

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

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

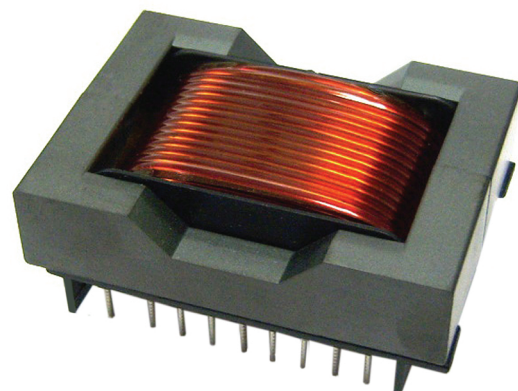
ENGINEERING DATA

Size 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

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.

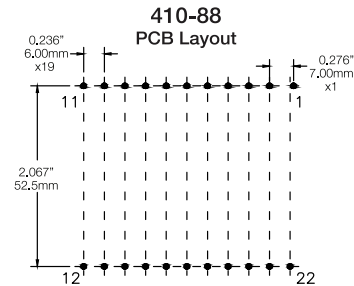
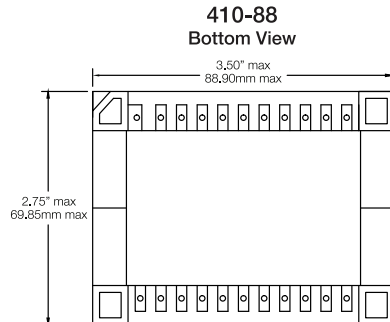
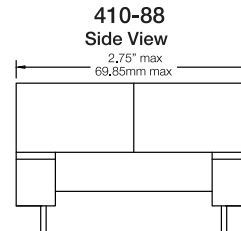
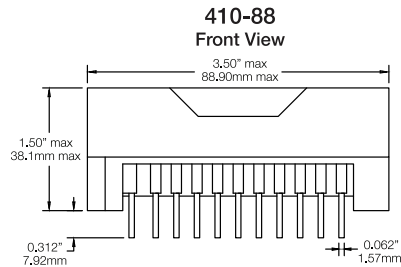
9001:2008
certified ISO

13485:2003
certified ISO



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

switch mode transformers



Tolerance:

Inches

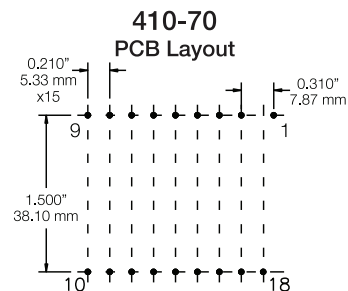
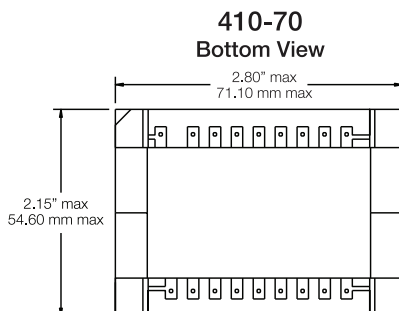
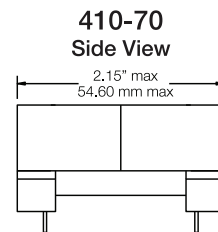
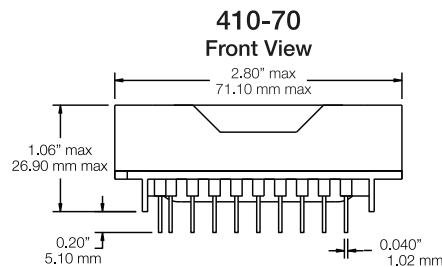
x.xx ± 0.020 "

x.xxx ± 0.005 "

Millimeters

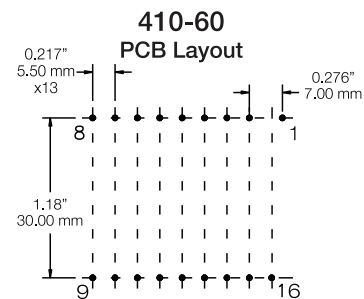
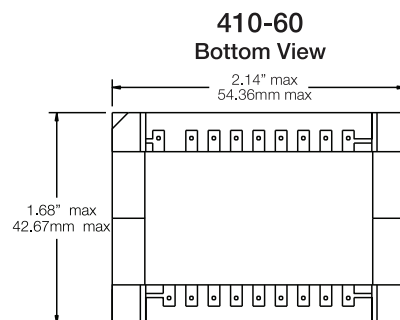
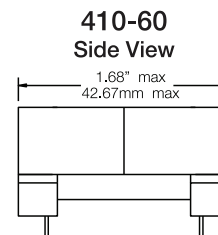
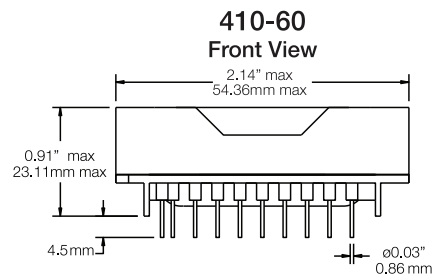
x.x ± 0.25 mm

x.xx ± 0.13 mm



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

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Tolerance:

Inches

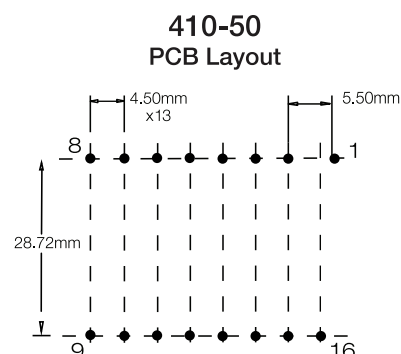
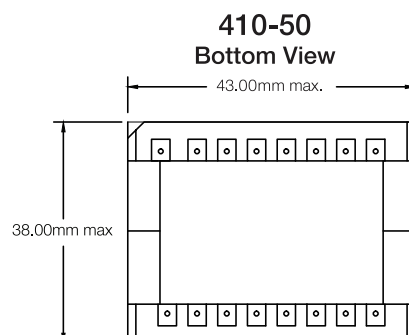
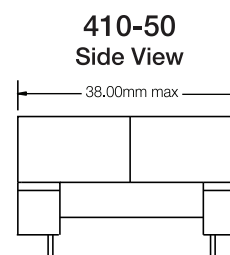
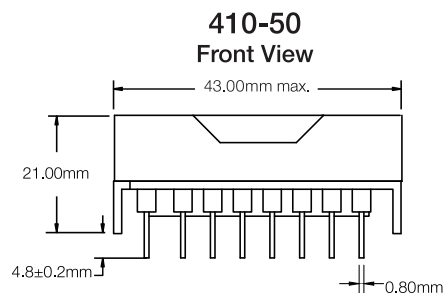
x.xx $\pm 0.020"$

x.xxx $\pm 0.005"$

Millimeters

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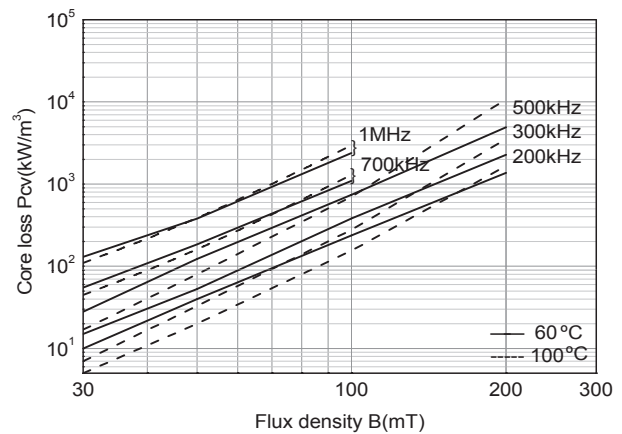
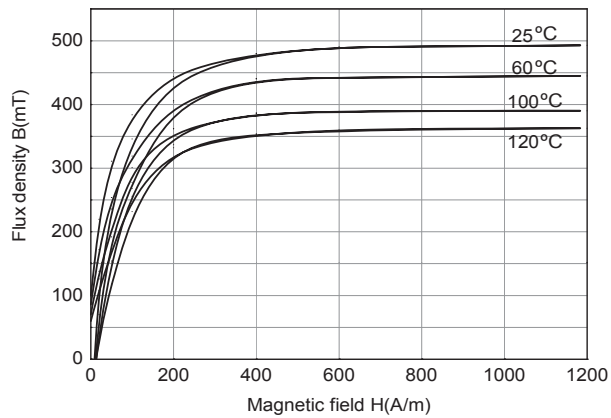
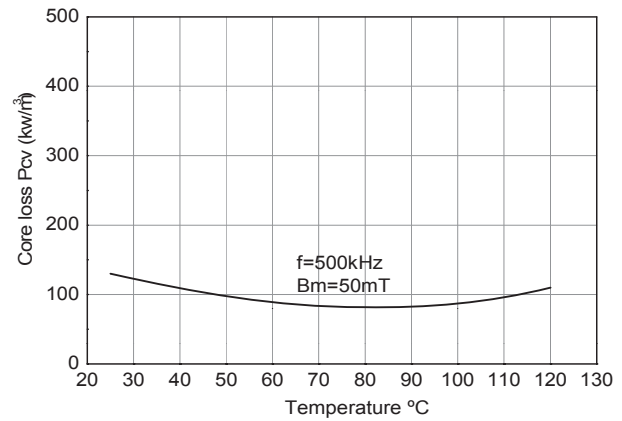
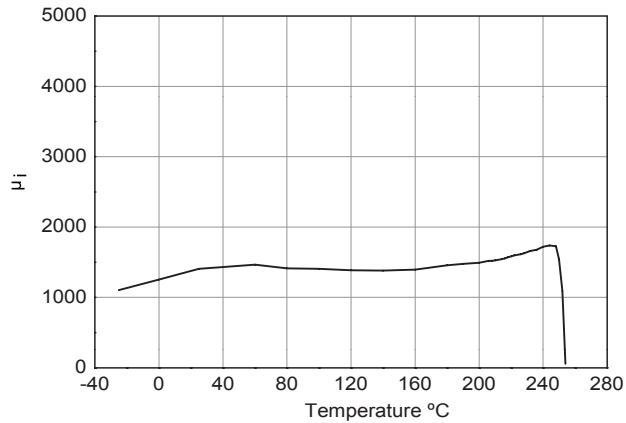
WCM-F300

Material Characteristics

Characteristics		Symbol	Unit		
Initial Permeability		μi	–		1400 ±25%
Amplitude Permiability		μa	–		–
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/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

WCM-F300



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