




- SINGLE OUTPUT UP TO 20A
DUAL OUTPUTS TOTAL CURRENT UP TO 15A
UP TO 100% LOAD IMBALANCE
- INDUSTRY STANDARD FOOTPRINT
- ADJUSTABLE OUTPUT VOLTAGE,
INDEPENDENTLY REGULATED OUTPUTS
- NO MINIMUM LOAD
- HIGH EFFICIENCY UP TO 90%
- COMPACT 2.40 X 2.28 X 0.50 INCH PACKAGE
- HALT TESTED

HEC75-SERIES DC/DC converters provide up to 75 watts of output power in an industry standard half-brick package and footprint. These units are specifically designed to meet the power needs of low-voltage silicon. All models feature a wide input range, trimmable output voltage and a 20A current rating (15A for dual output). Remote sense and remote on/off facilities are included as standard, and the converters are comprehensively protected against over-current, over-voltage and over-temperature conditions. The HEC75 converters are especially suited to telecom, networking and industrial application.


UL E193009
TUV R50020744
CB JPTUV-5363
CE MARK

TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS		GENERAL SPECIFICATIONS	
Output power	75 Watts max	Efficiency	See table
Voltage accuracy	Full load and nominal Vin ± 1.5%	Isolation voltage	Input to Output 1600 VDC, min. Input to Case 1000 VDC, min. Output to Case 1000 VDC, min.
Voltage adjustability	Single (Note 1) + 10% , -20% Dual + 10% , -10%	Isolation resistance	10 ⁷ ohms, min
Minimum load	0%	Isolation capacitance	2500 pF, max
Line regulation	LL to HL at FL See table	Switching frequency	300 KHz, typ
Load regulation	0% to 100% FL See table	Approvals and standard (Note 5)	IEC60950, UL60950, EN60950
Remote sense	Single (Note 1) 10% of Vout	Case material	Open with Aluminum base-plate
Ripple and noise 20MHz bandwidth (Note 2)	100mVp-p	Weight	Single 53g (1.87oz) Dual 57g (2.01oz)
Temperature coefficient	±0.02% / °C, max	MTBF (Note 6)	Single 2 x 10 ⁶ hrs Dual 1.3 x 10 ⁶ hrs
Transient response recovery time 25% load step change	200uS	ENVIRONMENTAL SPECIFICATIONS	
Over voltage protection threshold (Non-latching Hiccup)	115% ~ 130% of Vout	Operating base-plate temperature range (Note 7)	-40°C to +100°C
Maximum total output current I ₁ + I ₂ Dual	15A	Over temperature protection	110°C
Over current protection threshold	110% ~ 140% of Iout Rated	Humidity max, Non-condensing	95%
Short circuit protection	Hiccup, automatics recovery	Storage temperature range	-55°C to +125°C
INPUT SPECIFICATIONS		Thermal shock	MIL-STD-810D
Input voltage range	36 – 75VDC	Vibration	10~55Hz, 2G, 3minutes period, 30minutes along X,Y and Z
UVLO start-up voltage	34V typ.	EMC CHARACTERISTICS	
UVLO shutdown voltage	32V typ.	Conducted emissions	EN55022 (Note 8) Level A EN55022 (Note 8) Level B
Input filter (Note 3)	L-C type	Radiated emissions	EN55022 Level A
Input voltage variation dv/dt	5V/ms,max (Complies with ETS300 132 part 4.4)	ESD	EN61000-4-2 Perf. Criteria2
Input surge voltage 100mS max	100VDC	Radiated immunity	EN61000-4-3 Perf. Criteria2
Start up time Nominal Vin and constant resistive load	25mS typ.	Fast transient	EN61000-4-4 Perf. Criteria2
Input reflected-ripple current (5Hz to 20MHz, 12uH source impedance)	20mA _{p-p}	Surge	EN61000-4-5 Perf. Criteria2
Remote ON/OFF(Note4)		Conducted immunity	EN61000-4-6 Perf. Criteria2
(Positive logic)	ON=Open or 3.5V < Vr < 15V, I _{IN} =50uA max. OFF=Short or 0V < Vr < 1.2V, I _{IN} =1mA max.		
(Negative logic)	ON=Short or 0V < Vr < 1.2V, I _{IN} =1mA max. OFF=Open or 3.5V < Vr < 15V, I _{IN} =50uA max.		



Single Output :

Model Number	Input Range	Output Voltage	Output Current	Line Regulation	Load Regulation	Input Current ⁽⁹⁾	Eff ⁽¹⁰⁾ (%)
HEC75-48S1P8	36 – 75 VDC	1.8 VDC	20 A	4 mV	6 mV	0.915 A	86
HEC75-48S2P5	36 – 75 VDC	2.5 VDC	20 A	5 mV	8 mV	1.255 A	88
HEC75-48S3P3	36 – 75 VDC	3.3 VDC	20 A	7 mV	10 mV	1.618 A	90
HEC75-48S05	36 – 75 VDC	5.0 VDC	15 A	10 mV	15 mV	1.838 A	90
HEC75-48S15	36 – 75 VDC	15 VDC	5 A	30 mV	45 mV	1.860 A	90

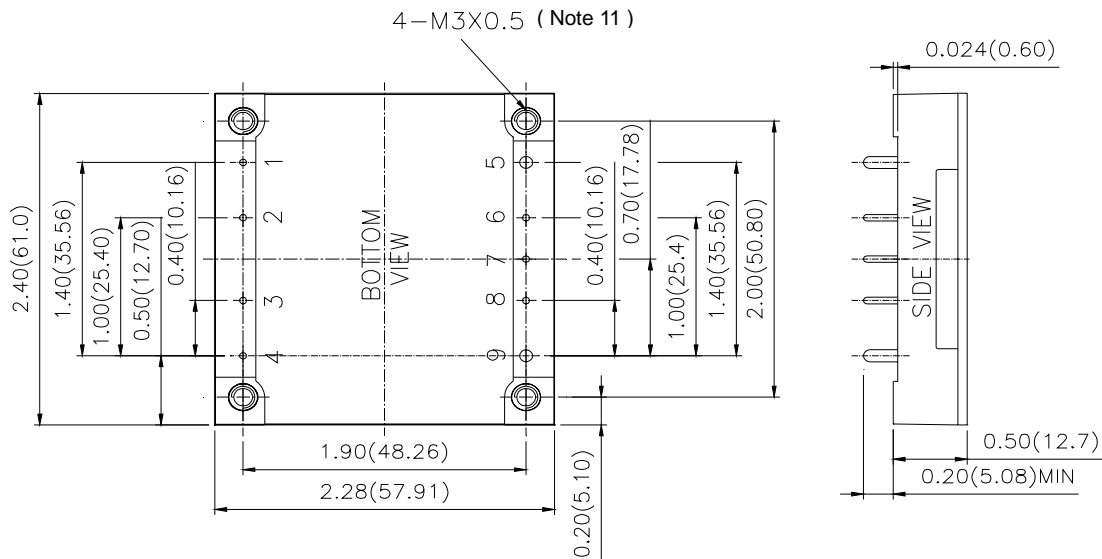
Dual Output :

Model Number	Input Range	Output Voltage		Output Current		Line Regulation	Load Regulation	Eff ⁽¹⁰⁾ (%)
		V1	V2	I 1	I 2			
HEC75-48D3305	36 – 75 VDC	5 VDC	3.3 VDC	15 A	15 A	7/10 mV	10/15 mV	88
HEC75-48D3325	36 – 75 VDC	3.3 VDC	2.5 VDC	15 A	15 A	7/5 mV	10/8 mV	81
HEC75-48D0518	36 – 75 VDC	5 VDC	1.8 VDC	15 A	15 A	10/4 mV	15/6 mV	85
HEC75-48D3318	36 – 75 VDC	3.3 VDC	1.8 VDC	15 A	15 A	7/4 mV	10/6 mV	81

- Note
- Maximum output deviation is 10% inclusive of remote sense. If remote sense is not being used, the +V sense should be connected to its corresponding +OUTPUT and likewise the- sense should be connected to its corresponding –OUTPUT.
 - Measured with a 1uF M/C and a 10uF M/C(for dual outputs) or 1uF M/C and a 10uF T/C(for single outputs).
 - An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current for 48V models. Power mate suggest: Nippon chemi-con KMF series, 220µF/100V, ESR 90mΩ.
 - The negative / positive logic and length are optional (see table). The pin voltage is referenced to negative input.
 - Dual output safety approvals pending.
 - BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at Tc=40°C. (Ground fixed and controlled environment)
 - Heat sink is optional and P/N: 7G-0021, 7G-0022, 7G-0023, 7G-0024.
 - The HEC75 meets level A and level B conducted emissions only with external components connected before the input pin to the converter.
 - Maximum value at nominal input voltage and full load.
 - Single : Typical value at nominal input voltage and full load.
Dual : The efficiency test condition: Nominal input voltage and both outputs current are 7.5A.
 - BASEPLATE GROUNDING : Base-plate should be grounded at one of the four screw bolts prior to operation.
 - The converter is provided by basic insulation.

Mechanical Drawing

Single Output :



PIN1,2,3,4,6,7,8. DIM. 0.04(1.016mm)
 PIN5,9. DIM. 0.08(2.032mm)
 Tolerance : x.xx±0.02(x.xx±0.5)
 x.xxx±0.01(x.xx±0.25)
 Dimensions : inches(mm)
 Pin pitch tolerance ± 0.014(0.35)



EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.

TRIM UP

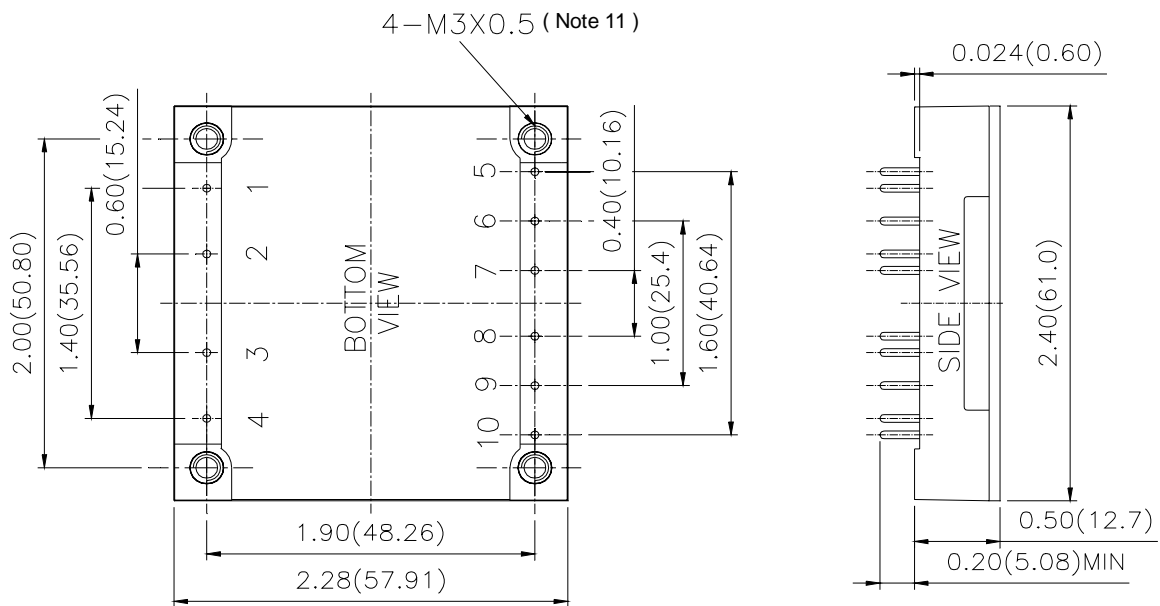
TRIM DOWN

PIN CONNECTION		
PIN	Define	Diameter
1	- INPUT	0.04 Inches
2	CASE	0.04 Inches
3	CTRL	0.04 Inches
4	+ INPUT	0.04 Inches
5	- OUTPUT	0.08 Inches
6	- SENSE	0.04 Inches
7	TRIM	0.04 Inches
8	+ SENSE	0.04 Inches
9	+ OUTPUT	0.08 Inches

PRODUCT OPTIONS TABLE	
Option	Suffix
Negative remote ON/OFF logic, 0.20" pin length (standard)	-
Negative remote ON/OFF logic, 0.145" pin length	-L
Negative remote ON/OFF logic, 0.11" pin length	-K
Positive remote ON/OFF logic, 0.20" pin length	-P
Positive remote ON/OFF logic, 0.145" pin length	-S
Positive remote ON/OFF logic, 0.11" pin length	-M

Dual Output :

Example : HEC75-48S3P3-P



PIN DIM. 0.04(1.016mm)
 Tolerance : x.xx±0.02(x.xx±0.5)
 x.xxx±0.01(x.xx±0.25)
 Dimensions : inches(mm)
 Pin pitch tolerance ± 0.014(0.35)

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.
 () for V2 output trim

TRIM UP

TRIM DOWN

PIN CONNECTION		
PIN	Define	Diameter
1	- INPUT	0.04 Inches
2	CASE	0.04 Inches
3	CTRL	0.04 Inches
4	+ INPUT	0.04 Inches
5	+ V2	0.04 Inches
6	-V2 (COM)	0.04 Inches
7	V2 TRIM	0.04 Inches
8	+V1	0.04 Inches
9	+V1 (COM)	0.04 Inches
10	V1 TRIM	0.04 Inches

PRODUCT OPTIONS TABLE	
Option	Suffix
Positive remote ON/OFF logic, 0.20" pin length (standard)	-
Positive remote ON/OFF logic, 0.145" pin length	-L
Positive remote ON/OFF logic, 0.11" pin length	-K
Negative remote ON/OFF logic, 0.20" pin length	-N
Negative remote ON/OFF logic, 0.145" pin length	-S
Negative remote ON/OFF logic, 0.11" pin length	-M

Example : HEC75-48D3305-N