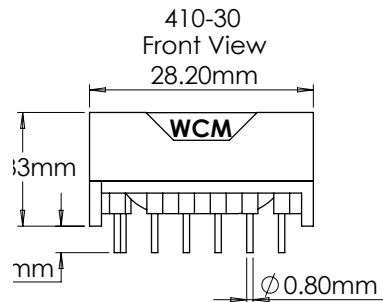
x.xx $\pm 0.020''$

x.xxx $\pm 0.005''$

Millimeters

x.x ± 0.25 mm

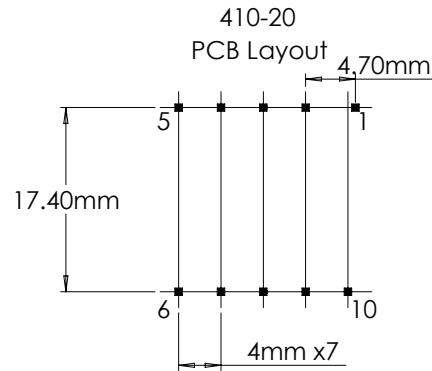
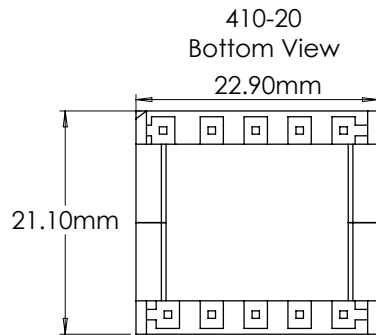
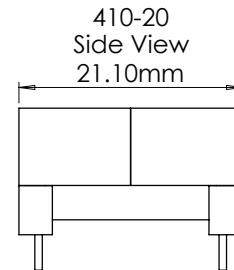
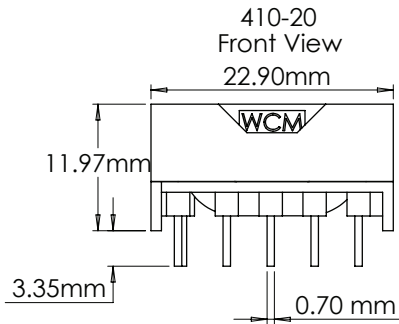
x.xx ± 0.13 mm



WCM410-40 WCM410-20
WCM410-30 WCM410-10 p.3

Dimensions: $\frac{\text{inches}}{\text{mm}}$

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Tolerance:

Inches

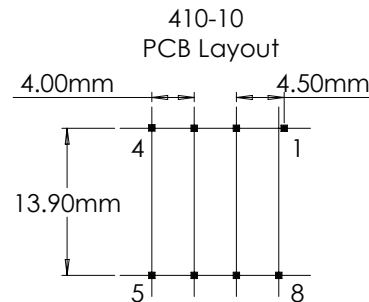
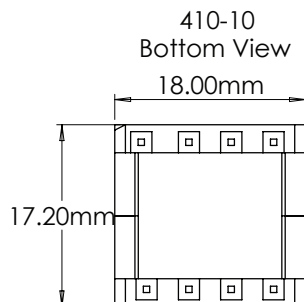
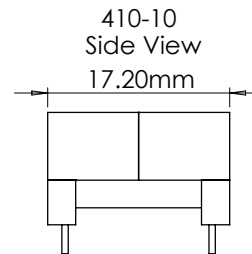
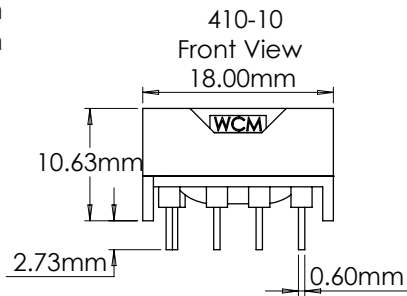
x.xx $\pm 0.020''$

x.xxx $\pm 0.005''$

Millimeters

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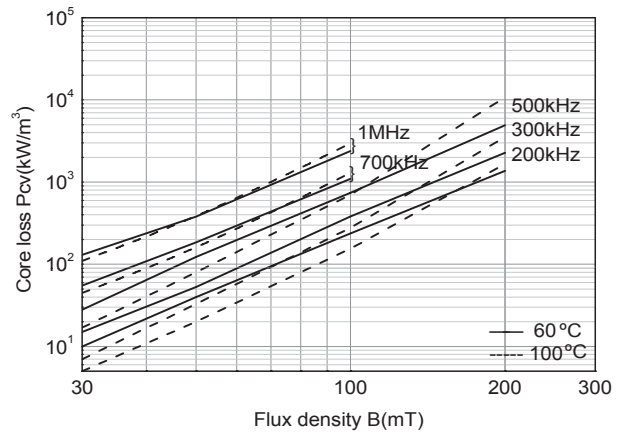
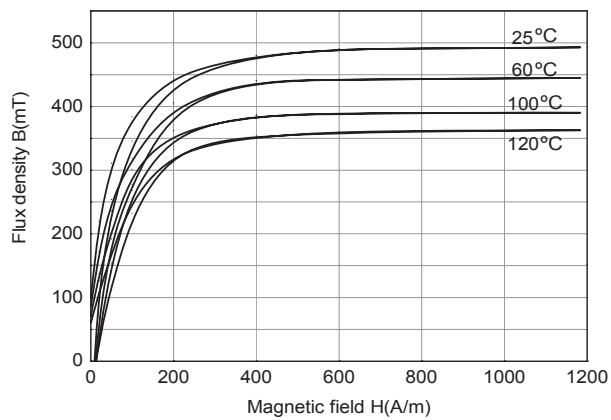
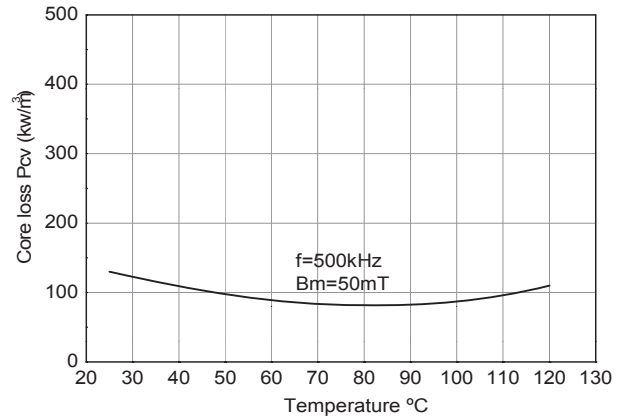
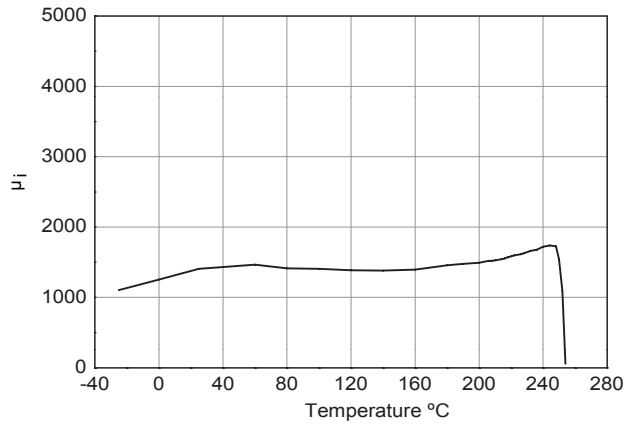
WCM-F300

Material Characteristics

Characteristics	Symbol	Unit			
Initial Permeability	μ_i	–		1400 $\pm 25\%$	
Amplitude Permeability	μ_a	–		–	
Saturation Flux Density at 1194A/m	Bs	mT	25°C	490	
		mT	100°C	390	
Remanence	Br	mT	25°C	100	
		mT	100°C	70	
Coercivity	Hc	A/m	25°C	25	
		A/m	100°C	20	
Core Loss	500 kHz 50 mT	Pcv	kw/m ³	25°C	130
			kw/m ³	60°C	80
			kw/m ³	100°C	80
			kw/m ³	120°C	110
			kw/m ³	140°C	–
Electrical Resistivity	ρ	$\Omega \cdot m$		220	
Curie Temperature	Tc	°C		>250	
Density	d	kw/m ³		4.7×10^3	

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

WCM-F300



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