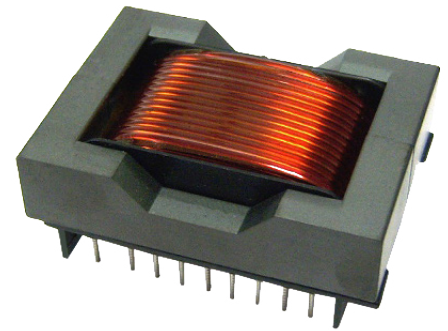


WCM410-88 WCM410-60 WCM410-70 WCM410-50

Switch Mode Transformers

Product Description

West Coast Magnetics' new WCM410-88,-70,-60,-50 series raise the bar for high power switch mode transformers. This new series was designed in order to achieve 50% more power density than other geometries currently available on the market, without sacrificing isolation. The core and bobbin are also suitable for safe UL/CSA/VDE coupling with medical grade isolation standards.



Output Power vs Frequency of Operation (Watts)

Product Code	Frequency	25 kHz	50 kHz	100 kHz	200 kHz	500 kHz	1 MHz
WCM410-88	Power Rating	1.8 kW	2.7 kW	3.7 kW	4.4 kW	5.1 kW	-
WCM410-70	Power Rating	1.1 kW	1.8 kW	2.4 kW	2.8 kW	3.2 kW	-
WCM410-60	Power Rating	-	-	1.0 kW	1.2 kW	1.9 kW	2.2kW
WCM410-50	Power Rating	-	-	550 W	660 W	1.0 kW	1.2 kW

Engineering Data

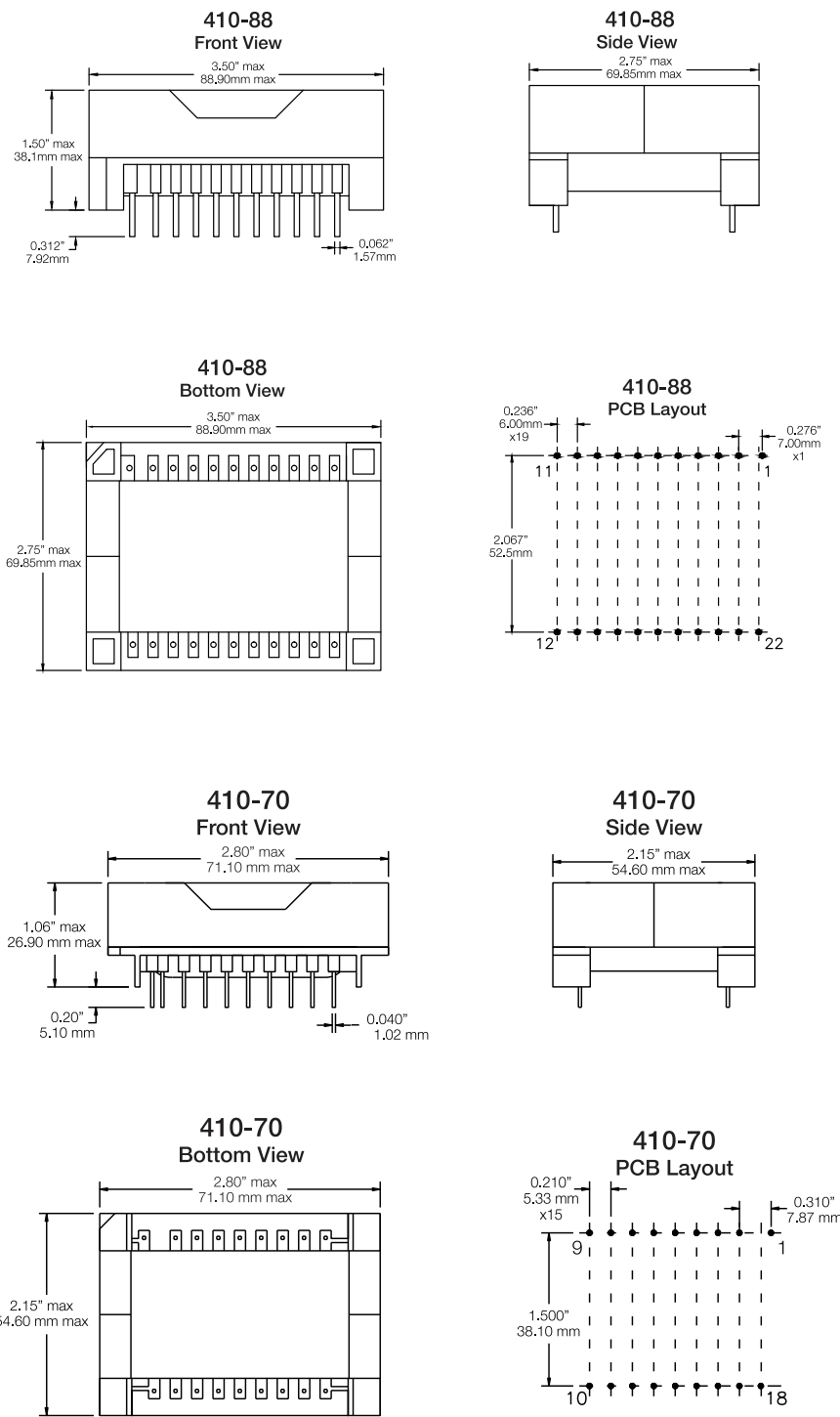
Product Code	Al (ungapped, nH/T ²)	Ae Core Area (mm ²)	Le magnetic path length (mm)	Ve core volume (mm ³)	Wa bobbin winding area (mm ²)	WaAc Core area winding area (mm ⁴)	Bobbin window width (mm)	Bobbin window height (mm)	Mean length per turn (mm)	Core material
WCM410-88	5500	404.0	169.4	69,292	385.2	155,765	45.00	8.56	140.9	WCM-F100
WCM410-70	4400	245.0	129.0	31,600	201.6	49,392	31.75	6.35	108.0	WCM-F100
WCM410-60	3600	158.6	102.6	15,755	137.0	21,728	26.50	5.17	86.1	WCM-F300
WCM410-50	2100	106.7	89.2	9913	112.1	11,958	24.00	4.67	68.0	WCM-F300

Note:

Power rating is based on 40°C Temperature rise, unpotted, no forced air or cold plate cooling.

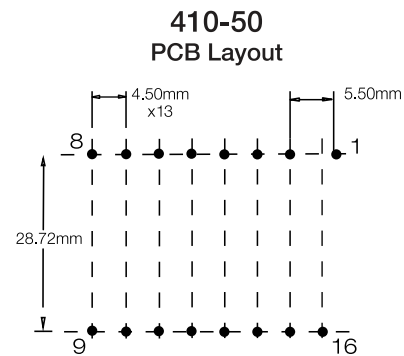
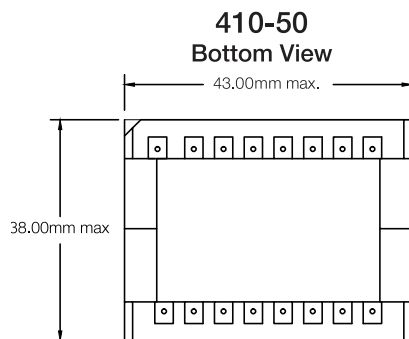
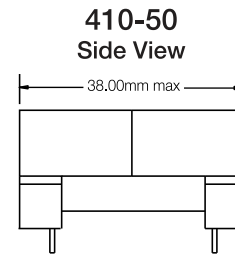
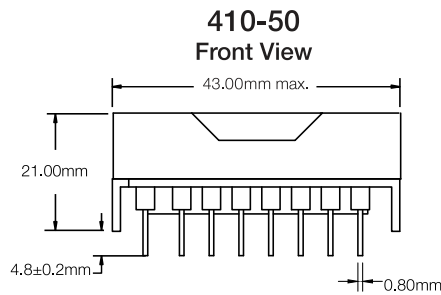
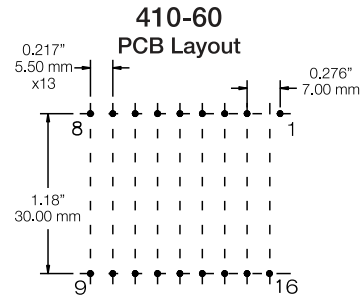
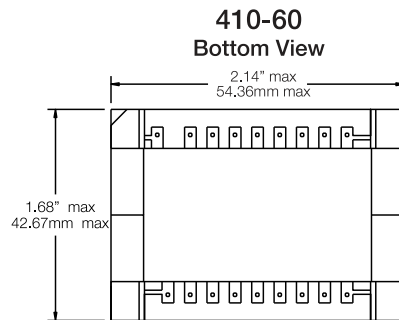
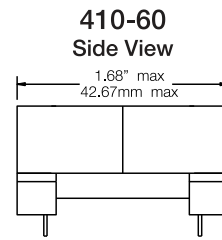
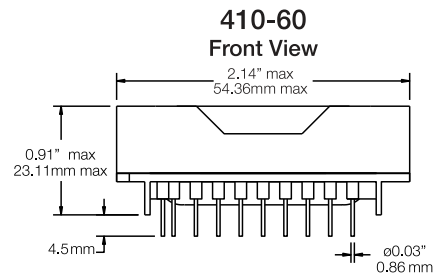
Power rating will increase significantly with potted transformer and external cooling available.

Schematics WCM410-88 and WCM410-70



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

Schematics WCM410-60 and WCM410-50



Dimensions:

Inches
mm

Tolerance:

Inches

x.xx ± 0.020"

x.xxx ± 0.005"

Millimeters

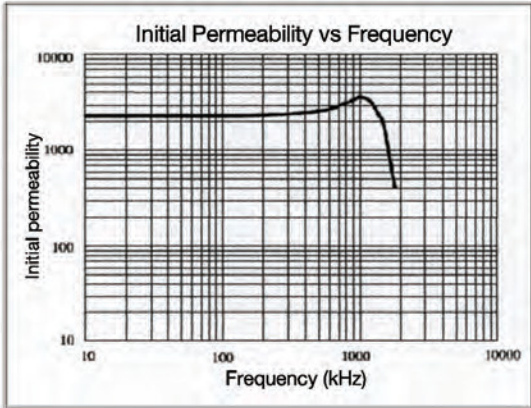
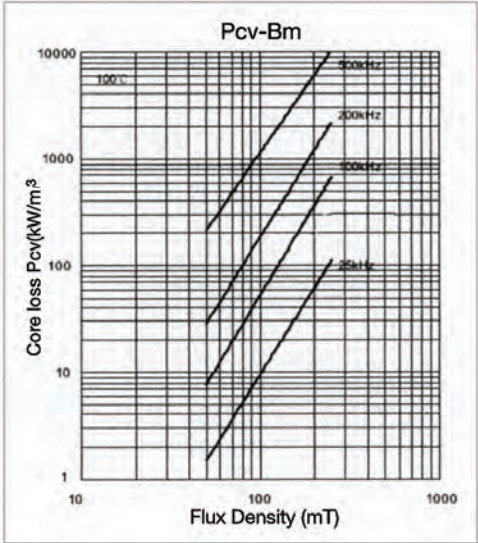
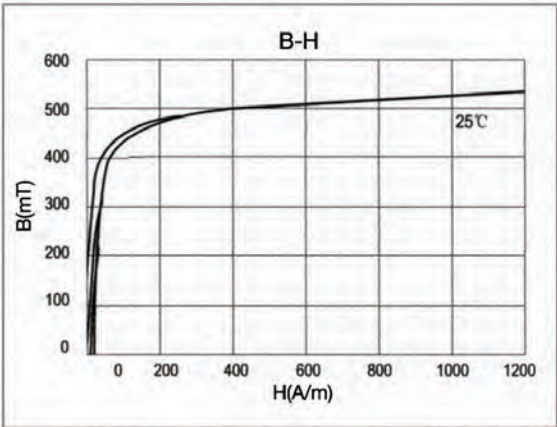
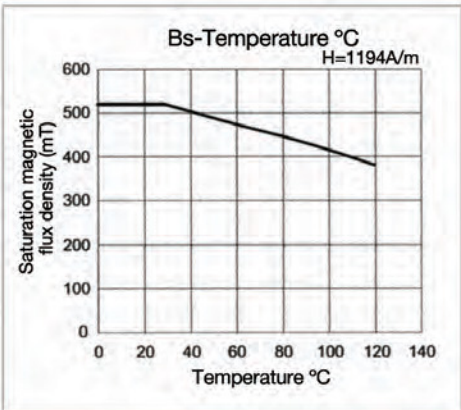
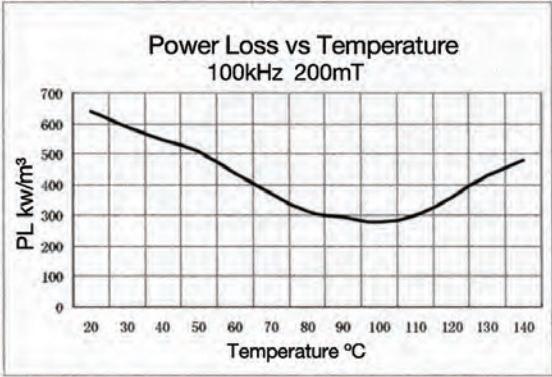
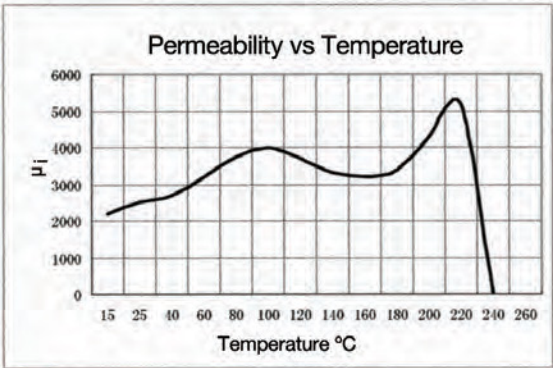
x.x ± 0.25mm

x.xx ± 0.13mm

Material Characteristics WCM-F100

Characteristics		Symbol	Unit	
Initial Permeability		μ_i	-	
			2500 $\pm 25\%$	
Saturation Flux Density at 1194 A/m		B_s	mT mT	25°C 100 °C
			520 420	
Remanence		B_r	mT	
			110	
Coercivity		H_c	A/m	
			13	
Power Loss	F=100 kHz	P_c	kw/m ³	25 °C
	B=200 mT		kw/m ³	80 °C
			kw/m ³	100 °C
			600 310 280	
Resistivity		ρ	$\Omega \bullet m$	
			7	
Curie Temperature		T_c	°C	
			>215	
Density		d	kw/m ³ *10 ³	
			4.9	

Graphs WCM-F100

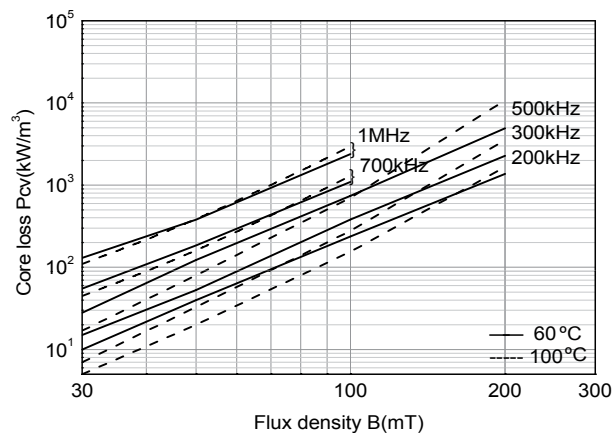
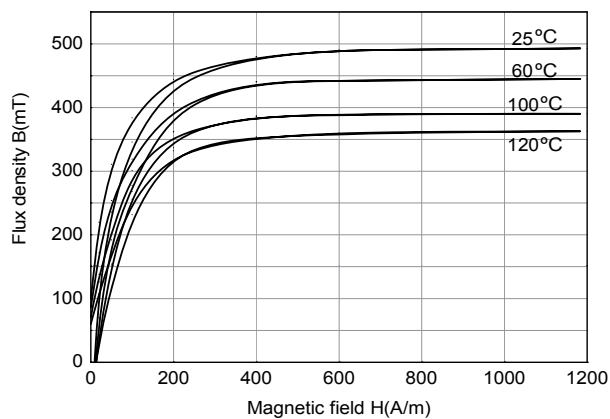
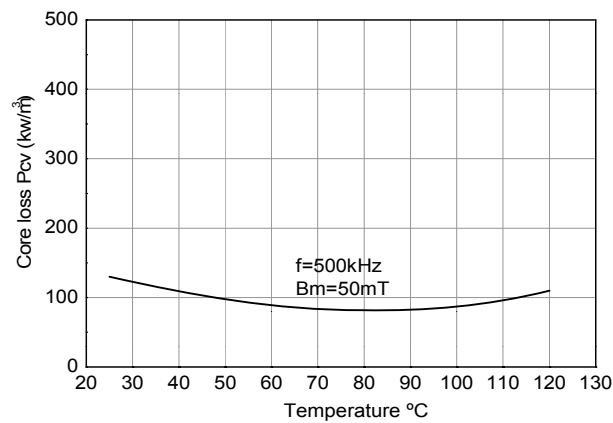
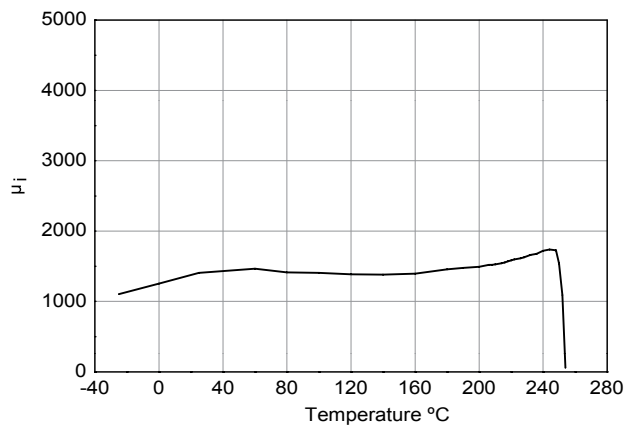


Material Characteristics WCM-F300

Characteristics		Symbol	Unit		
Initial Permeability		μi	-		1400 ±25%
Amplitude Permiability		μa	-		-
Saturation Flux Density at 1194 A/m		Bs	mT mT	25°C 100 °C	490 390
Remanence		Br	mT mT	25 °C 100 °C	100 70
Coercivity		Hc	A/m A/m	25 °C 100 °C	25 20
Core Loss	500 kHz 50 mT	Pcv	kw/m³	25 °C	130
			kw/m³	60 °C	80
			kw/m³	100 °C	80
			kw/m³	120 °C	110
			kw/m³	140 °C	-
Electrical Resistivity		ρ	Ω • m		220
Curie Temperature		Tc	°C		>250
Density		d	kw/m³		4.7x10³

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

Graphs WCM-F300



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