

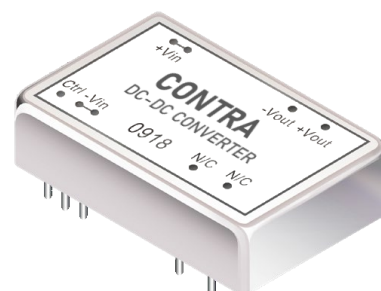
CYKB20 SERIES DC-DC Converter 20Watt

1600Vdc Isolated 4:1 Input Voltage Range



FEATURES :

- 20W DIL Package
- 4:1 Wide Input Voltage Range
- High Efficiency Up To 91%
- Regulated Output Types
- No Minimum Load Required
- Over Power and Short Circuit Protection
- Operating Temperature: -40°C To +87°C(with derating)
- UL94V-0 Package Material
- 100% Burned In
- 3 Years Warranty



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Selection Guide

Part Number	Input Voltage Range	Input Current		Output Voltage	Output Current	Efficiency	Maximum capacitor Load
		No-Load	Full-Load				
	Vdc	mA (typ)	mA (typ)	Vdc	mA (typ)	% (typ)	μF
CYKB20-24S05	9-36	7	958	5	4000	87	6800
CYKB20-24S12	9-36	7	938	12	1670	89	1200
CYKB20-24S15	9-36	7	934	15	1330	89	750
CYKB20-24S24	9-36	7	915	24	833	91	300
CYKB20-24D12	9-36	7	936	±12	±833	89	±820
CYKB20-24D15	9-36	7	934	±15	±665	89	±560
CYKB20-48S05	18-75	4	474	5	4000	88	6800
CYKB20-48S12	18-75	4	469	12	1670	89	1200
CYKB20-48S15	18-75	4	467	15	1330	89	750
CYKB20-48S24	18-75	4	463	24	833	90	300
CYKB20-48D12	18-75	7	468	±12	±833	89	±820
CYKB20-48D15	18-75	7	467	±15	±665	89	±560

Part Number

$\frac{\text{CYKB}}{\text{A}}$
 $\frac{20}{\text{B}}$
 $\frac{-}{\text{C}}$
 $\frac{24}{\text{D}}$
 $\frac{\text{S}}{\text{E}}$
 $\frac{05}{\text{E}}$

A: Series
 B: Output Power
 C: Input Voltage
 D: Single/Dual Output
 E: Output Voltage

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Input Specifications

Parameters	Conditions		Min	Typ	Max	Units
Input Voltage	24V Models		9		36	Vdc
	48V Models		18		75	
Input Surge Voltage (100 ms max.)	24V Models		-0.7		50	Vdc
	48V Models		-0.7		100	
Start-up Voltage	24V Models				9	Vdc
	48V Models				18	
Under Voltage Shutdown	24V Models			7.5		Vdc
	48V Models			16		
Start-up Time	Constant Resistive Load, Nominal Vin	Power-up	30			ms
		Remote ON/OFF	30			
Input Filter	All Models		Internal Pi type			
Remote ON/OFF (Ctrl PIN Refer To –Vin PIN)	Positive Logic	DC/DC ON	Open or 3.5 Vdc - 12 Vdc			
		DC/DC OFF	Short or 0 Vdc – 1.2 Vdc			
	Input Current Of Ctrl PIN		-0.5	0.5		mA
	Remote Off Input Current		3			

Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% Load	-2		+2	%
Line Regulation	Vin(min) to Vin(max) @100% Load	-0.2		+0.2	%
Load Regulation	0% Load to 100% Load	5V Output	-1	+1	%
		Other Outputs	-0.5	+0.5	
Load Cross Regulation	Asymmetrical Load 25% / 100% Load	Dual Output	-5.0	+5.0	%
Ripple & Noise (BW=20MHz)	With a 0.1uF MLCC	5Vout		100	mVp-p
		12Vout, ±12Vout		100	
		15Vout, ±15Vout		100	
		24Vout		150	
Transient Response Setting Time	25% Load Step Change		300	500	us
Transient Response Deviation	25% Load Step Change	-5	±3	+5	%
Temperature Coefficient		-0.02		+0.02	%/°C
Output Power Protection	% of Io, Hiccup mode, Auto-recovery	120	150	180	%
Short Circuit Protection	Continuous [Hiccup Mode] ,Auto-Recovery				
Over Voltage Protection	5Vout		6.2		Vdc
	12Vout		15		
	15Vout		18		
	24Vout		30		

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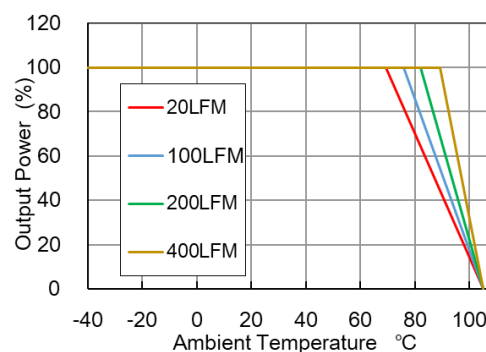
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General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Voltage	Input To Output (60sec)	1600			Vdc
	Input(Output) To Case (60sec)	1000			Vdc
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	100kHz, 1V			2200	pF
Switching Frequency	100% Load, Nominal Input	5V Output		250	KHz
		Other Output		330	
Operating Ambient Temperature (Power Derating See Derating Graph)	Nominal Vin, 100% Load	CYKB20-24S05	-40	51.2	°C
		CYKB20-48S05		55.9	
		CYKB20-24S12, CYKB20-24S15 CYKB20-24D12, CYKB20-24D15 CYKB20-48S12, CYKB20-48S15 CYKB20-48D12, CYKB20-48D15		60.5	
		CYKB20-24S24		69.4	
		CYKB20-48S24		65	
Thermal Impedance	20LFM			18	°C/W
	100LFM			14.7	
	200LFM			11.5	
	400LFM			8	
Maximum Case Temperature				105	°C
Storage Temperature		-55		125	°C
Humidity	Non Condensing	5		95	%
Cooling	Natural Convection				
Case Material	Copper				
Potting Material	Silicone (UL94-V0)				
MTBF	MIL-HDBK-217F@25°C (calculated)		4.47X10 ⁵		Hours
Weight			18		g
Dimensions	31.6 x 20.1 x 10.0				mm

Temperature Derating Graph



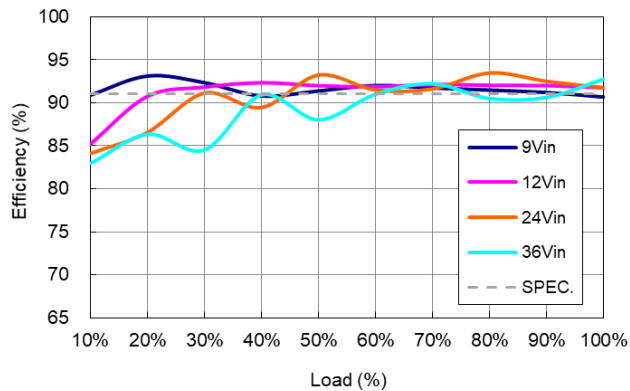
CYKB20-24S24

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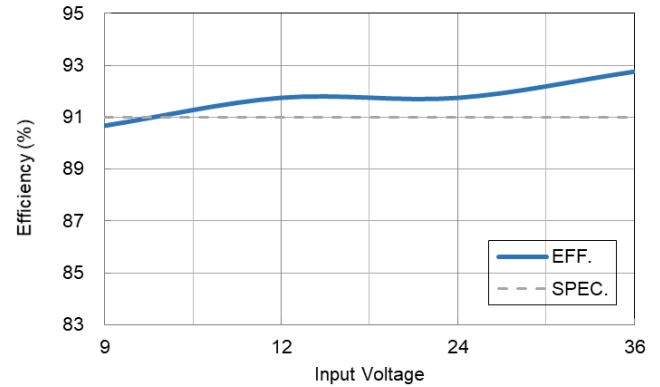
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Characteristic Curve

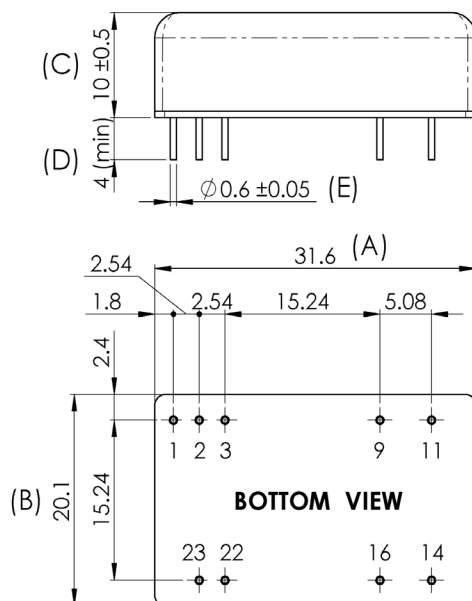


CYKB20-24S24



CYKB20-24S24

Dimensions



Unit : mm
Tolerance : XX.X ± 0.5 , XX.XX ± 0.25

PIN Assignment

Pin	Single	Dual	Diameter
1	Ctrl	Ctrl	0.6mm[0.024"]
2	-Vin	-Vin	0.6mm[0.024"]
3	-Vin	-Vin	0.6mm[0.024"]
9	NC	Com	0.6mm[0.024"]
11	NC	-Vout	0.6mm[0.024"]
14	+Vout	+Vout	0.6mm[0.024"]
16	-Vout	Com	0.6mm[0.024"]
22	+Vin	+Vin	0.6mm[0.024"]
23	+Vin	+Vin	0.6mm[0.024"]