

PCB-MOUNT DC-DC CONVERTER ENCAPSULATED MODULES DIP PACKAGE 1W UNREGULATED SINGLE & DUAL OUTPUT DHDA010 SERIES



FEATURES:

- DUAL IN LINE PACKAGE
- HIGH EFFICIENCY
- NO EXTERNAL COMPONENTS REQUIRED
- INTERNAL FILTERING
- 100% BURNED IN
- OPERATING TEMP. -40°C to +85°C
- UL-94V0 PACKAGE MATERIAL
- FUSE BUILT-IN
- RoHS COMPLIANT

SPECIFICATION

INPUT SPECIFICATION

Input Range: +/-10% max. See Ratings Chart.

Input Current: Various with input range and load.
See Ratings Chart.

Input Filter: Capacitor Type.

Isolation Voltage: 1500VDC or 3000VDC min.

Isolation Resistance: 10⁹ ohm min.

Isolation Capacitance: 80pF max.

Fuse Rated: 1A-1.5A Built-in.

EMI: Meet Conducted and Radiated EN550022 Class A.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.

Output Current: See Ratings Chart.

Voltage Setpoint Accuracy: ±2.0% max.

Line Regulation: ±1.2% max.

Load Regulation: +/-8% max.

Minimum Load: 10% of Full load.

Noise & Ripple (20MHz BW): 100mVp-p max.
Output=3.3V 50mVp-p max.

Short Circuit Protection: Momentary.

GENERAL SPECIFICATION

Efficiency: 70-82% 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 +85°C.

Case Temperature: +95°C max.

Storage Temperature: -55°C to +125°C.

Cooling: Free-Air convection.

Humidity: 95% max.

MTBF: >2,900,000 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) Line Regulation is for a 1.0% change in input Voltage.

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

(5) 3000VDC for 3 seconds.

(6) 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.				
DHDA010-3.3A-S033303	3.3	43	403	3.3	303	75	3000
DHDA010-3.3A-S050200	3.3	60	428	5	200	71	3000
DHDA010-05A-S050200	5	26	260	5	200	77	3000
DHDA010-05A-S090110	5	27	260	9	110	77	3000
DHDA010-05A-S120084	5	26	253	12	84	79	3000
DHDA010-05A-S150067	5	28	253	15	67	79	3000
DHDA010-12A-S050200	12	20	109	5	200	76	3000
DHDA010-12A-S090110	12	20	105	9	110	79	3000
DHDA010-12A-S120084	12	20	102	12	84	82	3000
DHDA010-12A-S150067	12	20	102	15	67	82	3000
DHDA010-24A-S050200	24	8	54	5	200	77	3000
DHDA010-24A-S090110	24	8	54	9	110	77	3000
DHDA010-24A-S120084	24	8	54	12	84	77	3000
DHDA010-24A-S150067	24	7	52	15	67	80	3000

DUAL OUTPUT

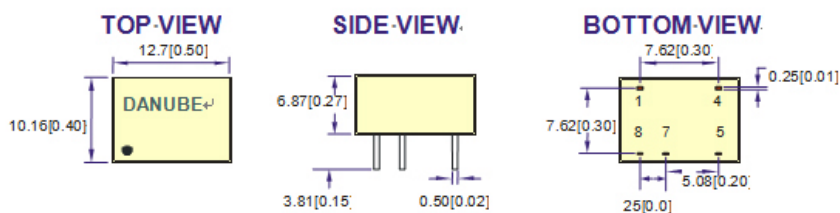
MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT (Vdc)		OUTPUT (mA)		EFF(%)	Isolation (VDC)
		N. L. (mA)	F.L.	+VO1	-VO2	+VO1	-VO2		
DHDA010-05A-D050E	5	30	275	+5	-5	+100	-100	73	3000
DHDA010-05A-D120I	5	30	248	+12	-12	+42	-42	81	3000
DHDA010-05A-D150K	5	30	260	+15	-15	+34	-34	77	3000
DHDA010-12A-D050E	12	15	113	+5	-5	+100	-100	74	3000
DHDA010-12A-D120I	12	15	102	+12	-12	+42	-42	82	3000
DHDA010-12A-D150K	12	15	108	+15	-15	+34	-34	77	3000
DHDA010-24A-D050E	24	9	56	+5	-5	+100	-100	74	3000
DHDA010-24A-D120I	24	8	52	+12	-12	+42	-42	80	3000
DHDA010-24A-D150K	24	7	54	+15	-15	+34	-34	77	3000

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

(2) Efficiency at nominal input voltage, full load

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 1.7g

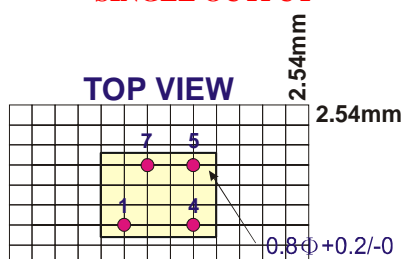


PIN ASSIGNMENT

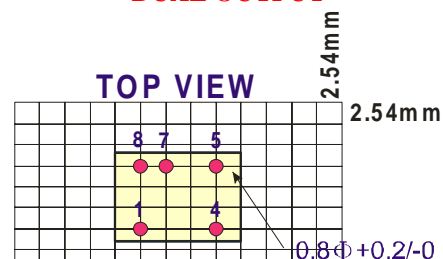
PIN NO.	SINGLE	DUAL
1	-Vin	-Vin
4	+Vin	+Vin
5	+Vout	+Vout
7	-Vout	COMMON
8	NP	-Vout

NOTE: 7.62[0.30] for 24V and 48V input Voltage

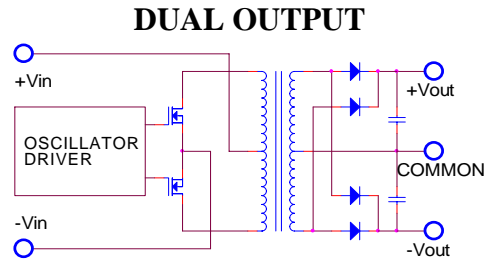
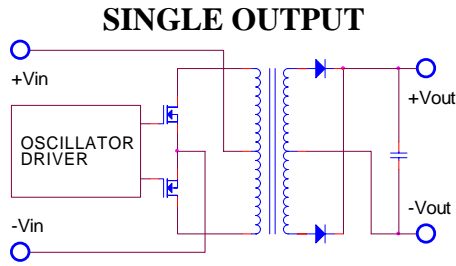
SINGLE OUTPUT



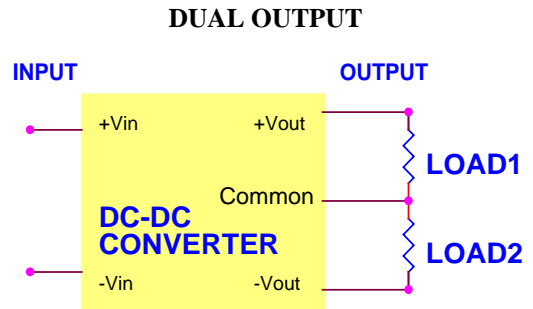
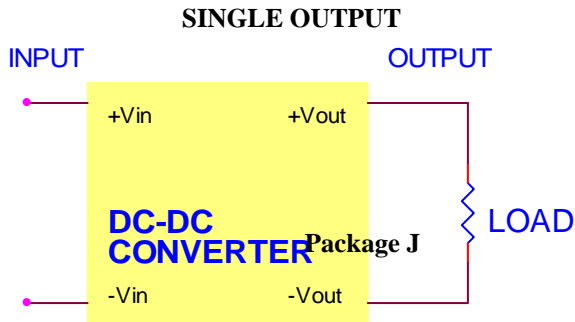
DUAL OUTPUT



SIMPLIFIED SCHEMATIC



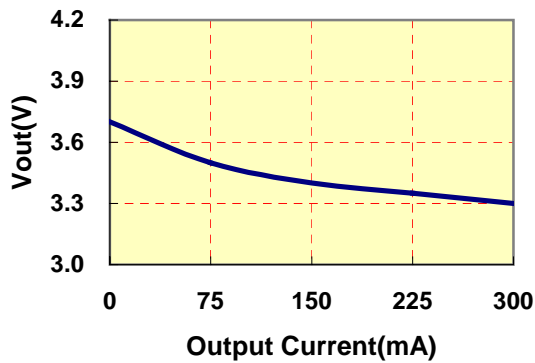
TYPICAL APPLICATIONS



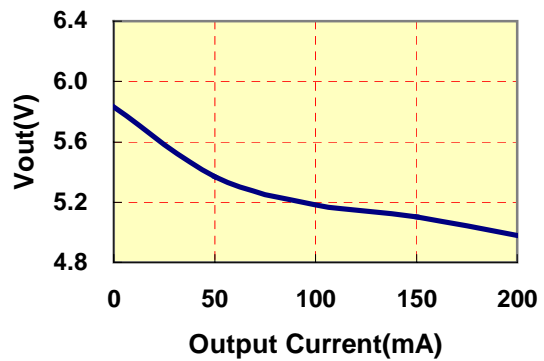
TYPICAL PERFORMANCE CURVES

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

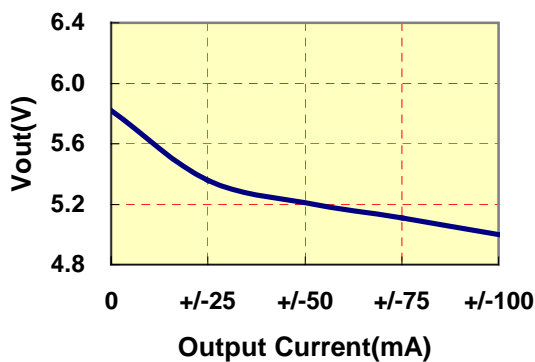
VOUT VS LOAD(3.3Vout Models)



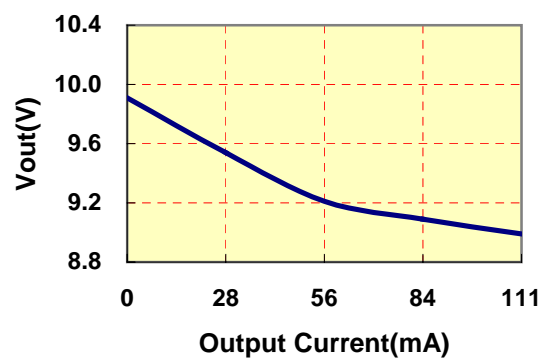
VOUT VS LOAD(5Vout Models)



VOUT VS LOAD(+/-5Vout Models)



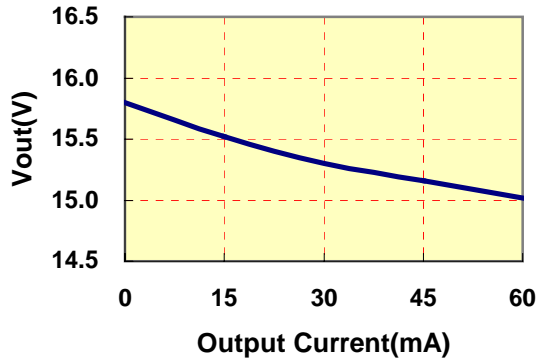
VOUT VS LOAD(9Vout Models)



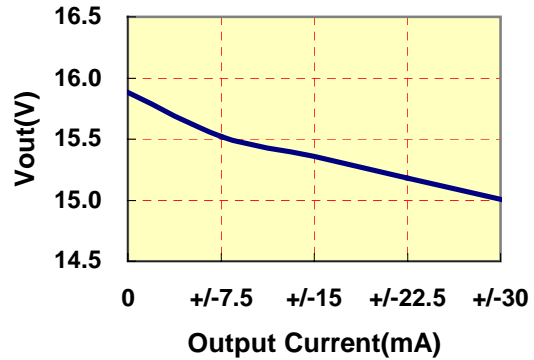
TYPICAL PERFORMANCE CURVES

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

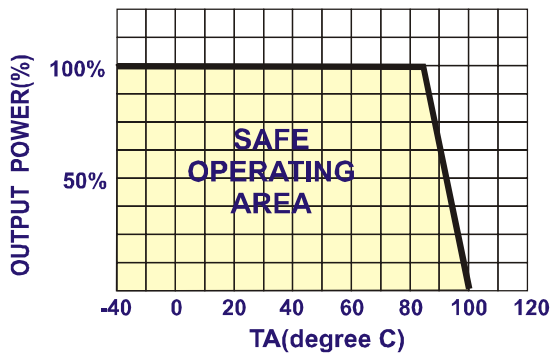
VOUT VS LOAD(15Vout Models)



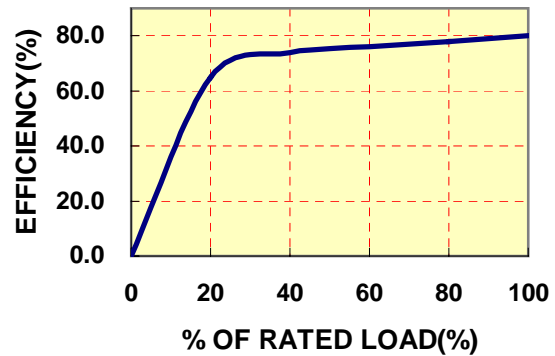
VOUT VS LOAD(+/- 15Vout Models)



DERATING CURVE

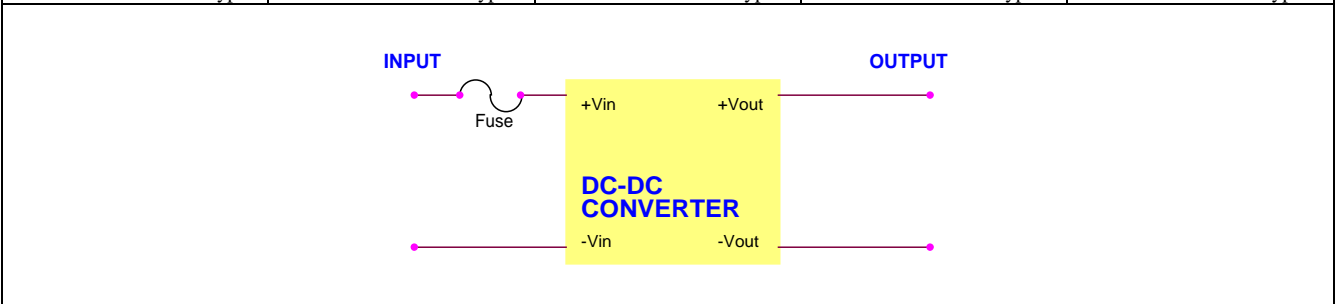


EFFICIENCY VS LOAD



INPUT FUSE SELECTION GUIDE

2.7-3.6V INPUT VOLTAGE(VDC)	4.5-5.5V INPUT VOLTAGE(VDC)	10.8-13.2V INPUT VOLTAGE(VDC)	21.6-26.4V INPUT VOLTAGE(VDC)	43.2-52.8V INPUT VOLTAGE(VDC)
1000mA Slow-Blow Type	400mA Slow-Blow Type	170mA Slow-Blow Type	90mA Slow-Blow Type	50mA Slow-Blow Type



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

(2) External capacitance requirement: Output filtering is required for operation. A minimum of 10uF is needed. Output capacitance may be increased for additional filtering, not to exceed 220uF. To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 250KHz is required. 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.