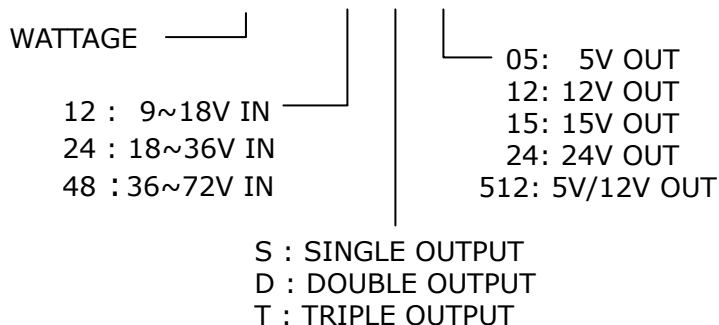


# HDD60 SERIES

# DC-DC CONVERTER 50 ~ 60W



HDD60 - 12 S 05 X



## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (MIN.)	CASE
<b>Single Output Models</b>						
HDD60 - 12S05-X	9~18 VDC	60 WATTS	+ 5 VDC	12000 mA	79%	HH
HDD60 - 12S12-X	9~18 VDC	60 WATTS	+ 12 VDC	5000 mA	82%	HH
HDD60 - 12S15-X	9~18 VDC	60 WATTS	+ 15 VDC	4000 mA	82%	HH
HDD60 - 12S24-X	9~18 VDC	60 WATTS	+ 24 VDC	2500 mA	84%	HH
HDD60 - 24S05-X	18~36 VDC	60 WATTS	+ 5 VDC	12000 mA	80%	HH
HDD60 - 24S12-X	18~36 VDC	60 WATTS	+ 12 VDC	5000 mA	84%	HH
HDD60 - 24S15-X	18~36 VDC	60 WATTS	+ 15 VDC	4000 mA	84%	HH
HDD60 - 24S24-X	18~36 VDC	60 WATTS	+ 24 VDC	2500 mA	85%	HH
HDD60 - 48S05-X	36~72 VDC	60 WATTS	+ 5 VDC	12000 mA	83%	HH
HDD60 - 48S12-X	36~72 VDC	60 WATTS	+ 12 VDC	5000 mA	85%	HH
HDD60 - 48S15-X	36~72 VDC	60 WATTS	+ 15 VDC	4000 mA	85%	HH
HDD60 - 48S24-X	36~72 VDC	60 WATTS	+ 24 VDC	2500 mA	86%	HH



# HDD60 SERIES

## DC-DC CONVERTER 50 ~ 60W

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (MIN.)	CASE
<b>Double Output Models</b>						
HDD50 - 12D05-X	9~18 VDC	50 WATTS	5V / 5V	5A / 5A	78%	HH
HDD60 - 12D12-X	9~18 VDC	60 WATTS	12V / 12V	2.5A / 2.5A	80%	HH
HDD60 - 12D15-X	9~18 VDC	60 WATTS	15V / 15V	2A / 2A	80%	HH
HDD60 - 12D512-X	9~18 VDC	55 WATTS	5V / 12V	5A / 2.5A	79%	HH
HDD50 - 24D05-X	18~36 VDC	50 WATTS	5V / 5V	5A / 5A	80%	HH
HDD60 - 24D12-X	18~36 VDC	60 WATTS	12V / 12V	2.5A / 2.5A	82%	HH
HDD60 - 24D15-X	18~36 VDC	60 WATTS	15V / 15V	2A / 2A	82%	HH
HDD60 - 24D512-X	18~36 VDC	60 WATTS	5V / 12V	6A / 2.5A	80%	HH
HDD50 - 48D12-X	36~72 VDC	50 WATTS	5V / 5V	5A / 5A	80%	HH
HDD60 - 48D12-X	36~72 VDC	60 WATTS	12V / 12V	2.5A / 2.5A	84%	HH
HDD60 - 48D15-X	36~72 VDC	60 WATTS	15V / 15V	2A / 2A	84%	HH
HDD60 - 48D512-X	36~72 VDC	60 WATTS	5V / 12V	6A / 2.5A	81%	HH
<b>Triple Output Models</b>						
HDD55 - 12T512-X	9~18 VDC	55 WATTS	+5V / ±12V	+5A / ±1.25A	78%	HH
HDD55 - 24T512-X	18~36 VDC	55 WATTS	+5V / ±12V	+5A / ±1.25A	79%	HH
HDD55 - 48T512-X	36~72 VDC	55 WATTS	+5V / ±12V	+5A / ±1.25A	80%	HH

--SUFFIX "X=P" : PCB MOUNTING TYPE, HEATSINK WILL BE ADDED ON MODULE.

--SUFFIX "X=T" : CHASSIS MOUNTING TYPE:(TERMINAL BLOCK), NO HEATSINK. USE CHASSIS AS HEATSINK OR FAN FORCE COOLING. INDICATE SUFFIX WHEN ORDER.

--SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICED.

## FEATURES

- \* 50W to 60W DC/DC CONVERTER
- \* 2:1 INPUT RANGE, PI INPUT FILTER
- \* ISOLATION INPUT AND OUTPUT
- \* HIGH PERFORMANCE UP TO 86%
- \* SHORT CIRCUIT PROTECTION
- \* 2 YEARS WARRANTY



## SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

### GENERAL SPECIFICATION

- \* Switching frequency: ..... >80KHz (typ.)
- \* Isolation voltage: ..... 1,500VDC
- \* Isolation resistance: ..... >1G  $\Omega$ (min.)
- \* Operating ambient temperature: ..... -25 to +71°C
- \* Storage temperature: ..... -25 to +100°C
- \* Max. Case temperature: ..... 95°C
- \* M.T.B.F.: ..... 122,500Hrs at @ GF40, according to MIL-HDBK-217F
- \* Cooling: ..... Free air convection
- \* Transient recovery time: ..... 500 $\mu$ S, 25% load step change
- \* Temperature coefficient: .....  $\pm 0.02\%$  / °C
- \* Dimension: ..... 88.9 X 140 X 22.4mm

### INPUT SPECIFICATIONS

- \* Input voltage range / frequency: ..... 9 ~ 18VDC for 12V  
18 ~ 36VDC for 24V  
36 ~ 72VDC for 48V
- \* Input filter: ..... Pi type

### OUTPUT SPECIFICATIONS

- \* Output voltage accuracy: .....  $\pm 1\%$  at  $V_{o\_nom}$
- \* Minimum load: ..... No load for +5V, 20% for  $\pm 12V$  for triple
- \* Line regulation: .....  $\pm 1\%$  at  $V_{o\_nom}$
- \* Load regulation: .....  $\pm 2\%$  at  $V_{o\_nom}$  for single output models  
 $\pm 2\%$  at  $V_{o\_nom}$  for dual output models
- \* Ripple & noise: .....  $\pm 1\%$  mV (max.)
- \* Efficiency: ..... Up to 86%, see model list
- \* Voltage trim range: .....  $\pm 10\%$  at  $V_{o\_nom}$
- \* Derating: ..... See table 1
- \* Case material: ..... Metal

### CONTROL AND PROTECTION

- \* Remote on/off: ..... ON : Open or +5.5VDC(Min.)  
OFF : +1.8VDC(Max.)
- \* Output short circuit: ..... Continuous



