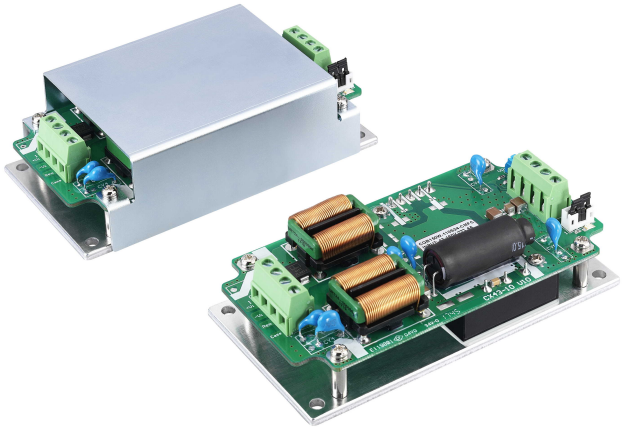
CHASSIS MOUNT
CQB150W-110S SERIES
150 WATT 4:1 INPUT DC-DC CONVERTERS

Railway System

FEATURES



* 150W Isolated Output
* Efficiency to 91%
* Fixed Switching Frequency
* 4:1 Input Range
* Regulated Outputs
* Remote On/Off
* Low No Load Power Consumption
* Over Temperature Protection
* Over Voltage/Current Protection
* Continuous Short Circuit Protection
* Shock & Viberation Meets EN50155 (EN61373)
* Safety Meets IEC/EN/UL 62368-1
* UL60950-1 2nd (Basic Insulation) Approval for DC Modules
* EN50155:2007 for EMC, Environmental and Characteristic
* Build-In EMI Filter
* Fire & Smoke Meets EN45545-2

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CQB150W-110S3V3□-CMFC CQB150W-110S3V3□-CMFD	43-160 VDC	3.3 VDC	0 mA	30.0 A	15 mA	1.03 A	87.5	30000μF
CQB150W-110S05□-CMFC CQB150W-110S05□-CMFD	43-160 VDC	5 VDC	0 mA	30.0 A	15 mA	1.53 A	89	30000μF
CQB150W-110S12□-CMFC CQB150W-110S12□-CMFD	43-160 VDC	12 VDC	0 mA	12.5 A	15 mA	1.50 A	91	12500μF
CQB150W-110S15□-CMFC CQB150W-110S15□-CMFD	43-160 VDC	15 VDC	0 mA	10.0 A	15 mA	1.50 A	91	10000μF
CQB150W-110S24□-CMFC CQB150W-110S24□-CMFD	43-160 VDC	24 VDC	0 mA	6.3 A	15 mA	1.56 A	88	6300μF
CQB150W-110S28□-CMFC CQB150W-110S28□-CMFD	43-160 VDC	28 VDC	0 mA	5.4 A	15 mA	1.56 A	88	5400μF
CQB150W-110S48□-CMFC CQB150W-110S48□-CMFD	43-160 VDC	48 VDC	0 mA	3.2 A	15 mA	1.56 A	89.5	1000μF

NOTE:
1. Nominal Input Voltage 110VDC
2. □ = N or None.
3. VR1 is Used for Output Voltage Adjustment.
4. Refer to Application Note for Thermal Resistance and Derating Informations.
5. TVS is Included for Input Surge Voltage Protection.
6. Recommend an External Fuse for Input Reverse Polarity Protection (Shunt Diode is Included Inside).

SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25℃ Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range ..... 110V 43-160V
Input Surge Voltage (100ms max.) ..... 110V..... 200Vdc max.
Under Voltage Lockout ..... 110Vin Power Up 41.5V
110Vin Power Down 38.5V
Positive Logic Remote On/Off (see note 4&5)

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.0% max.
Transient Response: 25% Step Load Change ..... <250usec
Trim Adj. Range (By VR1) ..... ±10%
Ripple & Noise, 20MHz BW
3V3/5V/12V/15V ..... 40mV RMS, 100mV pk-pk max.
24V&28V ..... 100mV RMS, 200mV pk-pk max.
48V ..... 150mV RMS, 300mV pk-pk max.
Temperature Coefficient ..... ±0.02%/°C max.
Short Circuit Protection ..... Continuous
Line Regulation (note1) ..... ±0.2% max.
Load Regulation (note2) ..... 5V ..... ±0.5% max.
Others ..... ±0.2% max.
Over Voltage Protection Trip Range, % Vo nom. 115-140%
Current Limit ..... 110%-160% Nominal Output
Start up Time ..... 100ms typ.
Hold up Time ..... See Application Note

NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 1uF ceramic capacitor across output.
4. Logic Compatibility ..... open collector ref to -input
Module on ..... >3.5Vdc to 160Vdc or open circuit
Module off ..... 0 to< 1.2Vdc
5. Suffix "N" to the model number with negative logic remote on/off
Module on ..... 0 to< 1.2Vdc
Module off ..... >3.5Vdc to 160Vdc or open circuit
6. Output connector CN3 wafer with TAIWAN KING PIN TERMINAL P110I series and mate with JST housing PH series or equivalent.
7. CN1 & CN2 connection: DINKLE EK500V-04P series or equivalent, suitable electric wire: 24~12AWG(IEC 0.5~2.5mm^2).

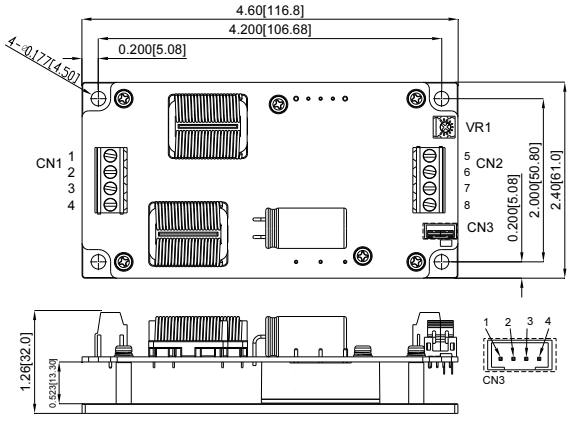
GENRAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage
Input/Output ..... 3000VDC min.
Input/Case ..... 2250VDC min.
Output/Case ..... 500VAC min.
Isolation Resistance ..... 10^8 Ohm min.
Isolation Capacitance (DC Module) ..... 1500pF typ.
Switching Frequency ..... 300KHz typ.
Operating Case Temperature ..... -40℃ to +100℃
Storage Temperature ..... -40℃ to +105℃
Thermal Shutdown, Case Temperature(DC Module) ..... 110℃ typ.
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HDBK-217F, GB, 25℃, Full Load ..... 600Khrs typ.
Safety ..... Meets UL62368-1
EMC ..... Meets EN50155(EN50121-3-2:2008)
with External Output Filter Meets EN50155(EN50121-3-2:2015)
Shock/Vibration ..... Meets EN50155(EN61373)
Environmental ..... EN50155(EN60068-2-1,2,30)
Case Material .... -CMFC ..... Aluminum Base
-CMFD ..... Aluminum Base and Aluminum Cover
Dimensions ..... -CMFC ..... 4.60x2.40x1.26 Inches (116.8x61.0x32.0 mm)
-CMFD ..... 4.60x2.49x1.35 Inches (116.8×63.4×34.2 mm)
Weight ..... -CMFC 215g
-CMFD 300g

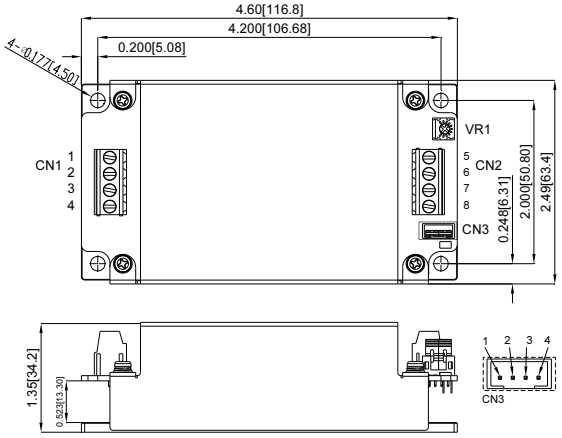
Case Dimensions:

All Dimensions In Inches (mm)
Tolerance Inches: X.XX=±0.02, X.XXX=±0.010
Millimeters: X.X=±0.5, X.XX=±0.25

CMFC



CMFD with Cover



CN1&CN2
PIN CONNECTION

Pin	Function
1	+V Input
2	-V Input
3	Remote
4	Case
5	+V Output
6	+V Output
7	-V Output
8	-V Output

CN3
PIN CONNECTION

Pin	Function
1	-V Output
2	-Sense
3	+Sense
4	+V Output