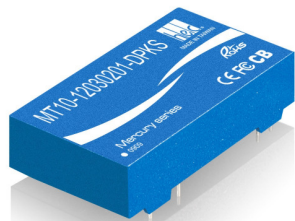


# HEC DC/DC Non-Brick Group *Mercury* Series

## MT 10Watt Family **DPKS** Type



### FEATURES

- 10 WATTS REGULATED/NON-ISOLATED OUTPUT POWER
- STANDARD 2.0" X 1.0" X 0.40" Size
- UNIQUE DESIGN OF 3 DIFFERENT OUTPUT VOLTAGES
- 2 : 1 WIDE INPUT VOLTAGE RANGE
- INPUT UVP
- OTP & SCP WITH AUTO RECOVER
- 2-YEAR WARRANTY

The **Mercury** series offers 10 Watts of total output power with 3 different output voltages in an industrial standard 2" x 1" x 0.4" package configuration and operate from -40°C to 90°C ambient temperature. It provides a 2:1 wide input voltage.

### Table of MODELS

Model Name	Vin Range	Output 1		Output 2		Output 3	
		V1	Max.Amp	V2	Max.Amp	V3	Max.Amp
MT10-12030201-DPKS	9-18VDC	3.3VDC	2A	2.5VDC	0.9A	1.2VDC	0.95A
MT10-12050302-DPKS	9-18VDC	2.5VDC	2A	5VDC	0.4A	3.3VDC	0.9A
MT10-12070503-DPKS	9-18VDC	3.3VDC	1A	7.2VDC	0.45A	5VDC	0.7A
MT10-09030201-DPKS	6.5-13.5VDC	3.3VDC	2A	2.5VDC	0.9A	1.2VDC	0.95A
MT10-09050302-DPKS	6.5-13.5VDC	2.5VDC	2A	5VDC	0.4A	3.3VDC	0.9A

**NOTE:** > Typical lead time for engineering sample: 2~4 weeks

### TECHNICAL SPECIFICATION

#### INPUT

Input voltage range	12V nominal input	9 - 18VDC
	9V nominal input	8 – 10VDC
Max. Input Current	12V input type	2.0 Amp.
	9V input type	2.0 Amp.
Input Surge Voltage (max.100mS)	12Vin type	28VDC
	9Vin type	28VDC

#### OUTPUT

Output power		10 Watts max.
Output voltage regulation	1.2V	1.14VDC ~ 1.26VDC
	2.5V	2.38VDC ~ 2.62VDC
	3.3V	3.14VDC ~ 3.46VDC
	5V	4.75VDC ~ 5.25VDC
	7.2V	7.12VDC ~ 7.56VDC

# HEC DC/DC Non-Brick Group *Mercury* Series

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Cross regulation	Asymmetrical load 25% x 1 output with 100% FL x 2 outputs	±2%
Output load range	1.2V	0.1A ~ 0.95A
	2.5V	0.1A ~ 0.9A
	3.3V	0.2A ~ 2A
	5V	0.2A ~ 2A
	7.2V	0.2A ~ 2A
Ripple and Noise	1.2V	50mV
20MHz bandwidth, loading simulation by one 10 $\mu$ F electrolytic capacitor paralleled with one 0.1 $\mu$ F ceramic capacitor.	2.5V	50mV
	3.3V	50mV
	5V	50mV
Full load condition	7.2V	50mV

### GENERAL

Efficiency	Full load at nominal Vin range	Min.81%
Certificates		CE, FCC, CB
Switching frequency		3.3V: 380KHz, typical 1.2V & 5V: 600KHz, typical
Case material		Non-conductive blue plastic
Potting material		Silicone
Dimensions		2.0" X 1.0" X 0.4"

### PROTECTIONS

Input Under Voltage Protection	Hiccup mode, auto recover	Auto recovery
Over Temperature Protection		Output 1 protection point: 150°C
	Hiccup mode, auto recover	Output 1 recovery point: 100°C
		Output 2+3 are separately protected from output 1.
		Output 2+3 protection point: 148°C
		Output 2+3 recovery point: 128°C
Short Circuit Protection	Hiccup mode, auto recover	Protection point for 1.2V: 5A max.
		2.5V: 5A max.
		3.3V: 7A max.
		5.0V: 7A max.
		7.2V: 7A max.

### ENVIRONMENTAL

Operating ambient temperature	-40°C ~ +90°C (no derating)
Storage ambient temperature	-55°C ~ +105°C (no derating)

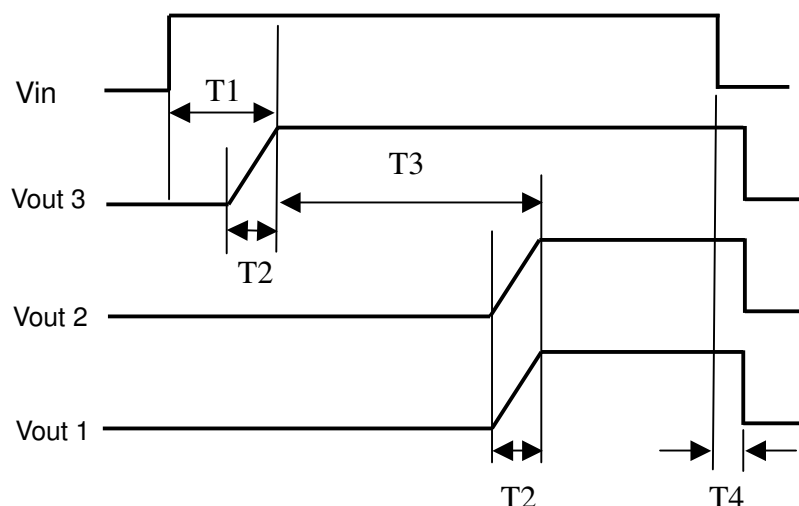
# HEC DC/DC Non-Brick Group *Mercury* Series MT 10Watt Family **DPKS** Type



Thermal shock		MIL-STD-810F
Vibration		MIL-STD-810F
Relative humidity	Non condensing, both operating and storage	5% to 95% RH
MTBF	Preliminary estimation at room temperature of 25°C, 12Vdc input	> 1,000,000 hours
EMI	EN55022	Class B with external circuit

- NOTE:**
1. ALL specifications are typical at nominal input, full load and 25°C unless otherwise noted.
  2. Specifications are subject to change without notice.
  3. Printed or downloaded datasheets are not subject to HEC document control.
  4. Product labels shown, including safety agency certificates, may vary based on the date of manufacture.
  5. Information provided in this documentation is for ordering purposes only.
  6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications, which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.

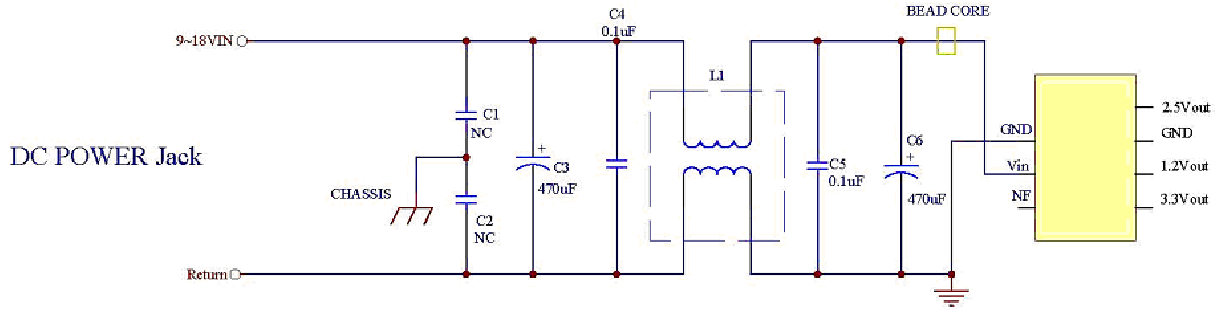
## Timing



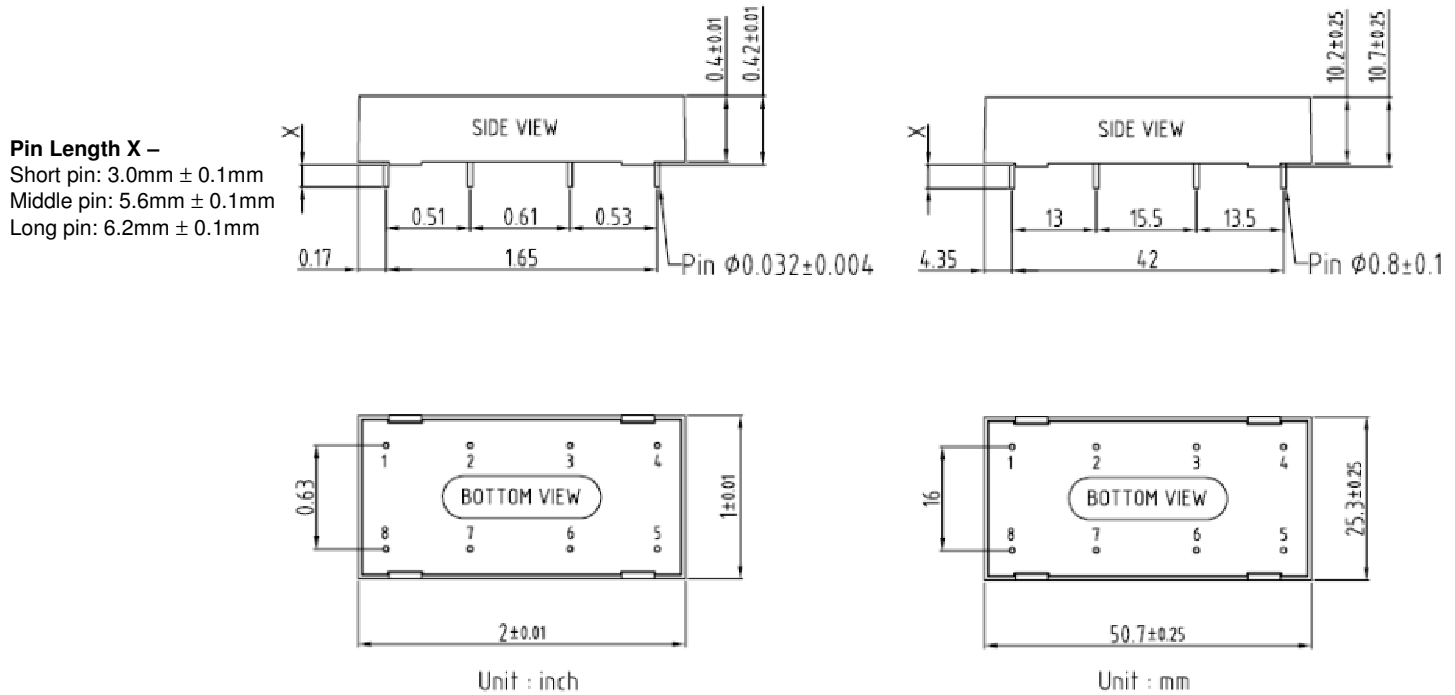
- T1: Start up time:  $T1 < 30\text{ms}$   
T2: Rise time:  $T2 < 20\text{ms}$   
T3: 1.2V-ok delay time:  $150\text{ms} < T3 < 250\text{ms}$   
T4: Hold-up time:  $T4 > 10\ \mu\text{s}$

### EMI Application Circuit

(Value shown in the circuit is for all models listed here for *Mercury* series)



### MECHANICAL DIMENSION & PIN ASSIGNMENT



PIN ASSIGNMENT			
PIN	Assignment	PIN	Assignment
1	Output 1	5	No pin
2	Output 3	6	GND
3	GND	7	Input
4	Output 2	8	NF