

Make-Ps®

DC/DC CONVERTER

Single & Dual Output DC/DC Converter

Series LCD15
15Watt | DC-DC Converter



FEATURES:

- 15W DIL PACKAGE
- 2:1 WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- Remote Control:On/Off

APPLICATIONS:

- Wireless Network
- Telecom/Datacom
- Industry Control System
- Measurement Equipment
- Semiconductor Equipment

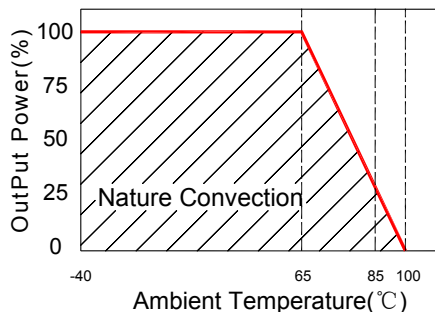


MODEL SELECTION CHART

Part Number	Input Voltage Vdc	Input Current		Output Voltage Vdc	Output Current Full Load (mA)	Efficiency %TYP
		No-Load (mA TYP)	Full Load (mA TYP)			
LCD15-12S3P3	9-18	120	1209	3.3	4000	84
LCD15-12S05	9-18	90	1488	5	3000	84
LCD15-12S12	9-18	40	1453	12	1250	86
LCD15-12S15	9-18	40	1453	15	1000	86
LCD15-12D12	9-18	40	1453	± 12	± 625	86
LCD15-12D15	9-18	40	1453	± 15	± 500	86
LCD15-24S3P3	18-36	50	654	3.3	4000	84
LCD15-24S05	18-36	65	774	5	3000	84
LCD15-24S12	18-36	20	710	12	1250	88
LCD15-24S15	18-36	20	710	15	1000	88
LCD15-24D12	18-36	20	718	± 12	± 625	87
LCD15-24D15	18-36	20	726	± 15	± 500	86
LCD15-48S3P3	36-75	40	327	3.3	4000	84
LCD15-48S05	36-75	40	372	5	3000	84
LCD15-48S12	36-75	15	363	12	1250	86
LCD15-48S15	36-75	15	355	15	1000	88
LCD15-48D12	36-75	15	359	± 12	± 625	87
LCD15-48D15	36-75	15	363	± 15	± 500	86

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Temperature Derating Graph



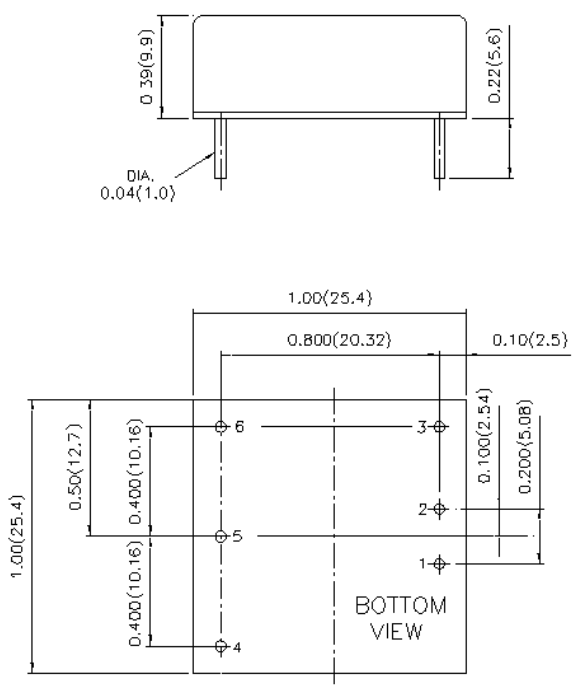
Input Specifications					
Parameters	Conditions	Min	Typ	Max	Units
Voltage Types				2:1	
Start-up voltage / under voltage shut down	12 Vin		9 / 8		VDC
	24 Vin		17.0 / 16.5		VDC
	48 Vin		33.0 / 30.5		VDC
Filter	Pi Network				
Protection	Fuse Recommended				

Output Specifications Temperature Coefficient: $\pm 0.05\% / ^\circ\text{C}$					
Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance				± 2	%
Output voltage adj. range	only for single output models			± 10	%
Line Regulation (Vmin – Vmax)	single output			0.5	%
	dual output			0.5	%
Load Regulation (25 %F.L– 100%F.L)	single output			0.5	%
	dual output models balanced load			1.0	%
Minimum load	required	0		10	%
Ripple and noise(20 MHz bandwidth)	with external capacitor see application note.			100	mVp-p
Output current limitation		at 150 % typ.of lout max., constant current			
Short circuit protection		automatic recovery			
Over voltage protection	3.3VDC	3.7		5.4	Vout
	5VDC	5.6		7.0	Vout
	12VDC	13.5		19.6	Vout
	15VDC	16.8		20.5	Vout
Start up time	nominal Vin and constant resistive load		450		ms
Transient response setting time	25% load step change		250		us
Max. capacitive load	3.3 & 5 VDC		1000		uF
	12 VDC		330		uF
	15 VDC		220		uF
	± 12 VDC		± 150		uF
	± 15 VDC		± 100		uF

General Specifications					
Parameters	Conditions	Min	Typ	Max	Units
Temperature ranges	Operating(with derating)	-40		+85	$^\circ\text{C}$
	Case temperature			+100	$^\circ\text{C}$
	Storage	-55		+125	$^\circ\text{C}$
Humidity	non condensing	5		95	%
Reliability, calculated MTBF	MIL-HDBK-217F, @ +25 $^\circ\text{C}$, ground benign	560000			Hours
Isolation voltage	For 60 seconds(Input/Output)			1500	VDC
Isolation capacity	Input/Output		1000		pF
Isolation resistance	Input/Output (500 VDC)	1000			M Ω
Remote On/Off	On	3.0 ... 12 VDC or open circuit			
	Off	0 ... 1.2 VDC or short circuit pin 6 and pin 2			
	Off idle current:		2.5		mA
Switching frequency (fixed)	pulse width modulation PWM		400		KHz
Case material		nickel coated copper			
Baseplate		non conductive FR4			
Potting material		epoxy (UL 94V-0 rated)			
Weight		15 g (0.53 oz)			
Soldering temperature		max. 265 $^\circ\text{C}$ / 10sec			

OUTLINE DRAWING

Package Style and Pinning (mm)



- 1. All dimensions in Inches (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
- 2. Pin pitch tolerance ±0.01(0.25)
- 3. Pin dimension tolerance ±0.004 (0.1)

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+ INPUT	+ INPUT
2	- INPUT	- INPUT
3	ON/OFF	ON/OFF
4	+VOUT	+VOUT
5	TRIM	COMMON
6	-VOUT	-VOUT

All specifications are typical at nominal input, nominal load and 25° C unless otherwise specified.
External, low ESR, 10 microfarad (minimum) capacitor across output is recommended for operation.

Make Power world-class design, development and manufacturing team stands ready to work with you to deliver the exact power converter you need for your demanding, large volume, OEM applications. And ... we ll do it on time and within budget

Our experienced applications and design staffs; quick-turn prototype capability; highly automated, SMT assembly facilities; and in-line SPC quality-control techniques combine to give us the unique ability to design and deliver any quantity of power converters to the highest standards of quality and reliability.

We have compiled a large library of DC/DC designs that are currently used in a variety of telecom, medical, computer, railway, aerospace and industrial applications. We may already have the converter you need.

Contact us. Our goal is to provide you the highest-quality, most cost-effective power converters available.

CUSTOM CAPABILITIES