

# DC 1500

S E R I E S

## 15 WATT 2:1 INPUT DC-DC CONVERTERS



### Features

- 15W Isolated Output
- Efficiency to 90%
- 2:1 Input Range
- Regulated Outputs
- Fixed Switching Frequency
- Input Under Voltage Protection
- Over Current Protection
- Remote ON/OFF
- Continuous Short Circuit Protection
- Without Tantalum Capacitors Inside
- CE Mark Meets 2004/108/EC
- Safety Meets UL60950-1, EN60950-1, and IEC60950-1

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	Capacitor Load max.
			MIN.	MAX.	NO LOAD	FULL LOAD		
DC-1510	9-18 VDC	3.3 VDC	0 mA	4000 mA	90 mA	1280 mA	85	4000uF
DC-1511		5 VDC	0 mA	3000 mA	85 mA	1453 mA	88	3000uF
DC-1512		12 VDC	0 mA	1250 mA	70 mA	1420 mA	88	1330uF
DC-1513		15 VDC	0 mA	1000 mA	70 mA	1420 mA	88	1000uF
DC-1517		±5 VDC	0 mA	±1500mA	45 mA	1470mA	85	1470uF
DC-1518		±12 VDC	0 mA	±625mA	45 mA	1436mA	87	660uF
DC-1519		±15 VDC	0 mA	±500mA	45 mA	1420mA	88	550uF
DC-1520	18-36 VDC	3.3 VDC	0 mA	4000 mA	50 mA	640 mA	86	4000uF
DC-1521		5 VDC	0 mA	3000 mA	50 mA	718 mA	89	3000uF
DC-1522		12 VDC	0 mA	1250 mA	20 mA	695 mA	90	1330uF
DC-1523		15 VDC	0 mA	1000 mA	20 mA	695 mA	90	1000uF
DC-1527		±5 VDC	0 mA	±1500mA	25 mA	726 mA	86	1470uF
DC-1528		±12 VDC	0 mA	±625mA	25 mA	710 mA	88	660uF
DC-1529		±15 VDC	0 mA	±500mA	25 mA	702 mA	89	550uF
DC-1530	36-75 VDC	3.3 VDC	0 mA	4000 mA	25 mA	320 mA	86	4000uF
DC-1531		5 VDC	0 mA	3000 mA	30 mA	359 mA	88	3000uF
DC-1532		12 VDC	0 mA	1250 mA	20 mA	347 mA	90	1330uF
DC-1533		15 VDC	0 mA	1000 mA	20 mA	351 mA	90	1000uF
DC-1537		±5 VDC	0 mA	±1500mA	20 mA	363 mA	86	1470uF
DC-1538		±12 VDC	0 mA	±625mA	20 mA	355 mA	88	660uF
DC-1539		±15 VDC	0 mA	±500mA	20 mA	351 mA	89	550uF

## Specifications

### INPUT SPECIFICATIONS:

Input Voltage Range.....	12V.....	9-18V
	24V.....	18-36V
	48V.....	36-75V
Under voltage lockout .....	12Vin power up: 8.4V, .....	power down: 8V
	24Vin power up: 17V, .....	power down: 16V
	48Vin power up: 34V, .....	power down: 32V
Input Surge Voltage (100mS max.)	12S / 12D.....	25Vdc max.
	24S / 24D.....	50Vdc max.
	48S / 48D.....	100Vdc max.
Input Filter .....	Standard.....	PI Type
	SMD.....	LC Type
Positive Logic Remote on/off Control:		
Logic Compatibility .....	CMOS or Open Collector TTL	
Module ON .....	>+5.5V to 75VDC or Open Circuit	
Module OFF .....	<1.2VDC	

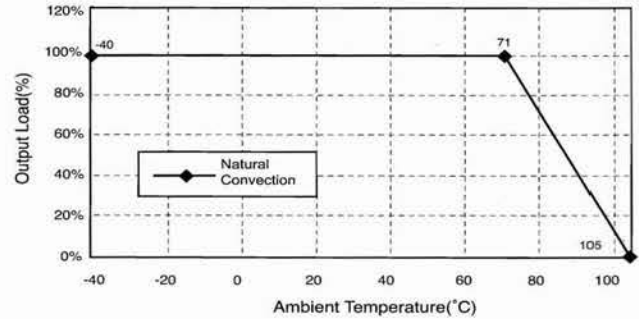
### OUTPUT SPECIFICATIONS:

Voltage Accuracy .....	±1.5% max.	
Voltage Balance (Dual) .....	±2.0% max.	
Transient Response: 25% Step Load Change .....	<500u sec.	
Ripple and Noise, 20MHz BW <sup>3</sup> .....	50mV p-p max.	
	SMD .....	120mV p-p max.
Temperature Coefficient .....	±0.03%/°C max.	
Short Circuit Protection .....	Continuous	
Line Regulation <sup>1</sup> .....	Single.....DIP±0.2% max., SMD±0.3% max.	
	Dual.....	±0.5% max.
Load Regulation <sup>2</sup> .....	Single.....DIP±0.2% max., SMD±0.5% max.	
	Dual.....	±1.0% max.
Cross Regulation (Dual output) Load cross variation 10%/100% .....	±5% max.	
Over Voltage Protection .....	Zener or TVS Clamp	
External Trim Adj. Range (single output models only) .....	±10%	
Current Limit .....	110% - 140% Nominal Output	
Start up time .....	20ms. max.	

### GENERAL SPECIFICATIONS:

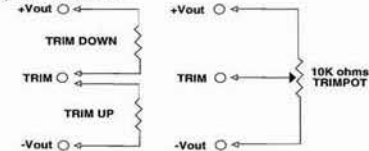
Efficiency .....	See Table	
Isolation Voltage .....	1500 VDC min.	
Isolation Resistance .....	10 <sup>9</sup> Ohms min.	
Isolation Capacitance .....	1000pF typ.	
Switching Frequency .....	350KHz typ.	
Operating Ambient Temperature Range .....	-40°C to +85°C	
Derating, Above 71°C .....	Linearly to Zero Power at +105°C	
Case Temperature <sup>4</sup> .....	105°C	
Cooling .....	Natural Convection	
Storage Temperature Range .....	-55°C to +125°C	
Humidity .....	95% RH max. Non condensing	
MTBF .....	MIL-STD-217-F, GB, 25°C, Full Load .....	1200k hrs typ.
Dimensions .....	DIP .....	1.00x1.00x0.4 inches (25.4x25.4x10.2mm)
	SMD .....	1.00x1.00x0.36 inches (25.4 x 25.4 x 9.2mm)
Case Material.....	Black Coated Copper with Non-Conductive Base	
Weight .....	.....	18.4g

## DC-1500 Series Derating Curve



### External Output Trimming

Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



### NOTE:

1. Measured From High Line to Low Line
2. Measured From Full Load to min. Load
3. The output ripple and noise is measured with 10uF tantalum and 1uF Ceramic capacitor across output.
4. Maximum case temperature under any operating condition should not be exceeded 105°C.
5. Suffix "S" to the Model Number with SMD packages.

### PIN CONNECTION

Pin	DIP Function	
	Single	Dual
1	+Input	+Input
2	- Input	- Input
3	+V Output	+V Output
4	Trim	Common
5	-V Output	-V Output
6	Remote	Remote

## SIZE

All Dimensions in Inches(mm)  
 Tolerance Inches: .xx= ±0.04, .xxx= ±0.10  
 Millimeters: x= ±1.0, .xx= ±0.25

