

PCB-MOUNT DC-DC CONVERTER ENCAPSULATED MODULES DIP PACKAGE 2-3W REGULATED SINGLE OUTPUT DHSR020 SERIES



FEATURES:

- SINGLE IN LINE PACKAGE
- WIDE INPUT RANG
- HIGH EFFICIENCY
- NO EXTERNAL COMPONENTS REQUIRED
- 3000VDC ISOLATION
- 100% BURNED IN
- INTERNAL FILTERING
- UL-94V0 PACKAGE METERIAL
- RoHS COMPLIANT

SPECIFICATION

INPUT SPECIFICATION

Input Range: 2:1 or 4:1 Input Range.

See Ratings Chart.

Input Current: Various with input range and load.

See Ratings Chart.

Input Filter: Capacitor Type.

Isolation Voltage: 3000VDC min.

Isolation Resistance: 10⁹ ohm min.

Isolation Capacitance: 80pF max.

EMI: Meet Conducted and Radiated EN550022 Class B.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.

Output Current: See Ratings Chart.

Voltage Setpoint Accuracy: ±2.0% max.

Line Regulation: ±0.5% max.

Load Regulation: +/-0.5% typ.

Minimum Load: 20% of Full load.

Noise & Ripple (20MHz BW): 100mVp-p max.

Output 3.3V: 50mVp-p max.

Short Circuit Protection: Continuous.

Short Circuit Restart: Automatic.

Over Load Protection: 150% typ.

GENERAL SPECIFICATION

Efficiency: 70% min. See Ratings Chart.

Switching Frequency: 100KHz min

Transient Response: 200uS max. at 25% step load change.

Case: Non-Conductive Plastic.

Operating Temperature: -40°C to +71°C.

Case Temperature: +95°C max.

Storage Temperature: -55°C to +105°C.

Cooling: Free-Air convection.

Humidity: 95% max.

MTBF: >900,000 hours. MIL-HDBK-217F @25°C.

NOTE: (1) All measurements are at nominal line, full load, and +25°C unless otherwise specified.

(2) Ripple & Noise: Measured with 1uF ceramic capacitor connected to the output pins.

(3) Load Regulation is for output load current change from 20% to 100%.

(4) 3000VDC for 3 seconds.

(5) Due to requests in market and advances in technology, specifications subject to change without notice.

INPUT/OUTPUT & VOLTAGE/ CURRENT RATINGS CHART

2009/07/22

SINGLE OUTPUT

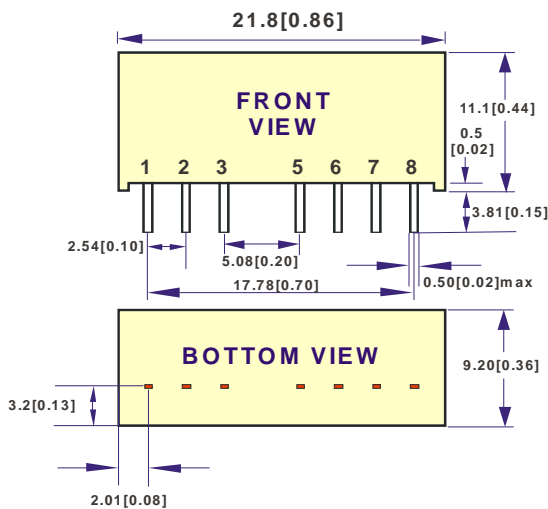
MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT VO1(Vdc)	OUTPUT VO1(mA)	EFF(%)	Isolation (Vdc)
		N. L. (mA)	F.L.				
DHSR020-05B-S033500	4.5-9	50	516	3.3	500	64	3000
DHSR020-05B-S050400	4.5-9	50	555	5	400	72	3000
DHSR020-05B-S090222	4.5-9	50	540	9	222	74	3000
DHSR020-05B-S120150	4.5-9	50	500	12	150	72	3000
DHSR020-05B-S150120	4.5-9	50	500	15	120	72	3000
DHSR020-12B-S033500	9-18	30	205	3.3	500	67	3000
DHSR020-12B-S050400	9-18	20	215	5	400	78	3000
DHSR020-12B-S090222	9-18	20	225	9	222	74	3000
DHSR020-12B-S120168	9-18	20	209	12	168	80	3000
DHSR020-12B-S150133	9-18	20	209	15	133	80	3000
DHSR020-12B-S240083	9-18	20	213	24	83	78	3000
DHSR020-24B-S033500	18-36	12	98	3.3	500	71	3000
DHSR020-24B-S050400	18-36	12	110	5	400	76	3000
DHSR020-24B-S090222	18-36	13	111	9	222	75	3000
DHSR020-24B-S120168	18-36	11	104	12	168	80	3000
DHSR020-24B-S150133	18-36	11	105	15	133	79	3000
DHSR020-24B-S240083	18-36	11	107	24	83	78	3000
DHSR020-48B-S033500	36-75	8	52	3.3	500	67	3000
DHSR020-48B-S050400	36-75	8	56	5	400	74	3000
DHSR020-48B-S090222	36-75	8	55	9	222	75	3000
DHSR020-48B-S120168	36-75	8	51	12	168	82	3000
DHSR020-48B-S150133	36-75	8	54	15	133	77	3000
DHSR020-48B-S240083	36-75	8	54	24	83	77	3000

NOTE: (1) Input current at nominal input voltage.

(2) Efficiency at nominal input voltage, full load

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 4.8g



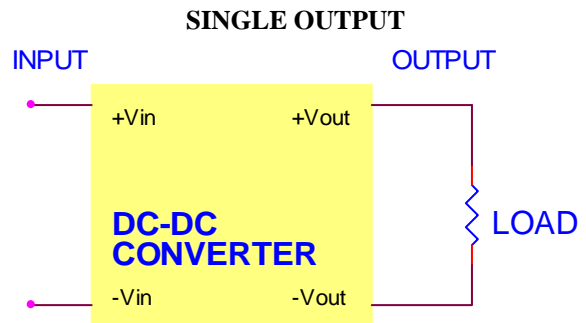
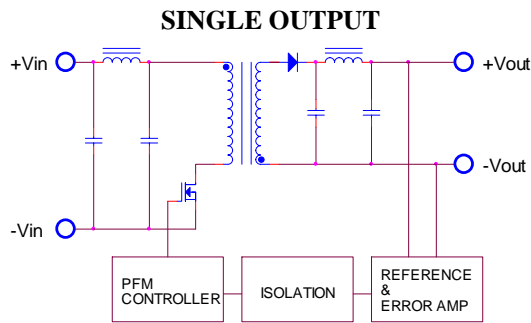
PIN ASSIGNMENT

PIN NO.	SINGLE
1	-Vin
2	+Vin
3	Remote On/Off
5	NC
6	+Vout
7	-Vout
8	NC

Remote On/Off Control

Parameter	Min	Max
Supply On	Under 1 VDC or Open Circuit	
Supply Off	4VDC	
Standby Input Current		0.2mA
Control Input Current(On)		-0.4mA
Control Input Current(Off)		1mA
Control Common	Referenced to -Vin (pin 1)	

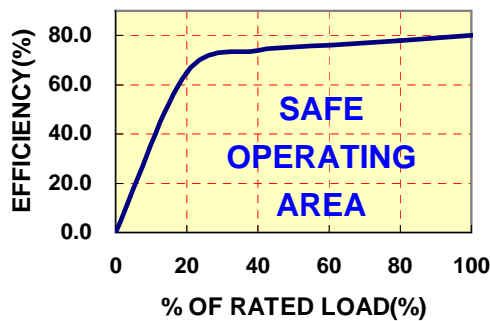
SIMPLIFIED SCHEMATIC & TYPICAL APPLICATIONS



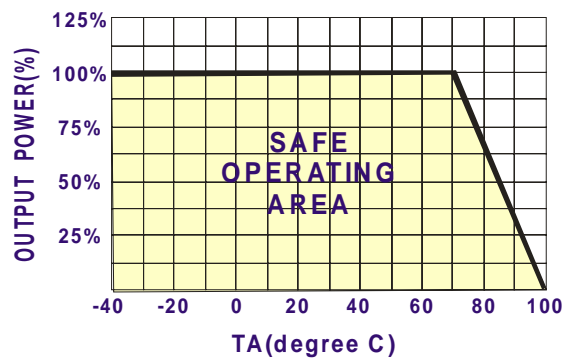
TYPICAL PERFORMANCE CURVES

Specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage, rated output current unless otherwise specified.

OUTPUT LOAD VS EFFICIENCY



TEMPERATURE DERATING



INPUT FUSE SELECTION GUIDE

4.5-9V INPUT VOLTAGE(VDC)	9-18V INPUT VOLTAGE(VDC)	18-36V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
2000mA Slow-Blow Type	1000mA Slow-Blow Type	500mA Slow-Blow Type	200mA Slow-Blow Type

NOTE: (1) Certain applications may require the installation of external fuse in front of the input.

(2) No external capacitance is required for operation: To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required. External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise. Additional output capacitance may be added for increased filtering, but should not exceed 220uF. We Can Offer EMC-Filter According To EN55011/22 Class B.

(3) Negative Outputs: A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.