



2 Watt, Unregulated DC/DC Converters Series DV2E-SH7



Features

- SIP Package
- Isolation Voltage 5,6K VDC / 4K VAC
- Efficiency up to 81%
- Operating Temperature Range -40°C to +85°C
- RoHS Compliance
- Industrial Standard Pin-out

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [mA] MAX.	OUTPUT CURRENT [mA] MIN.	EFFICIENCY [%] TYP.	LOAD REGULATION [%] MAX.	MAX. CAPACITIVE LOAD [μ F]
DV2E05D05SH7	5 (4,5 – 5,5)	± 5	± 200	± 4	76	± 13	220
DV2E05D12SH7		± 12	± 83	$\pm 1,7$	79	± 10	220
DV2E05D15SH7		± 15	± 67	$\pm 1,3$	80	± 10	220
DV2E05S03SH7		3,3	606	12,1	72	± 14	470
DV2E05S05SH7		5	400	8	76	± 13	470
DV2E05S12SH7		12	167	3,3	79	± 11	470
DV2E05S15SH7		15	133	2,7	80	± 10	470
DV2E12D05SH7	12 (10,8 – 13,2)	± 5	± 200	± 4	77	± 11	220
DV2E12D12SH7		± 12	± 83	$\pm 1,7$	79	± 10	220
DV2E12D15SH7		± 15	± 67	$\pm 1,3$	79	± 9	220
DV2E12S03SH7		3,3	606	12,1	74	± 14	470
DV2E12S05SH7		5	400	8	78	± 12	470
DV2E12S12SH7		12	167	3,3	81	± 9	470
DV2E12S15SH7		15	133	2,7	81	± 9	470
DV2E24D05SH7	24 (21,6 – 26,4)	± 5	± 200	± 4	76	± 9	220
DV2E24D12SH7		± 12	± 83	$\pm 1,7$	76	± 8	200
DV2E24D15SH7		± 15	± 67	$\pm 1,3$	78	± 8	220
DV2E24S03SH7		3,3	606	12,1	72	± 10	470
DV2E24S05SH7		5	400	8	75	± 9	470
DV2E24S12SH7		12	167	3,3	77	± 7	470
DV2E24S15SH7		15	133	2,7	79	± 7	470

Note: other models on request.

INPUT SPECIFICATIONS:

Input Voltage Range.....		see table
Input Current (no load)	5V input	70mA typ.
	12V input	30mA typ.
	24V input	20mA typ.
Input Filter		L-C Filter

OUTPUT SPECIFICATIONS:

Output Voltage Accuracy.....	Vin-N, Max. Load	±4,0% max.
Balance Regulation	Vin-N, Max. Load	±1,0% max.
Temperature Drift Coefficient.....		±0,02%/°C max.
Ripple & Noise, 20 MHz BW.....		120mVp-p max.
Line Regulation (Vin-L to Vin-H @ Max. Load)		±1,5% max.
Load Regulation(Io = 20% to 100% Load)		see table.
Short Circuit Protection		Continuous, Auto-recovery

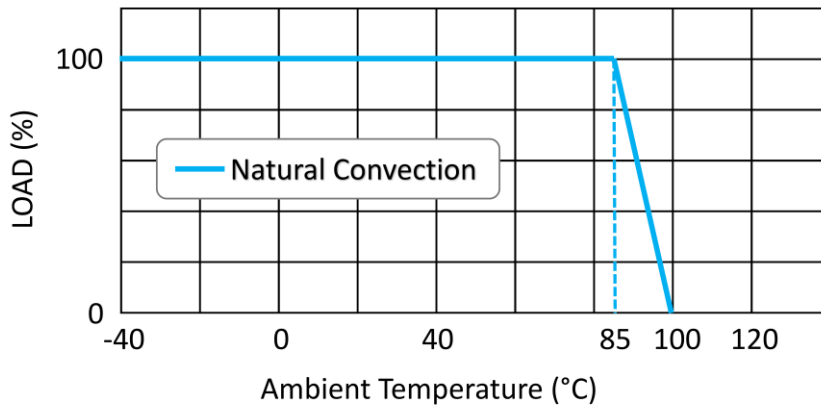
GENERAL SPECIFICATIONS:

Isolation Voltage I/O	Tested for 1 minute	5600VDC / 4000VAC min.
Isolation Resistance I/O.....		10 GΩ min.
Isolation Capacitance I/O		20pF max.
Switching Frequency		50KHz typ.
Operating Temperature Range		-40°C to +85°C
Derating above 85°C		see Derating Graph
Cooling		Free-Air Convection
Storage Temperature Range		-55°C to +125°C
MTBF		2.000.000 hours typ.
Dimensions		19,50 x 9,80 x 12,50 mm
Case Material		Non-Conductive Plastic (UL94-V0)
Weight.....		5g typ.

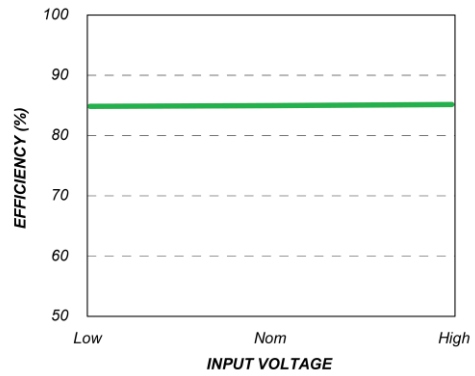
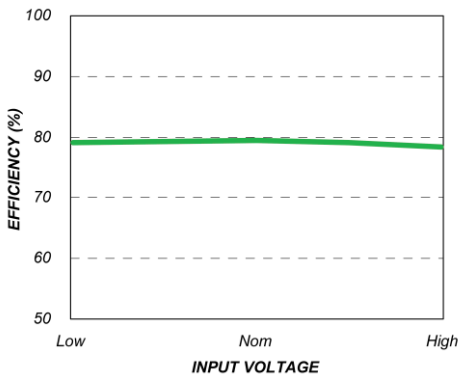
Note:

- 1) All specifications are measured at nominal input voltage, constant resistive load between Min. and Max. output current, and probe bandwidth should be under 20MHz, Ta = +25°C.
- 2) When the Load is at No-Load or lower than Min. output current, the DC/DC converters will not be damaged; however, all the parameters may be not reaching all specifications listed.
- 3) Output Ripple & Noise Test please refer to Dev's proposed test-method.
- 4) Load Regulation and Line Regulation calculation please refer Dev's proposed formula.
- 5) An external fuse is needed at the front end of DC/DC converters for a protection as a recommended settlement in order to avoid a surge current or a maximum input current.
- 6) "Vin-H" means "Vin-High", "Vin-N" means "Vin-Nominal", and "Vin-L" means "Vin-Low".
- 7) The total Capacitive Loads of output should be lower than the value written above.

Derating Curve

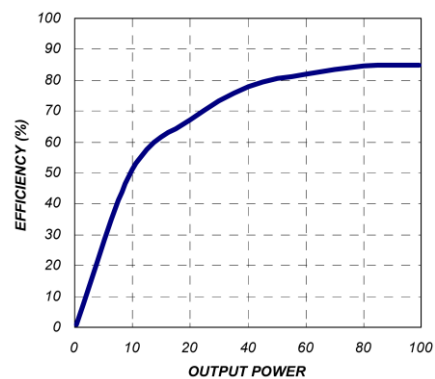
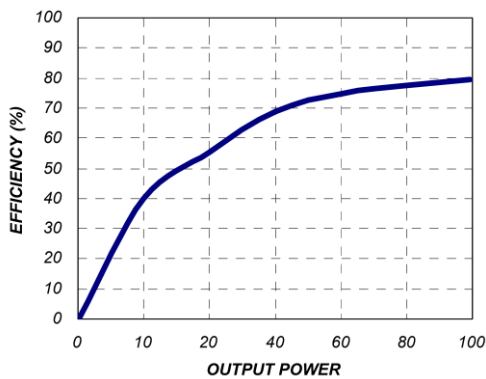


Efficiency Curve



Input Voltage vs. Efficiency, Vo= 3.3V, 5V & ±5V

Input Voltage vs. Efficiency, Other Output Voltages



Output Power vs. Efficiency, Vo= 3.3V, 5V & ±5V

Output Power vs. Efficiency, Other Output Voltages

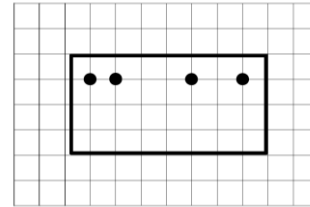
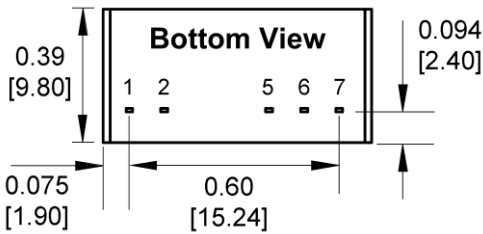
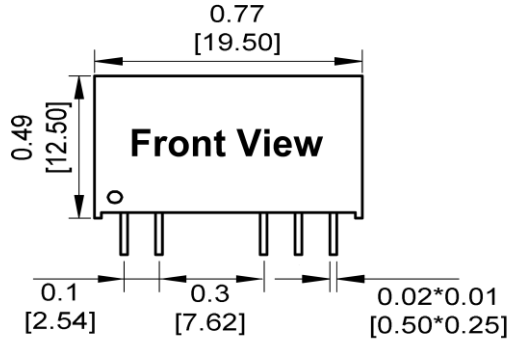
Note:

All dimensions in inch [mm]

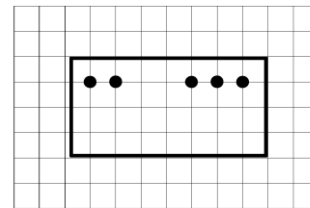
Tolerance : XX.X± 0.01 [XX.X±0.25]
 XX.XX± 0.01 [XX.XX±0.25]
 XX.XXX± 0.005 [XX.XX±0.13]

Pin pitch tolerance ±0.01 [±0.25]

Pin dimension tolerance ±0.004 [±0.1]



Single Output



Dual Output

Grid : 0.1 inch / 2.54 mm
 Dot(Drill Hole): Ø0.8 +0.2 / -0 mm

Pin	Function
Dual Output	
1	+Vin
2	-Vin
5	-Vout
6	Common
7	+Vout

Pin	Function
Single Output	
1	+Vin
2	-Vin
5	-Vout
6	No Pin
7	+Vout