

# Power Product Selection Guide

Industrial power supply and interface isolated module



**Professor Zhou Ligong,  
Academic Leader**

A native of Hunan born in March 1964, Professor Zhou Ligong is the founder of Guangzhou ZLG MCU Technology Co., Ltd. and Guangzhou ZHIYUAN Electronics Co., Ltd. As a famous specialist in the embedded system technology field, Professor Zhou has successively published more than 40 technical books and college textbooks on embedded system technology, and has been honored with 2 First-class Provincial Teaching Achievement Awards and 1 Second-class National Teaching Achievement Award.

# Company Introduction

Over the past 15 years, Guangzhou ZHIYUAN Electronics Co., Ltd. (hereinafter referred as ZHIYUAN Electronics) has committed itself in the electronics industry to adhering to the customer-oriented principle and making continuous innovation on the basis of the customers' demands, and has widely won respect and trust from customers. Today, our industrial control equipments, communication equipments, power supply products, as well as testing and analyzing equipments have been widely used in the national pillar industries such as industrial automation, energy, power electronics, rail transportation and medical treatment.

As a leading provider of domestically-leading industrial Internet system solutions, we have provided our customers with competitive system-level solutions and services, ranging from data acquisition to communication network, control implementation to testing & analysis, and helped them to achieve success in this age of industrial Internet era. We adhere to focused strategy and commit to sustained R&D in the fields of high-accuracy data acquisition, high-bandwidth signal processing, wireless communication, field bus and embedded control, etc. Our innovation is driven by the customer's demands and the cutting-edge technologies, which have helped our company to keep its leading position in the industry. Each year, the R&D investment accounts for more than 20% of our sales revenue. With a team consisting of nearly 500 members, more than 55% of the employees are engaged in innovation, research and development. ZHIYUAN Electronics holds a core position in a number of organizations of standardization and has scored 92 patent applications.

We are firmly convinced that the future will be a smarter world and that ZHIYUAN Electronics will collaborate with our partners and strive to build more efficient and integrated systems, pushing forward the progress of Industry 4.0 in China as well as the overall development of the world. We believe that we are making a world of difference.



Comprehensive High-end Testing Equipment and Dedicated Laboratory



EMC Laboratory

RF Analog Technology Laboratory

Calibration Laboratory



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### Power Module

The isolated DC-DC power module elaborately developed by ZHIYUAN Electronics comes with high efficiency, small size, high reliability, impact resistance, good isolation characteristics, and wide temperature range. With its industry standard pinout, flame-retardant package (UL94-V0), natural cooling, the module can be soldered directly on the PCB without the need of external heat sink and other external components. The power range of 0.1W~60W enable it to be widely used in many fields such as electric power, industrial automation, communication, medical treatment, traffic, building automation, instrument and meter, and automotive electronics.

The AC-DC power module is compatible with universal voltage and can be used in AC and DC applications. Due to its high efficiency, low power consumption, safe isolation, stability and reliability, it is widely used in industrial automation, electric power and medical field. Its EMC performance and safety standards meet the IEC61000, UL60950/EN60601 and IEC60950 international standards.



### Interface Module

For the requirements of communication interface isolation and the I/O interface isolation in the industrial automation field, ZHIYUAN Electronics launches a series of interface isolated modules, providing users with a complete interface isolation solution.



# DC-DC Power Module

## Product selection for new generation of isolated DC-DC power module

Fixed input, isolated & unregulated series

Part Number	Output Power	Input Voltage	Output Voltage	Dimensions	Page
E_FS-1W	1W	3,3,5,12,24	3,3,5,12,15,24	11.60×6.00×10.10	6
E_FLS-1W	1W	3,3,5,12,24	3,3,5,12,15,24	19.60×6.00×10.10	6
E_FKS-1W	1W	3,3,5,12,24	3,3,5,12,15,24	19.60×6.00×10.10	8
E_FD-1W	1W	5,12,24	5,12,15,24	12.70×10.00×7.70	8
E_AS-1W	1W	5,12,24	±5,±12,±15	19.60×6.00×10.10	7
E_FS-2W	2W	5,12,24	5,12,15,24	19.65×7.05×10.10	9
E_FKS-2W	2W	5,12,24	5,12,15,24	19.65×7.05×10.10	9

2:1 wide input, isolated & regulated series

Part Number	Output Power	Input Voltage	Output Voltage	Dimensions	Page
E_URAD-6W	6W	9~18,18~36,36~72	±5,±12,±15	32.00×20.40×11.00	23
E_URBD-6W	6W	9~18,18~36,36~72	3,3,5,12,15,24	32.00×20.40×11.00	23
E_URADD-6W	6W	9~18,18~36,36~72	±5,±12,±15	25.40×25.40×11.70	23
E_URBDD-6W	6W	9~18,18~36,36~72	3,3,5,12,15,24	25.40×25.40×11.70	23
E_URAD-10W	10W	9~18,18~36,36~72	±5,±12,±15,±24	50.80×25.40×12.70	26
E_URBD-10W	10W	9~18,18~36,36~72	3,3,5,12,15,24	50.80×25.40×12.70	25

## 1~3W isolated DC-DC product selection

2:1 wide input, isolated & regulated series

Part Number	Output Power	Input Voltage	Output Voltage	Dimensions	Page
ZY_WRECS-1W	1W	4.5~9,9~18,18~36,36~72	±5,±12,±15	22.20×9.20×12.20	18
ZY_WRFCS-1W	1W	4.5~9,9~18,18~36,36~72	3,3,5,12,15,24	22.20×9.20×12.20	18
ZY_WRDS-1W	1W	9~18,18~36	5/5,12/12,15/15	27.50×9.00×11.50	20
ZY_WRDS-2W	2W	9~18,18~36	5/5,12/12,15/15	27.50×9.00×11.50	20
ZY_WRECS-2W	2W	9~18,18~36	±5,±12,±15	22.20×9.20×12.20	18
ZY_WRFCS-2W	2W	9~18,18~36	3,3,5,12,15,24	22.20×9.20×12.20	18
ZY_WRB1D-2W	2W	9~18,18~36	5,12,15	24.05×14.25×8.30	20
ZY_WRBD-2W	2W	9~18,18~36	5,12,15	24.20×14.35×9.75	19
ZY_WRECS-3W	3W	9~18,18~36	±5,±12,±15	22.20×9.20×12.20	18
ZY_WRFCS-3W	3W	9~18,18~36	5,12,15,24	22.20×9.20×12.20	18
ZY_WRAD-3W	3W	4.5~9,9~18,18~36,36~72	±5,±12,±15	31.80×20.30×9.50	21
ZY_WRBD-3W	3W	4.5~9,9~18,18~36,36~72	3,3,5,12,15,24	31.80×20.30×9.50	21
ZY_WRADD-3W	3W	18~36,36~72	±5,±12,±15	25.40×25.40×11.70	21
ZY_WRBDD-3W	3W	18~36,36~72	5,12,15,24	25.40×25.40×11.70	21

## 5W or above isolated DC-DC product selection

4:1 wide input, isolated & regulated series

Part Number	Output Power	Input Voltage	Output Voltage	Dimensions	Page
E_UHAD-6W	6W	9~36,18~72	±5,±12,±15	32.00×20.40×11.00	24
E_UHBD-8W	8W	9~36,18~72	5,12,15,24	32.00×20.40×11.00	25
E_UHBD-30W	30W	9~36	5,12,15	50.80×40.60×12.50	26

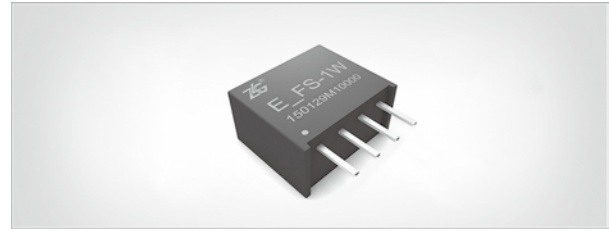
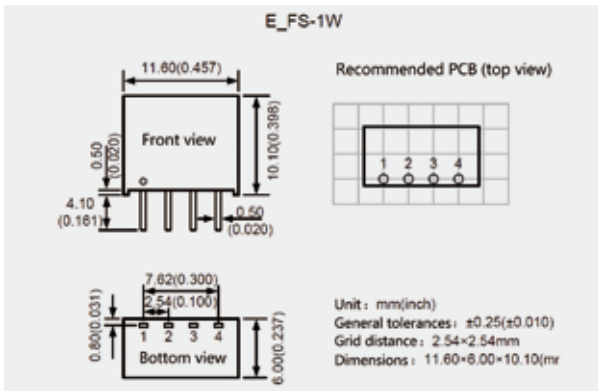
## E\_FS-1W Series

1W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter, SPI package

### Features:

- High efficiency up to 82%.
- 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_FS	2	1	-	3	4	-

NC:No Connection.

### Product Selection

Part Number	Rated Input Voltage (Range) (VDC)	Output			Full Load Efficiency (% Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
E0303FS-1W	3.3	3.3	30	300	74
E0305FS-1W	(2.97-3.63)	5	20	200	76
E0503FS-1W	5 (4.5-5.5)	3.3	30	300	75
E0505FS-1W		5	20	200	80
E0512FS-1W		12	9	83	80
E0515FS-1W		15	7	67	81
E0524FS-1W		24	4	42	82
E1205FS-1W	12 (10.8-13.2)	5	20	200	80
E1212FS-1W		12	8	83	81
E1215FS-1W		15	7	67	81
E1224FS-1W		24	4	42	82
E2405FS-1W		5	20	200	80
E2412FS-1W	24 (21.6-26.4)	12	8	83	81
E2415FS-1W		15	7	67	81
E2424FS-1W		24	4	42	82

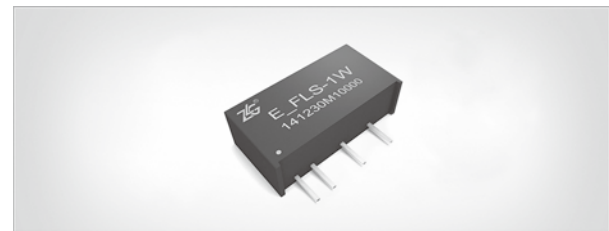
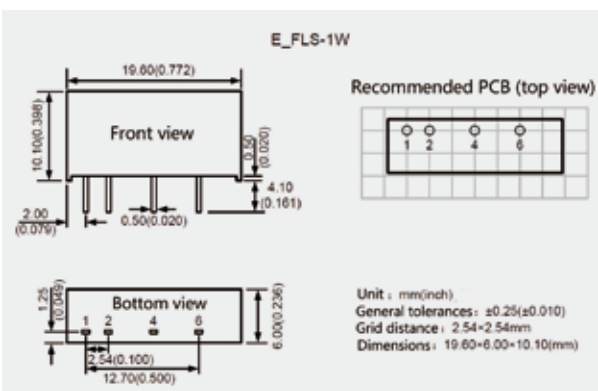
## E\_FLS-1W Series

1W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter, SPI package

### Features:

- High efficiency up to 82%.
- F: 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_FLS	1	2	-	4	6	-

NC:No Connection.

### Product Selection

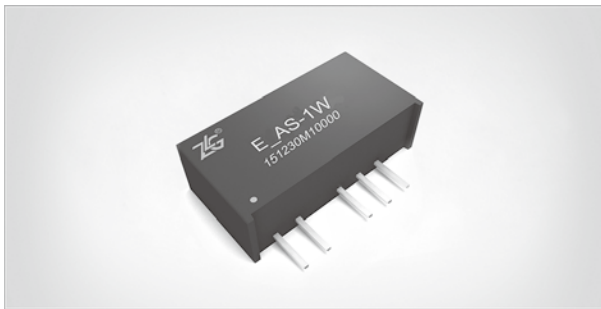
Part Number	Rated Input Voltage (Range) (VDC)	Output			Full Load Efficiency (% Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
E0303FLS-1W	3.3	3.3	30	300	74
E0305FLS-1W	(2.97-3.63)	5	20	200	76
E0503FLS-1W	5 (4.5-5.5)	3.3	30	300	75
E0505FLS-1W		5	20	200	80
E0512FLS-1W		12	9	83	80
E0515FLS-1W		15	7	67	81
E0524FLS-1W		24	4	42	82
E1205FLS-1W	12 (10.8-13.2)	5	20	200	80
E1212FLS-1W		12	8	83	81
E1215FLS-1W		15	7	67	81
E1224FLS-1W		24	4	42	82
E2405FLS-1W		5	20	200	80
E2412FLS-1W	24 (21.6-26.4)	12	8	83	81
E2415FLS-1W		15	7	67	81
E2424FLS-1W		24	4	42	82

# E\_AS-1W Series

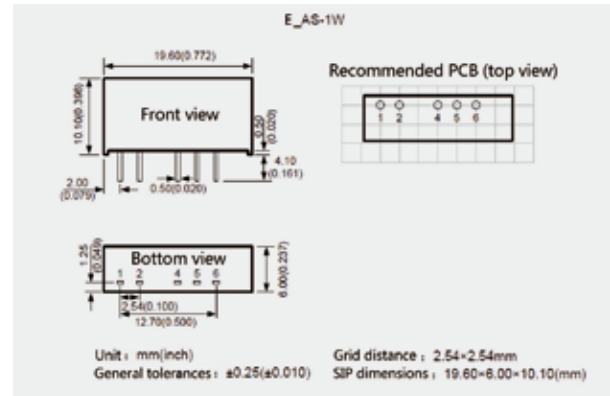
1W, fixed input, 2000VDC isolated & unregulated, dual output DC-DC converter, SPI package

### Features:

- High efficiency up to 81%.
- No heat sink required.
- Operating temperature: -40°C~+105°C.
- Casing and potting material comply with UL94-V0 standard.
- The SIP7 package is pin-to-pin compatible with international & domestic similar product.
- 2000VDC isolation.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10% or where the high accuracy is required.



### Package Dimensions



Function	VIN	GND	-V0	0V	+V0	NC
E_AS-1W	1	2	4	5	6	-

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency(%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
E0505AS-1W	5	4.5~5.5	±5	±10	±100	80
E0512AS-1W			±12	±4.2	±42	80
E0515AS-1W			±15	±3.3	±33	81
E1205AS-1W	12	10.8~13.2	±5	±10	±100	80
E1212AS-1W			±12	±4.2	±42	80
E1215AS-1W			±15	±3.3	±33	81
E2405AS-1W	24	21.6~26.4	±5	±10	±100	80
E2412AS-1W			±12	±4.2	±42	80
E2415AS-1W			±15	±3.3	±33	81

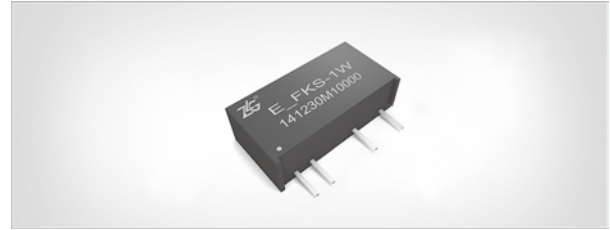
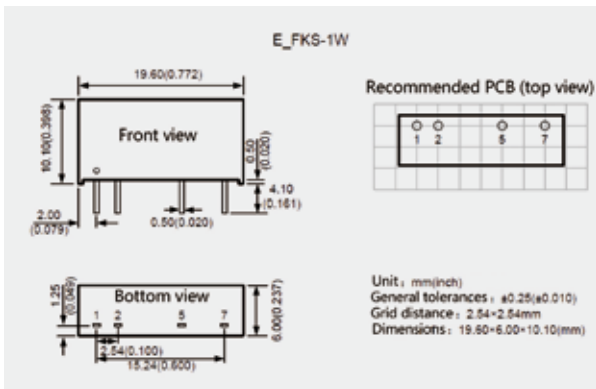
## E\_FKS-1W Series

1W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter

### Features:

- High efficiency up to 82%.
- FK: 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_FKS	1	2	-	5	7	-

NC:No Connection.

### Product Selection

Part Number	Rated Input Voltage (Range) (VDC)	Output			Full Load Efficiency (% Typ)
		Nominal Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
E0303FKS-1W	3.3	3.3	30	300	74
E0305FKS-1W	(2.97-3.63)	5	20	200	76
E0503FKS-1W	5	3.3	30	300	75
E0505FKS-1W		5	20	200	80
E0512FKS-1W	(4.5-5.5)	12	9	83	80
E0515FKS-1W		15	7	67	81
E0524FKS-1W	12	24	4	42	82
E1205FKS-1W		5	20	200	80
E1212FKS-1W	(10.8-13.2)	12	8	83	81
E1215FKS-1W		15	7	67	81
E1224FKS-1W	24	24	4	42	82
E2405FKS-1W		5	20	200	80
E2412FKS-1W	(21.6-26.4)	12	8	83	81
E2415FKS-1W		15	7	67	81
E2424FKS-1W	24	4	42	82	

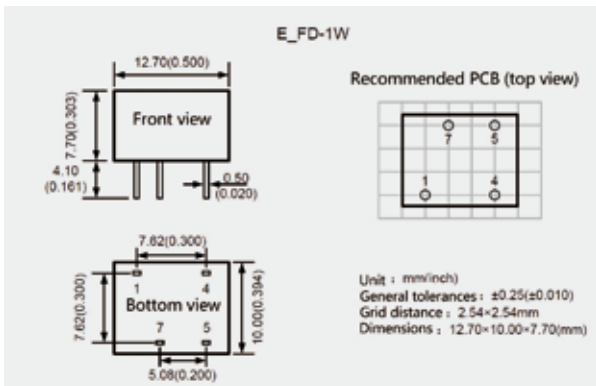
## E\_FD-1W Series

1W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter

### Features:

- High efficiency up to 83%.
- 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_FD	4	1	-	7	5	-

NC:No Connection.

### Product Selection

Part Number	Rated Input Voltage (Range) (VDC)	Output			Full Load Efficiency (% Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
E0505FD -1W	5	5	20	200	80
E0512FD -1W		12	9	83	80
E0515FD -1W	(4.5-5.5)	15	7	67	81
E0524FD -1W		24	4	42	82
E1205FD -1W	12	5	20	200	80
E1212FD -1W		12	9	83	81
E1215FD -1W	(10.8-13.2)	15	7	67	81
E1224FD -1W		24	4	42	82
E2405FD -1W	24	5	20	200	80
E2412FD -1W		12	9	83	81
E2415FD -1W	(21.6-26.4)	15	7	67	81
E2424FD -1W		24	4	42	82



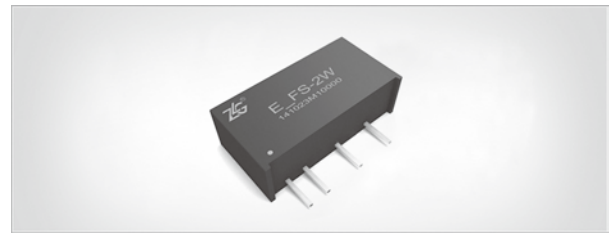
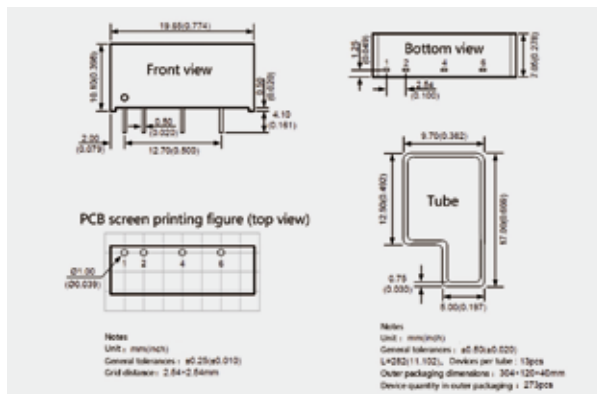
# E\_FS-2W Series

2W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter, SIP package

### Features:

- High efficiency up to 83%.
- F: 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### 封装尺寸



Function	VIN	GND	-VO	0V	+VO	NC
E_FS	1	2	-	4	6	-

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
E0505FS-2W	5	4.5-5.5	5	50	400	89
E0512FS-2W			12	17	167	84
E0515FS-2W			15	13	133	84
E0524FS-2W			24	8	84	84
E1205FS-2W			5	50	400	84
E1212FS-2W	12	10.8-13.2	12	17	167	84
E1215FS-2W			15	13	133	84
E1224FS-2W			24	8	84	84
E2405FS-2W	24	21.6-26.4	5	50	400	84
E2412FS-2W			12	17	167	84
E2415FS-2W			15	13	133	84
E2424FS-2W			24	8	84	86

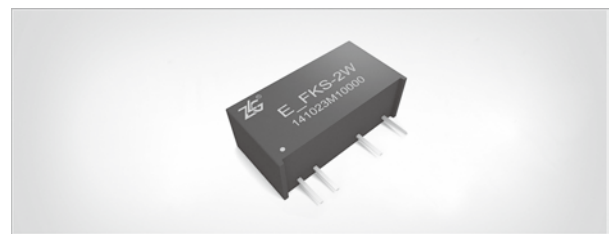
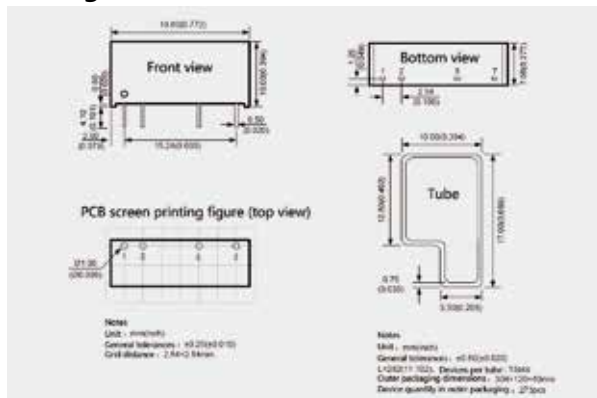
# E\_FKS-2W Series

2W, fixed input, 3000VDC isolated & unregulated, single output DC-DC converter, SIP package

### Features:

- High efficiency up to 89%.
- 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.
- Operating temperature: -40°C~+105°C.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_FKS	1	2	-	5	7	-

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
E0505FKS-2W	5	4.5-5.5	5	50	400	89
E0512FKS-2W			12	17	167	84
E0515FKS-2W			15	13	133	84
E0524FKS-2W			24	8	84	84
E1205FKS-2W			5	50	400	84
E1212FKS-2W	12	10.8-13.2	12	17	167	84
E1215FKS-2W			15	13	133	84
E1224FKS-2W			24	8	84	84
E2405FKS-2W	24	21.6-26.4	5	50	400	84
E2412FKS-2W			12	17	167	84
E2415FKS-2W			15	13	133	84
E2424FKS-2W			24	8	84	86

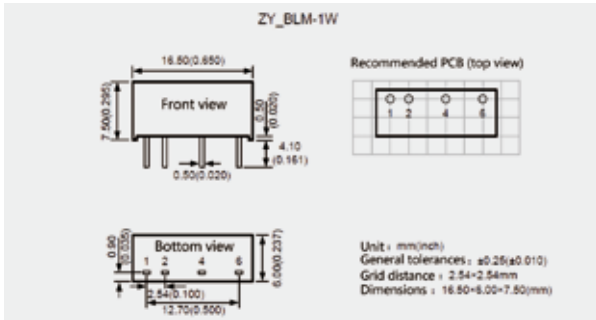
## ZY\_BLM-1W Series

1W, fixed input, 1000VDC isolated & unregulated DC-DC converter, SIP package

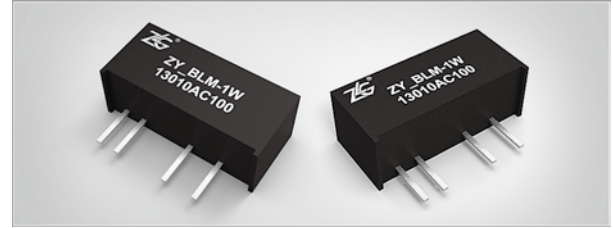
### Features:

- High efficiency up to 80%.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- The SIP6 package is pin-to-pin compatible with international & domestic similar product.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO
ZY_BLM-1W	1	2	-	4	6



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505BLM -1W	5	4.5-5.5	5	20	200	70
ZY0509BLM -1W			9	12	111	78
ZY0512BLM -1W			12	9	83	79
ZY0515BLM -1W			15	7	67	80
ZY0524BLM -1W	12	10.8~13.2	24	4	42	81
ZY1205BLM -1W			5	20	200	73
ZY1209BLM -1W			9	12	111	79
ZY1212BLM -1W			12	9	83	80
ZY1215BLM -1W	24	21.6~26.4	15	7	67	81
ZY1224BLM -1W			24	4	42	83
ZY2405BLM -1W			5	20	200	73
ZY2409BLM -1W			9	12	111	78
ZY2412BLM -1W	24	21.6~26.4	12	9	83	79
ZY2415BLM -1W			15	7	67	81
ZY2424BLM -1W			24	4	42	81

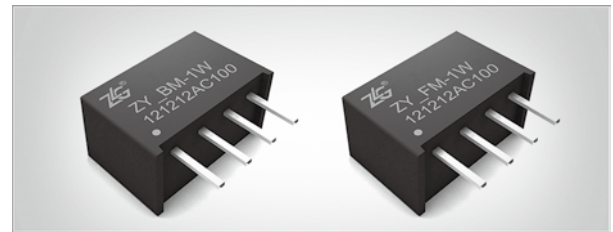
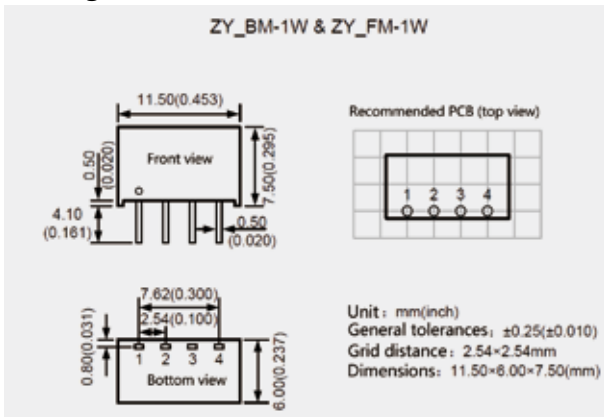
## ZY\_BM-1W & ZY\_FM-1W Series

1W, fixed input, 1000VDC/3000VDC isolated & unregulated, single output DC-DC converter, ultra miniature SIP package

### Features:

- High efficiency up to 78%
- B:1000VDC isolation, F: 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- The SIP4 package is pin-to-pin compatible with international & domestic similar product.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10% or where the high accuracy is required.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_B(F)M-1W	2	1	-	3	4	-

NC:No Connection.

### Product Selection

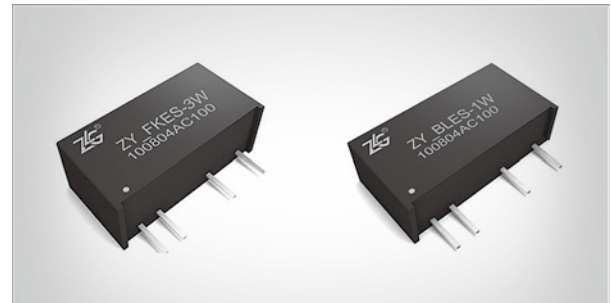
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0303B/FM-1W	3.3	2.97~3.63	3.3	30	300	72
ZY0305B/FM-1W			5	15	150	70
ZY0503B/FM-1W			3.3	30	300	74
ZY0505B/FM-1W	5	4.5~5.5	5	20	200	70
ZY0509B/FM-1W			9	11	111	76
ZY0512B/FM-1W			12	8	83	77
ZY0515B/FM-1W			15	7	67	78
ZY1205B/FM-1W	12	10.8~13.2	5	20	200	70
ZY1209B/FM-1W			9	11	111	77
ZY1212B/FM-1W			12	8	83	78
ZY1215B/FM-1W			15	7	67	78

# ZY\_FKES-3W Series

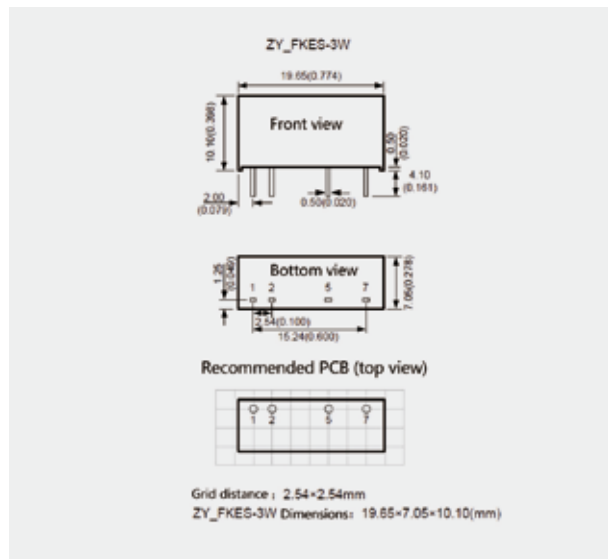
3W, fixed input, 3000VDC isolated & unregulated, single-output advanced DC-DC converter, SIP package

### Features:

- High efficiency up to 89%.
- 2.1W/cm<sup>3</sup> power density.
- Ultra-low quiescent power dissipation.
- Ultra-low output voltage ripple
- Low linear and load regulation.
- Unregulated single output.
- 3000VDC isolation.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- Pin-to-pin compatible with international & domestic similar SIP product.



### Package Dimensions



Function	VIN	GND	-V0	0V	+V0	NC
ZY_FKES-3W	1	2	-	5	7	-

NC:No Connection.

### Product Selection

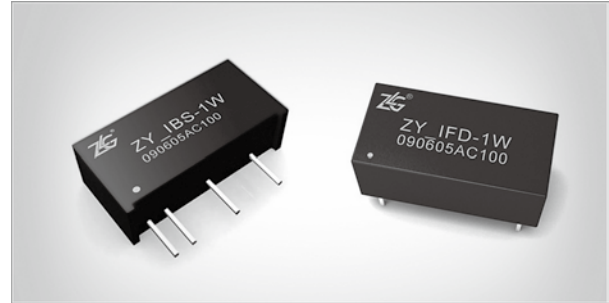
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505FKES-3W	5	4.5~5.5	5	60	600	83
ZY0512FKES-3W			12	25	250	87
ZY0515FKES-3W			15	20	200	88
ZY1205FKES-3W	12	10.8~13.2	5	60	600	85
ZY1212FKES-3W			12	25	250	88
ZY1215FKES-3W			15	20	200	89
ZY2405FKES-3W	24	21.6~26.4	5	60	600	85
ZY2412FKES-3W			12	25	250	88
ZY2415FKES-3W			15	20	200	89

# ZY\_IBS/D-1W & ZY\_IFS/D-1W Series

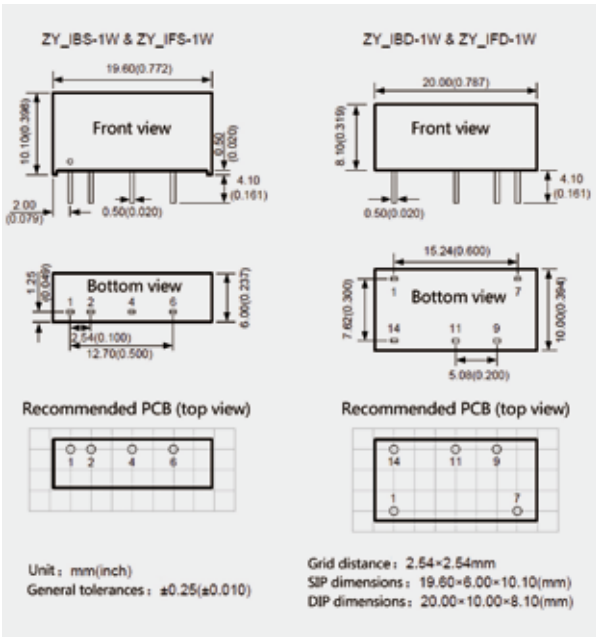
1W, fixed input, 1000VDC/3000VDC isolated & unregulated single output DC-DC converter, SIP/DIP package

**Features:**

- High efficiency up to 75%.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- The SIP7 and DIP14 packages are pin-to-pin compatible with international & domestic similar product.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±5%.



**Package Dimensions**



Function	VIN	GND	-VO	0V	+VO	NC
ZY_IB(F)S-1W	1	2	-	4	6	-
ZY_IB(F)D-1W	14	1	-	11	9	7

NC:No Connection.

**Product Selection**

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505IBS/D-W75	5	4.75~5.25	5	15	150	62
ZY0505IBS/D-1W			5	20	200	63
ZY0512IBS/D-1W			12	8	83	73
ZY0515IBS/D-1W			15	7	67	73
ZY0524IBS/D-1W			24	4	42	68
ZY1205IBS/D-1W	12	11.4~12.6	5	20	200	64
ZY1212IBS/D-1W			12	8	83	73
ZY1215IBS/D-1W			15	7	67	74
ZY1224IBS/D-1W			24	4	42	68
ZY2405IBS/D-1W	24	22.8~25.2	5	20	200	63
ZY2412IBS/D-1W			12	8	83	73
ZY2415IBS/D-1W			15	7	67	75
ZY2424IBS/D-1W	24	4	42	68		
ZY0505IFS/D-1W	5	4.75~5.25	5	20	200	63
ZY0512IFS/D-1W			12	8	83	72
ZY0515IFS/D-1W			15	7	67	73
ZY0524IFS/D-1W			24	4	42	68
ZY1205IFS/D-1W	12	11.4~12.6	5	20	200	64
ZY1212IFS/D-1W			12	8	83	71
ZY1215IFS/D-1W			15	7	67	72
ZY1224IFS/D-1W	24	4	42	68		
ZY2405IFS/D-1W	24	22.8~25.2	5	20	200	63
ZY2412IFS/D-1W			12	8	83	73
ZY2415IFS/D-1W			15	7	67	75
ZY2424IFS/D-1W			24	4	42	68

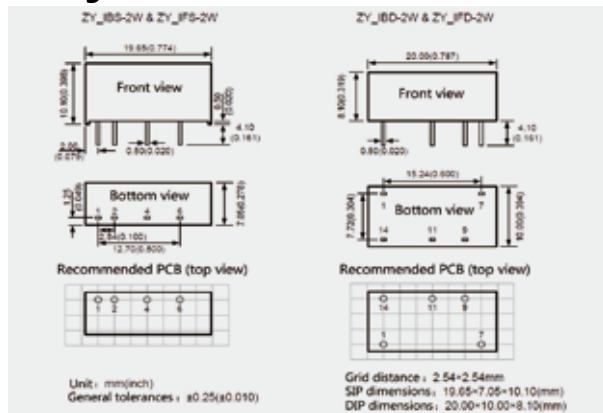
## ZY\_IBS/D-2W & ZY\_IFS/D-2W Series

2W, fixed input, 1000VDC/3000VDC isolated & regulated single output DC-DC converter, SIP/DIP package

### Features:

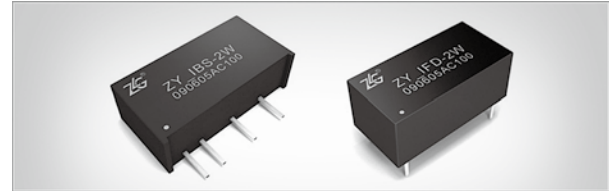
- High efficiency up to 79%.
- B: 1000VDC isolation, F: 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required, short circuit protection, -40°C~+85°C operating temperature.
- The SIP7 and DIP14 packages are pin-to-pin compatible with international & domestic similar product.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±5%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_IB(F)S-2W	1	2	-	4	6	-
ZY_IB(F)D-2W	14	1	-	11	9	7

NC:No Connection.



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505IBS/D-2W	5	4.75~5.25	5	40	400	67
ZY0512IBS/D-2W			12	16	166	78
ZY0515IBS/D-2W			15	13	133	79
ZY1205IBS/D-2W	12	11.4~12.6	5	40	400	70
ZY1212IBS/D-2W			12	16	166	77
ZY1215IBS/D-2W			15	13	133	79
ZY2405IBS/D-2W	24	22.8~25.2	5	40	400	66
ZY2412IBS/D-2W			12	16	166	77
ZY2415IBS/D-2W			15	13	133	78
ZY0505IFS/D-2W	5	4.75~5.25	5	40	400	67
ZY0512IFS/D-2W			12	16	166	78
ZY0515IFS/D-2W			15	13	133	79
ZY1205IFS/D-2W	12	11.4~12.6	5	40	400	70
ZY1212IFS/D-2W			12	16	166	77
ZY1215IFS/D-2W			15	13	133	79
ZY2405IFS/D-2W	24	22.8~25.2	5	40	400	66
ZY2412IFS/D-2W			12	16	166	77
ZY2415IFS/D-2W			15	13	133	78

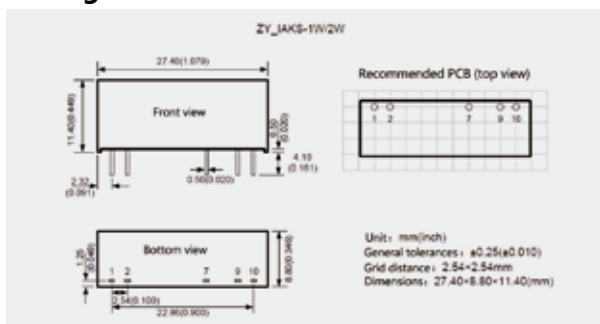
## ZY\_IAKS-1W/2W Series

1W/2W, fixed input, 1000VDC isolated & regulated, dual output DC-DC converter, SIP package

### Features:

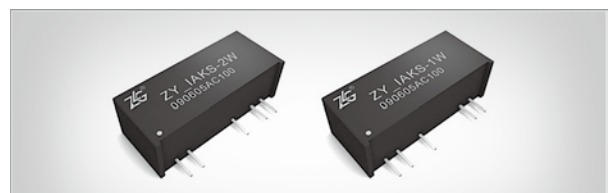
- Isolated and regulated dual output.
- High efficiency up to 71%.
- 1000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required and short circuit protection.
- Operating temperature: -40°C~+85°C.
- The SIP10 package is pin-to-pin compatible with international & domestic similar product.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±5%.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_IAKS-1W/2W	1	2	9	10	7	-

NC:No Connection.



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505IAKS-1W	5	4.75~5.25	±5	±10	±100	55
ZY0512IAKS-1W			±12	±4	±42	64
ZY0515IAKS-1W			±15	±3	±33	64
ZY1205IAKS-1W	12	11.4~12.6	±5	±10	±100	55
ZY1212IAKS-1W			±12	±4	±42	64
ZY1215IAKS-1W			±15	±3	±33	64
ZY2405IAKS-1W	24	22.8~25.2	±5	±10	±100	55
ZY2412IAKS-1W			±12	±4	±42	64
ZY2415IAKS-1W			±15	±3	±33	64
ZY0512IAKS-2W	5	4.75~5.25	±12	±8	±83	64
ZY0515IAKS-2W			±15	±7	±67	64
ZY0524IAKS-2W			±24	±4	±42	68
ZY1212IAKS-2W	12	11.4~12.6	±12	±8	±83	65
ZY1215IAKS-2W			±15	±7	±67	65
ZY1224IAKS-2W			±24	±4	±42	70
ZY2412IAKS-2W	24	22.8~25.2	±12	±8	±83	65
ZY2415IAKS-2W			±15	±7	±67	65
ZY2424IAKS-2W			±24	±4	±42	71

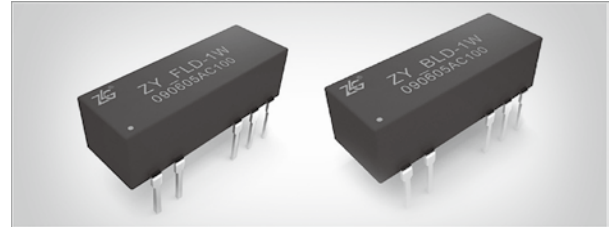
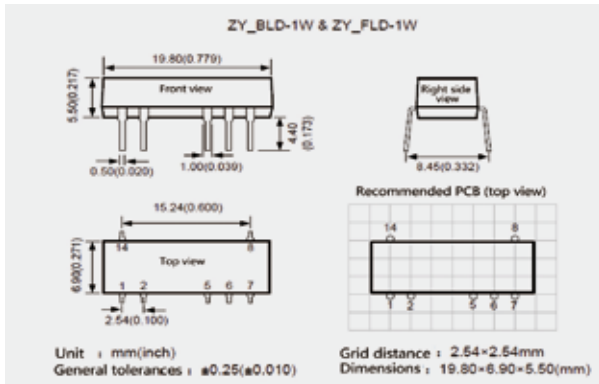
## ZY\_BLD-1W & ZY\_FLD-1W Series

1W, fixed input, 1000VDC/3000VDC isolated & unregulated, single output DC-DC converter, DIP package

### Features:

- High efficiency up to 74%.
- B :1000VDC isolation, F : 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10% or where the high accuracy is required.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_BLD-1W	1	2	-	5	6	7,8,14
ZY_FLD-1W	1	2	-	5	6	7,8,14

NC:No Connection

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0503BLD-1W	5	4.5~5.5	3.3	30	300	73
ZY0505BLD-1W			5	20	200	74
ZY0503FLD-1W			3.3	30	300	73
ZY0505FLD-1W			5	20	200	74

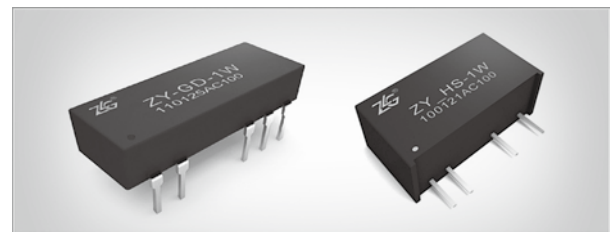
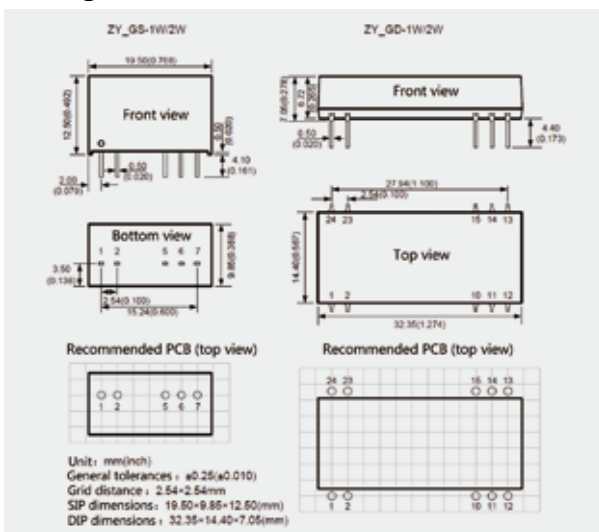
## ZY\_HS/D-1W/2W & ZY\_GS/D-1W/2W Series

1W/2W, fixed input, 6000VDC isolated & unregulated, single output DC-DC converter, SIP/DIP package

### Features:

- High efficiency up to 75%.
- 6000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- The DIP and SIP package is pin-to-pin compatible with international & domestic similar product.

### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_HS-1W/2W	1	2	-	5	7	-
ZY_GS-1W/2W	1	2	5	6	7	-
ZY_HD-1W/2W	1	2	-	10,15	12,13	14
ZY_GD-1W/2W	1	2	15	11,14	12	10,13,23,24

NC:No Connection.

### Product Selection

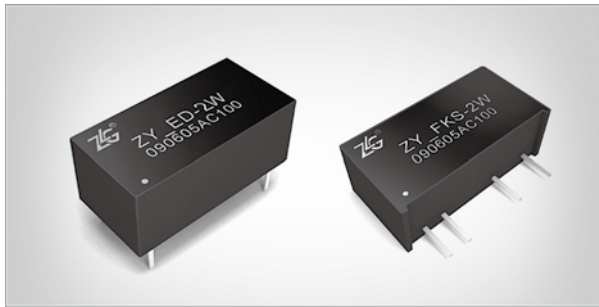
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505HS/D-1W	5	4.5~5.5	5	20	200	74
ZY0512HS/D-1W			12	8	83	72
ZY0515HS/D-1W			15	7	67	73
ZY0524HS/D-1W			24	4	42	74
ZY1205HS/D-1W	12	10.8~13.2	5	50	200	70
ZY1212HS/D-1W			12	8	83	71
ZY1215HS/D-1W			15	7	67	72
ZY1224HS/D-1W			24	4	42	74
ZY2405HS/D-1W	24	21.6~26.4	5	50	200	71
ZY2412HS/D-1W			12	8	83	73
ZY2415HS/D-1W			15	7	67	75
ZY2424HS/D-1W			24	4	42	77

# ZY\_ED-1W/2W & ZY\_FKD-1W/2W ZY\_ES-2W & ZY\_FKS-2W Series

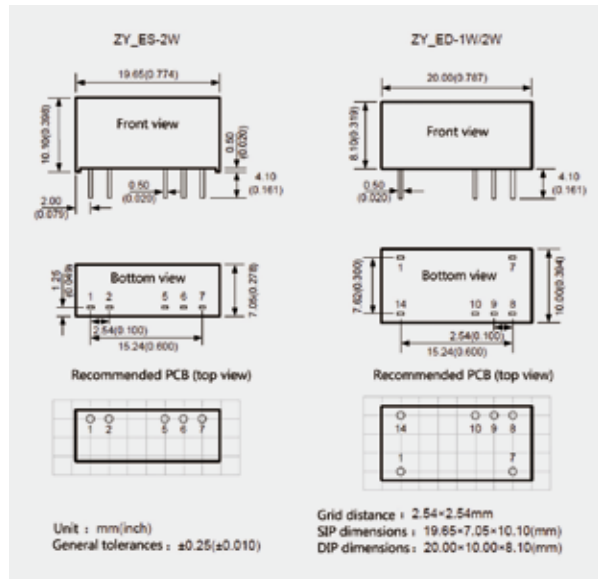
1W/2W, fixed input, 3000VDC isolated & unregulated, dual/single output DC-DC converter, SIP/DIP package

## Product Features

- Efficiency up to 85%.
- 3000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- Package: SIP7/DIP14 is pin-to-pin compatible with international & domestic similar product.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10% or where the high voltage accuracy is required.



## Package Dimensions



## Product Selection

Part Number	Input			Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Typical Current (mA)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0503ED-1W	5	4.5~5.5	--	±3.3	±15	±150	73
ZY0505ED-1W			270	±5	±10	±100	74
ZY0512ED-1W			253	±12	±4.2	±42	78
ZY0515ED-1W			253	±15	±3.3	±33	79
ZY1205ED-1W			111	±5	±10	±100	75
ZY1212ED-1W	12	10.8~13.2	107	±12	±4.2	±42	78
ZY1215ED-1W			105	±15	±3.3	±33	79
ZY2405ED-1W			54	±5	±10	±100	76
ZY2412ED-1W	24	21.6~26.4	53	±12	±4.2	±42	78
ZY2415ED-1W			52	±15	±3.3	±33	80
ZY0503FKD-1W	5	4.5~5.5	--	3.3	30	300	72
ZY0505FKD-1W			270	5	20	200	74
ZY0512FKD-1W			253	12	9	83	78
ZY0515FKD-1W			253	15	7	67	79
ZY1205FKD-1W			111	5	20	200	75
ZY1212FKD-1W	12	10.8~13.2	107	12	8.3	83	78
ZY1215FKD-1W			105	15	6.7	67	79
ZY2405FKD-1W			54	5	20	200	76
ZY2412FKD-1W	24	21.6~26.4	53	12	8.3	83	78
ZY2415FKD-1W			52	15	6.7	67	80
ZY0503ES/D-2W	5	4.5~5.5	547	±3.3	±20	±200	77
ZY0505ES/D-2W			540	±5	±20	±200	80
ZY0512ES/D-2W			513	±12	±8.3	±83	85
ZY0515ES/D-2W			506	±15	±6.7	±67	85
ZY1205ES/D-2W			222	±5	±20	±200	83
ZY1212ES/D-2W	12	10.8~13.2	213	±12	±8.3	±83	85
ZY1215ES/D-2W			211	±15	±6.7	±67	85
ZY2405ES/D-2W			110	±5	±20	±200	83
ZY2412ES/D-2W	24	21.6~26.4	107	±12	±8.3	±83	85
ZY2415ES/D-2W			104	±15	±6.7	±67	86
ZY0305FKS/D-2W	3.3	3~3.6	757	5	40	400	78
ZY0503FKS/D-2W	5	4.5~5.5	547	3.3	40	400	77
ZY0505FKS/D-2W			540	5	40	400	80
ZY0512FKS/D-2W			513	12	17	167	85
ZY0515FKS/D-2W			506	15	13	132	85
ZY1205FKS/D-2W			222	5	40	400	83
ZY1212FKS/D-2W	12	10.8~13.2	213	12	17	167	85
ZY1215FKS/D-2W			211	15	13	132	85
ZY2405FKS/D-2W			110	5	40	400	83
ZY2412FKS/D-2W	24	21.6~26.4	107	12	17	167	85
ZY2415FKS/D-2W			104	15	13	132	86

Function	VIN	GND	-V0	0V	+V0	NC
ZY_ES-2W	1	2	5	6	7	-
ZY_FKS-2W	1	2	-	5	7	-
ZY_ED-1W/2W	14	1	10	9	8	7
ZY_FKD-1W/2W	14	1	-	10	8	7

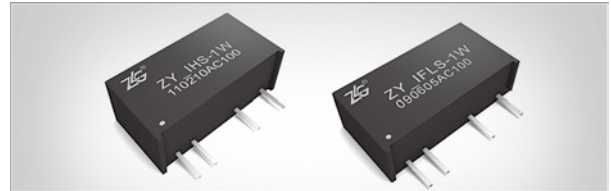
NC:No Connection.

## ZY\_IFLS-1W & ZY\_IHS-1W/2W

1W/2W, fixed input, 3000VDC/6000VDC isolated & regulated, single output DC-DC converter, SIP package

### Product Features

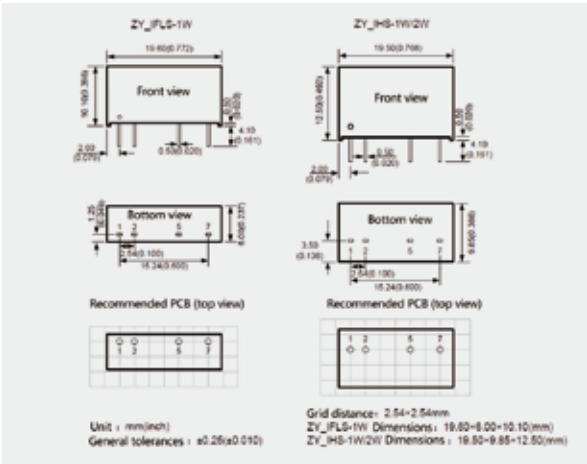
- Efficiency up to 77%.
- IFLS: 3000VDC isolation, HIS: 6000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- Package: SIP7 is compatible with international & domestic similar product.
- Short circuit protection.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±5%.



Function	VIN	GND	-VO	0V	+VO	NC
ZY_IFLS-1W	1	2	-	5	7	-
ZY_IHS-1W/2W	1	2	-	5	7	-

NC:No Connection.

### Package Dimensions



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505IFLS-1W	5	4.75~5.25	5	20	200	63
ZY0512IFLS-1W			12	8	83	74
ZY0515IFLS-1W			15	7	67	77
ZY1205IFLS-1W	12	11.4~12.6	5	20	200	64
ZY1212IFLS-1W			12	8	83	74
ZY1215IFLS-1W			15	7	67	75
ZY2405IFLS-1W	24	22.8~25.2	5	20	200	62
ZY2412IFLS-1W			12	8	83	77
ZY2415IFLS-1W			15	7	67	75
ZY0505IHS-1W/2W	5	4.75~5.25	5	20/40	200/400	74
ZY0512IHS-1W/2W			12	9/18	83/166	76
ZY0515IHS-1W/2W			15	7/14	67/134	79
ZY1205IHS-1W/2W	12	11.4~12.6	5	20/40	200/400	78
ZY1212IHS-1W/2W			12	9/18	83/166	80
ZY1215IHS-1W/2W			15	7/14	67/134	80
ZY2405IHS-1W/2W	24	22.8~25.2	5	20/40	200/400	79
ZY2412IHS-1W/2W			12	9/18	83/166	81
ZY2415IHS-1W/2W			15	7/14	67/134	81

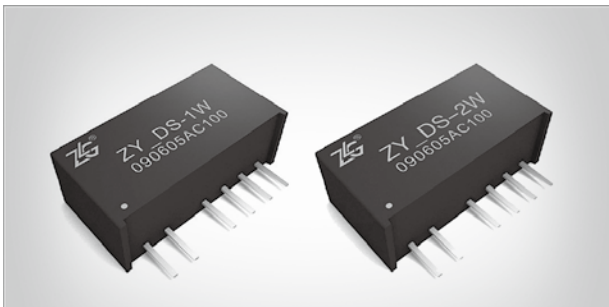
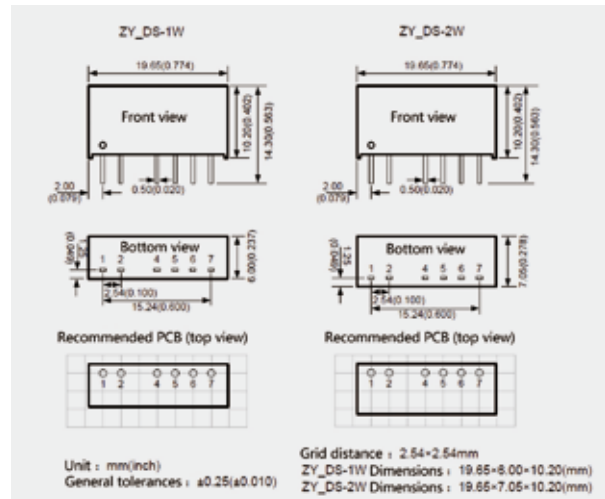
## ZY\_DS-1W/2W Series

1W, fixed input, 1000VDC isolated & unregulated, dual output DC-DC converter, SIP package

### Product Features

- Efficiency up to 85%.
- D: 1000VDC isolation.
- Casing and potting material comply with UL94-V0 standard.
- No heat sink required.
- Operating temperature: -40°C~+85°C.
- Package: SIP7 is pin-to-pin compatible with international and domestic similar products.
- Not suitable for the occasions where the input voltage fluctuation range is greater than ±10% or where the high voltage accuracy is required.

### Package Dimensions





Function	VIN	GND	-V01	+V01	-V02	+V02	NC
ZY_DS-1W	1	2	4	5	6	7	
ZY_DS-2W	1	2	4	5	6	7	-

NC:No Connection.

## Product Selection

Part Number	Input		Output Channel 1			Output Channel 2			Efficiency (%)
	Rated Voltage (VDC)	Input Range (VDC)	Nominal Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	Nominal Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
ZY050505DS-1W	5	4.5 ~ 5.5	5	10	100	5	10	100	74
ZY051212DS-1W			12	4	42	12	4	42	78
ZY051515DS-1W			15	3	33	15	3	33	80
ZY120505DS-1W	12	10.8 ~ 13.2	5	10	100	5	10	100	76
ZY121212DS-1W			12	4	42	12	4	42	78
ZY121515DS-1W			15	3	33	15	3	33	80
ZY240505DS-1W	24	21.6 ~ 26.4	5	10	100	5	10	100	72
ZY241212DS-1W			12	4	42	12	4	42	77
ZY241515DS-1W			15	3	33	15	3	33	76
ZY050505DS-2W	5	4.5 ~ 5.5	5	20	200	5	20	200	75
ZY051212DS-2W			12	8	83	12	8	83	80
ZY051515DS-2W			15	6	67	15	6	67	81
ZY120505DS-2W	12	10.8 ~ 13.2	5	20	200	5	20	200	78
ZY121212DS-2W			12	8	83	12	8	83	83
ZY121515DS-2W			15	6	67	15	6	67	85
ZY240505DS-2W	24	21.6 ~ 26.4	5	20	200	5	20	200	78
ZY241212DS-2W			12	8	83	12	8	83	82
ZY241515DS-2W			15	6	67	15	6	67	83

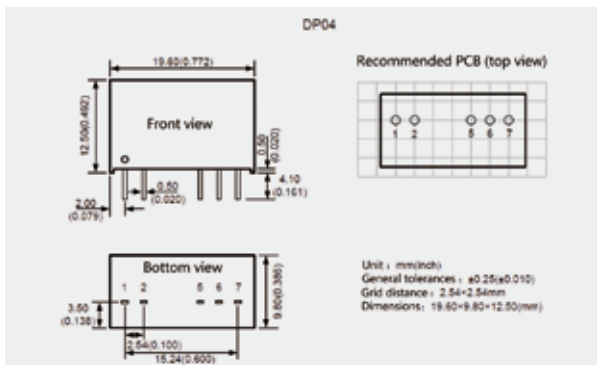
## IGBT Driver DP04

### Product Features

- Efficiency up to 82%.
- 3000VAC isolation.
- Casing and potting material comply with UL94-V0 standard.
- Operating temperature: -40°C~+105°C.
- No heat sink required.
- The package is pin-to-pin compatible with international & domestic similar product.



### Package Dimensions



Function	VIN	GND	-V0	0V	+V0	NC
DP04	1	2	5	6	7	-

NC:No Connection.

### Product Selection

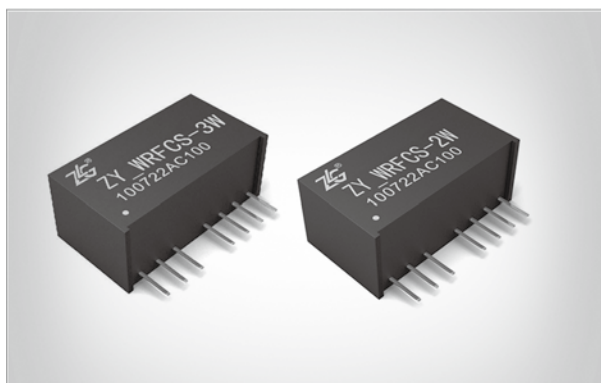
Part Number	Rated Input Voltage (Range) (VDC)	Output			Full load efficiency (% Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
DP04	12 (9-15)	+15/-8	+10/-8	+100/-80	82

# ZY\_WRECS-1W/2W/3W & ZY\_WRFCS-1W/2W/3W

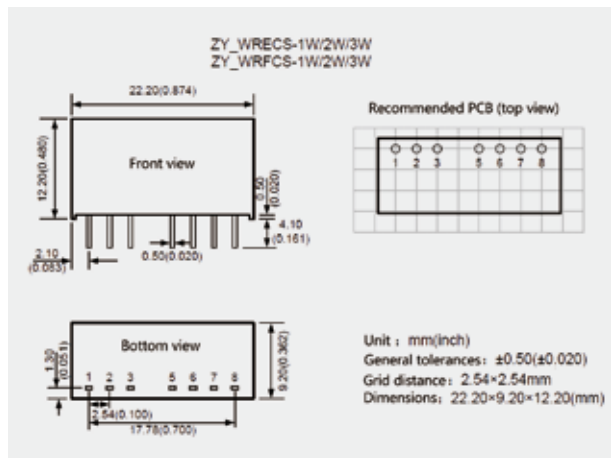
1W/2W/3W, 2:1 wide input, 3000VDC isolated & regulated, dual/single output DC-DC converter, SIP package

## Product Features

- 2:1 wide input.
- Efficiency up to 83%.
- Controllable output.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 3000VDC isolation.
- Short circuit protection (automatic recovery).



## Package Dimensions



Function	VIN	GND	CTRL	-VO	0V	+VO	CC	NC
ZY_WRECS-1W/2W/3W	2	1	3	8	7	6	-	5
ZY_WRFCS-1W/2W/3W	2	1	3	-	7	6	8	5

NC:No Connection.

## Product Selection

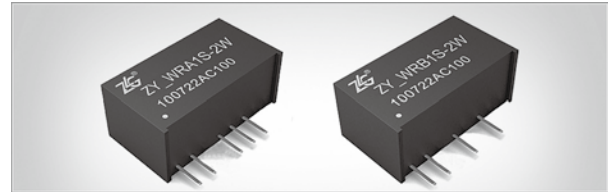
Part Number	Input		Output			Efficiency (%)		
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)			
ZY2403WRFCS-1W	24	18~36	3.3	30	303	70		
ZY2405WRFCS-1W			5	20	200	73		
ZY2409WRFCS-1W			9	11	111	76		
ZY2412WRFCS-1W			12	8	83	78		
ZY2415WRFCS-1W			15	7	67	76		
ZY1203WRFCS-1W6	12	9~18	3.3	50	500	76		
ZY1205WRFCS-2W			5	40	400	79		
ZY1209WRFCS-2W			9	22	222	83		
ZY1212WRFCS-2W			12	16	167	82		
ZY1215WRFCS-2W			15	13	133	82		
ZY1224WRFCS-2W			24	8	80	82		
ZY1205WRFCS-3W			5	60	600	80		
ZY1209WRFCS-3W			9	333	333	82		
ZY1212WRFCS-3W			12	25	250	84		
ZY1215WRFCS-3W			15	20	200	86		
ZY2405WRFCS-3W			24	18~36	5	60	600	81
ZY2409WRFCS-3W					9	333	333	83
ZY2412WRFCS-3W	12	25			250	85		
ZY2415WRFCS-3W	15	20			200	87		
ZY1205WRECS-2W	12	9~18	±5	±20	±200	75		
ZY1209WRECS-2W			±9	±11	±111	76		
ZY1212WRECS-2W			±12	±8	±83	79		
ZY1215WRECS-2W			±15	±7	±67	78		
ZY2405WRECS-2W	24	18~36	±5	±20	±200	76		
ZY2409WRECS-2W			±9	±11	±111	78		
ZY2412WRECS-2W			±12	±8	±83	79		
ZY2415WRECS-2W			±15	±7	±67	78		

# ZY\_WRA1S-1W/2W&ZY\_WRB1S-1W/2W Series

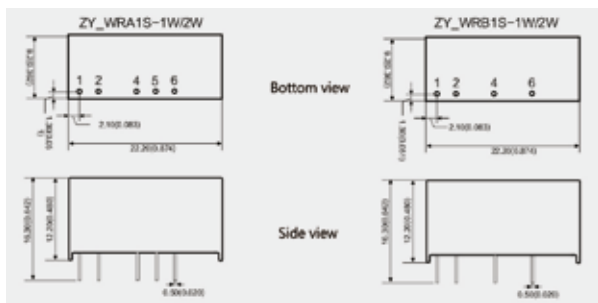
1W/2W, 2:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, SIP package

## Product Features

- 2:1 wide input.
- Input voltage: 4.5~9V, 9~18V, 18~36V.
- Conversion efficiency up to 83%.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



## Package Dimensions



Function	VIN	GND	-Vo	0V	+Vo
ZY_WRA1S-1W/2W	1	2	4	5	6
ZY_WRB1S-1W/2W	1	2	4	—	6

NC:No Connection.

## Product Selection

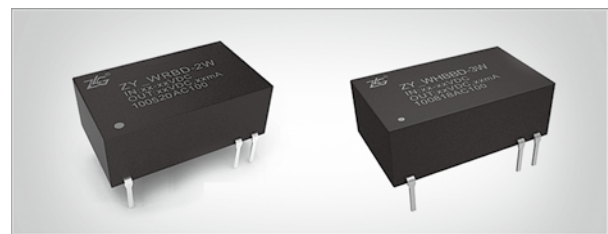
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0503WRB1S-1W	5	4.5~9	3.3	30	303	66
ZY0505WRB1S-1W			5	20	200	70
ZY0512WRB1S-1W			12	8	83	75
ZY0515WRB1S-1W			15	7	67	72
ZY1203WRB1S-1W			3.3	30	303	68
ZY1205WRB1S-1W	12	9~18	5	20	200	75
ZY1212WRB1S-1W			12	8	83	78
ZY1215WRB1S-1W			15	7	67	78
ZY2403WRB1S-1W			3.3	30	303	70
ZY2405WRB1S-1W			5	20	200	73
ZY2412WRB1S-1W	24	18~36	12	8	83	78
ZY2415WRB1S-1W			15	7	67	76
ZY0505WRB1S-2W			5	40	400	70
ZY0512WRB1S-2W			12	16	167	75
ZY0515WRB1S-2W			15	13	133	74
ZY1205WRB1S-2W	12	9~18	5	40	400	79
ZY1212WRB1S-2W			12	16	167	82
ZY1215WRB1S-2W			15	13	133	82
ZY1224WRB1S-2W			24	8	80	82
ZY2405WRB1S-2W			5	40	400	79
ZY2412WRB1S-2W	24	18~36	12	16	167	82
ZY2415WRB1S-2W			15	13	67	82
ZY2424WRB1S-2W			24	8	80	82
ZY0505WRA1S-2W			±5	±20	±200	70
ZY0512WRA1S-2W			±12	±8	±83	75
ZY0515WRA1S-2W	±15	±7	±67	74		

# ZY\_WRBD-2W & ZY\_WHBBD-3W Series

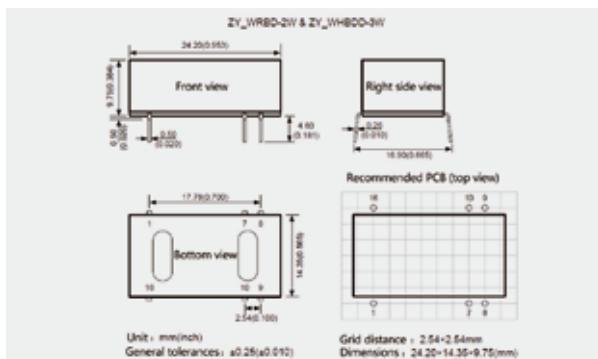
2W/3W, wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

## Product Features

- Conversion efficiency up to 83%.
- Input voltage: 9~18V, 18~36V.
- Output voltage: 5V, 12V, 15V.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



## Package Dimensions



Function	VIN	GND	-Vo	0V	+Vo	NC
ZY_WRBD-2W	16	1	-	10	9	7,8
ZY_WHBBD-3W	16	1	-	10	9	7,8

NC:No Connection.

## Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY1205WRBD-2W	12	9~18	5	40	400	79
ZY1212WRBD-2W			12	16	167	82
ZY1215WRBD-2W			15	13	133	82
ZY2405WRBD-2W	24	18~36	5	40	400	79
ZY2412WRBD-2W			12	16	167	82
ZY2415WRBD-2W			15	13	67	82
ZY2405WHBBD-3W	24	9~36	5	60	600	75
ZY2412WHBBD-3W			12	25	250	79
ZY2415WHBBD-3W			15	20	200	80

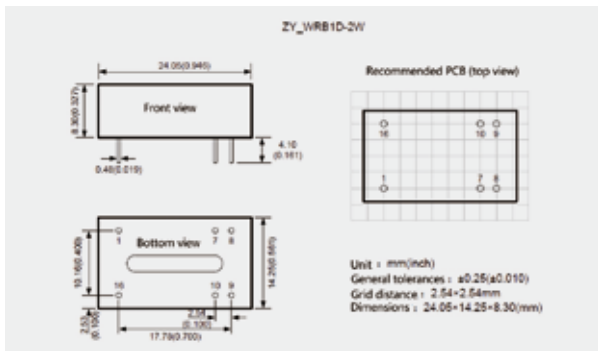
## ZY\_WRB1D-2W Series

2W, 2:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

### Product Features

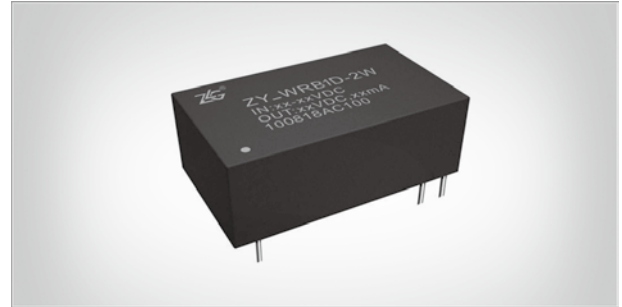
- 2:1 wide input.
- Input voltage: 9~18V, 18~36V.
- Conversion efficiency up to 82%.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).

### Package Dimensions



Function	VIN	GND	+Vo	-Vo	NC
ZY_WRB1D-2W	16	1	9	10	7,8

NC: No Connection.



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY1205WRB1D-2W	12	9~18	5	40	400	79
ZY1212WRB1D-2W			12	16	167	82
ZY1215WRB1D-2W			15	13	133	82
ZY2405WRB1D-2W	24	18~36	5	40	400	79
ZY2412WRB1D-2W			12	16	167	82
ZY2415WRB1D-2W			15	13	133	82

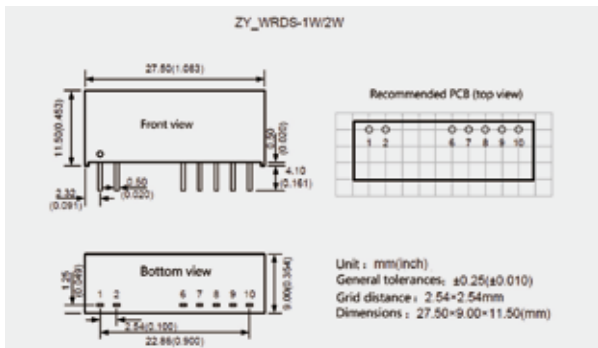
## ZY\_WRDS-1W/2W Series

1W/2W, 2:1 wide input, 1000VDC isolated & regulated, dual output DC-DC converter, SIP package

### Product Features

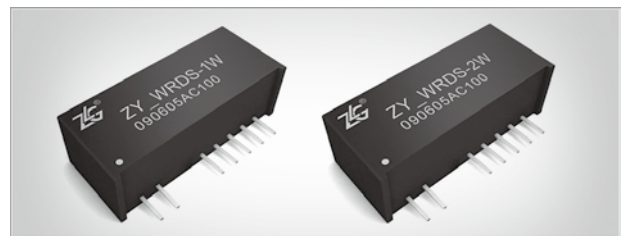
- 2:1 wide input.
- Input voltage: 9~18V, 18~36V.
- Conversion efficiency up to 83%.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1000VDC isolation.
- Short circuit protection (automatic recovery).

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Function	VIN	GND	+Vo1	-Vo1	CC	+Vo2	-Vo2
ZY_WRDS-1W/2W	2	1	6	7	8	10	9

NC: No Connection.



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY12050WRDS-2W	12	9~18	5, 5	20,20	200,200	70
ZY120512WRDS-2W			5, 12	20, 8	200,83	70
ZY121212WRDS-2W			12, 12	8, 8	83,83	75
ZY121515WRDS-2W	24	18~36	15, 15	7, 7	67,67	72
ZY24050WRDS-2W			5, 5	20,20	200,200	70
ZY241212WRDS-2W			12, 12	8, 8	83,83	75
ZY241515WRDS-2W			15, 15	7, 7	67,67	72

## ZY\_WRAD-3W & ZY\_WRBD-3W Series

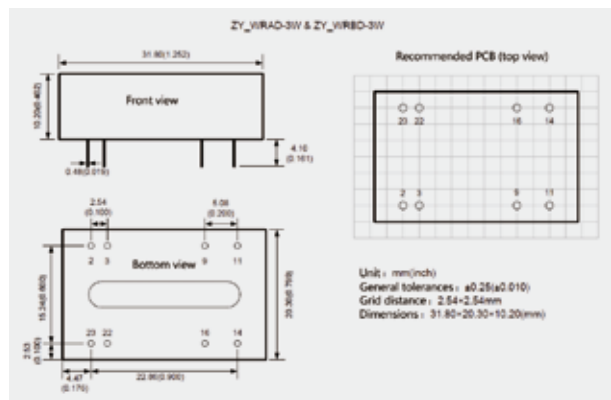
3W, 2:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 80%.
- Input voltage: 4.5~9V, 9~18V, 18~36V, 36~72V.
- Output voltage: 3.3V,5V,12V,15V/±5V,±12V,±15V.
- Output accuracy: ±1% typical value.
- 1500VDC isolation.
- Operating temperature: -40°C~+85°C.
- Short circuit protection (automatic recovery).



### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_WRAD-3W	22,23	2,3	11	9,16	14	-
ZY_WRBD-3W	22,23	2,3	-	16	14	9,11

NC:No Connection.

### Product Selection

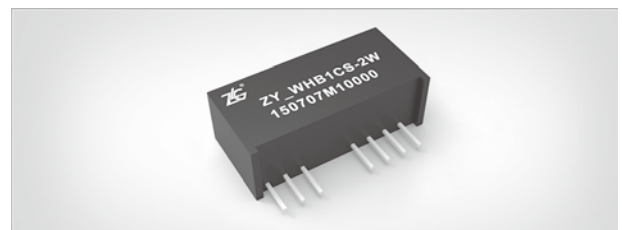
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY0505WRAD-3W	5	4.5~9	±5	±30	±300	69
ZY0512WRAD-3W			±12	±12	±125	73
ZY0515WRAD-3W			±15	±10	±100	74
ZY0505WRBD-3W			5	60	600	73
ZY0512WRBD-3W			12	25	250	75
ZY0515WRBD-3W	15	20	200	76		
ZY2405WRBD-3W	24	18~36	5	60	600	84
ZY2412WRBD-3W			12	25	250	88
ZY2415WRBD-3W			15	20	200	89

## ZY\_WHB1CS-2W Series

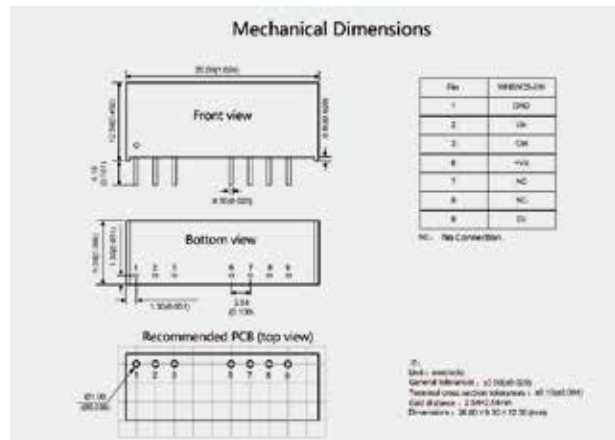
2W, 4:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, SIP package

### Product Features

- Efficiency up to 77%.
- Input voltage: 9~36V.
- Output voltage: 3.3V,5V,12V,15V.
- Controllable output.
- Output accuracy: ±2% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



### Package Dimensions



### Product Selection

Part Number	Rated Input Voltage (Range)	Output			Full load efficiency (%Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
ZY2403WHB1CS-1W6	24 (9-36)	3.3	50	500	72
ZY2405WHB1CS-2W		5	40	400	77
ZY2412WHB1CS-2W		12	17	167	77
ZY2415WHB1CS-2W		15	14	133	75

## ZY\_WHAD-3W & ZY\_WHBD-3W Series

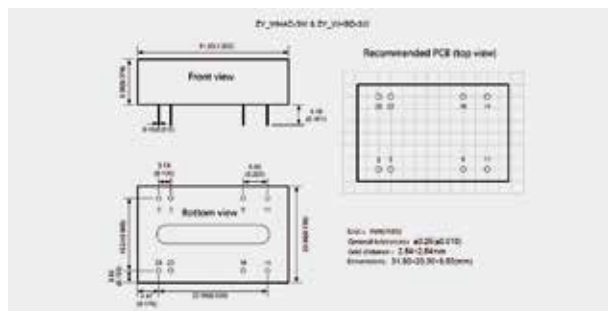
3W, 4:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 80%.
- Input voltage: 9~36V, 18~72V.
- Output voltage: 3.3V, 5V, 12V, 15V/±5V, ±12V, ±15V.
- Output accuracy: ±1% typical value.
- 1500VDC isolation.
- Operating temperature: -40°C~+85°C.
- Short circuit protection (automatic recovery).



### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_WHAD-3W	22,23	2,3	11	9,16	14	-
ZY_WHBD-3W	22,23	2,3	-	16	14	9,11

NC: No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY2405WHAD-3W	24	9~36	±5	±30	±300	74
ZY2412WHAD-3W			±12	±13	±125	78
ZY2415WHAD-3W			±15	±10	±100	80
ZY4805WHAD-3W	48	18~72	±5	±30	±300	74
ZY4812WHAD-3W			±12	±13	±125	78
ZY4815WHAD-3W			±15	±10	±100	80
ZY2403WHBD-3W	24	9~36	3.3	90	900	73
ZY2405WHBD-3W			5	60	600	75
ZY2412WHBD-3W			12	25	250	79
ZY2415WHBD-3W			15	20	200	80
ZY4805WHBD-3W			5	60	600	78
ZY4812WHBD-3W			12	25	250	80
ZY4815WHBD-3W	15	20	200	80		

## ZY\_WHB1D-3W Series

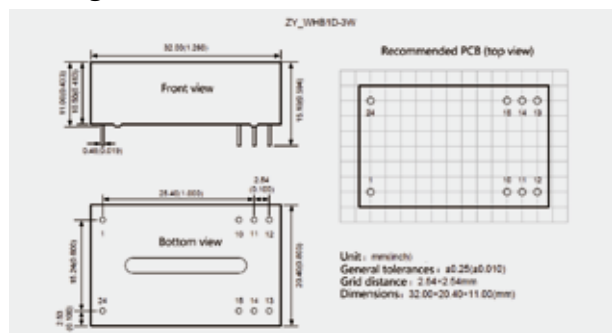
3W, 4:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 80%.
- Input voltage: 9~36V, 18~72V.
- Output voltage: 3.3V, 5V, 12V, 15V.
- Output accuracy: ±1% typical value.
- 1500VDC isolation.
- Operating temperature: -40°C~+85°C.
- Short circuit protection (automatic recovery).



### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
ZY_WHB1D-3W	1,24	12,13	-	10,15	11,14	-

NC: No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (V)	Minimum Current (mA)	Maximum Current (mA)	
ZY2403WHB1D-3W	24	9~36	3.3	90	900	73
ZY2405WHB1D-3W			5	60	600	75
ZY2412WHB1D-3W			12	25	250	79
ZY2415WHB1D-3W			15	20	200	80
ZY4805WHB1D-3W			5	60	600	78
ZY4812WHB1D-3W			12	25	250	80
ZY4815WHB1D-3W	15	20	200	80		

## E\_URAD-6W & E\_URBD-6W Series

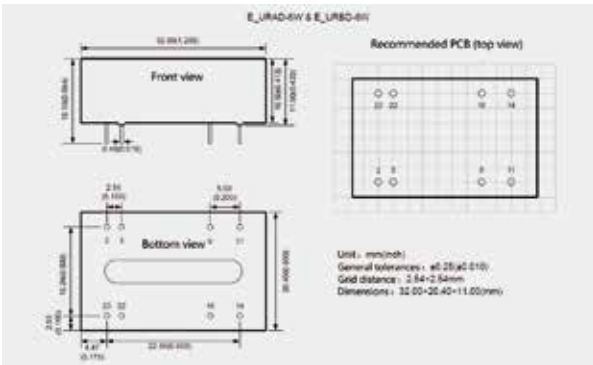
6W, 2:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 88%.
- Input voltage: +9~18V, +18~36V, +36~72V.
- Output voltage: ±5V, ±12V, ±15V/5V, 12V, 15V, 24V.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHz.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_URAD-6W	22,23	2,3	11	9,16	14	-
E_URBD-6W	22,23	2,3	-	16	14	11

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E1205URAD-6W	12	9~18	±5	±60	±600	81
E1212URAD-6W	12	9~18	±12	±25	±250	85
E1215URAD-6W	12	9~18	±15	±20	±200	85
E1205URBD-6W	12	9~18	5	120	1200	81
E1212URBD-6W	12	9~18	12	50	500	85
E1215URBD-6W	12	9~18	15	40	400	85
E1224URBD-6W	12	9~18	24	25	250	85
E2405URAD-6W	24	18~36	±5	±60	±600	83
E2412URAD-6W	24	18~36	±12	±25	±250	87
E2415URAD-6W	24	18~36	±15	±20	±200	87
E2405URBD-6W	24	18~36	5	120	1200	83
E2412URBD-6W	24	18~36	12	50	500	87
E2415URBD-6W	24	18~36	15	40	400	88
E2424URBD-6W	24	18~36	24	25	250	88
E4805URAD-6W	24	36~72	±5	±60	±600	83
E4812URAD-6W	24	36~72	±12	±25	±250	87
E4815URAD-6W	24	36~72	±15	±20	±200	88
E4805URBD-6W	24	36~72	5	120	1200	83
E4812URBD-6W	24	36~72	12	50	500	88
E4815URBD-6W	24	36~72	15	40	400	88
E4824URBD-6W	24	36~72	24	25	250	89

## E\_URADD-6W & URBD-6W Series

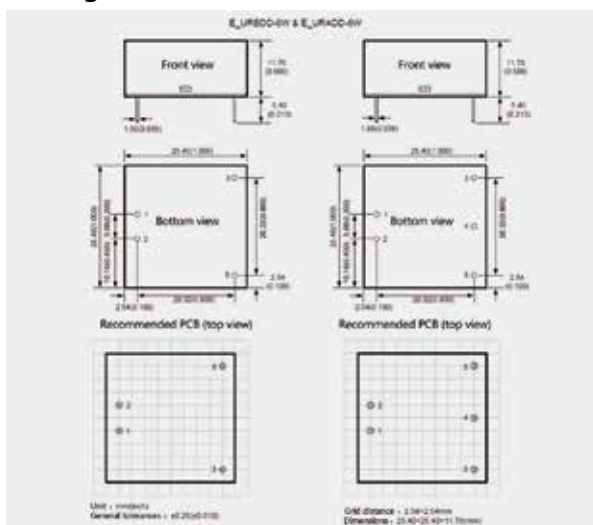
6W, 2:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 88%.
- Input voltage: +9~18V, +18~36V, +36~72V.
- Output voltage: ±5V, ±12V, ±15V/5V, 12V, 15V, 24V.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHz.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



### Package Dimensions



Function	VIN	GND	-VO	0V	+VO	NC
E_URBDD-6W	1	2	-	5	3	-
E_URADD-6W	1	3	5	4	3	-

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E1205URADD-6W	12	9~18	±5	±60	±600	81
E1212URADD-6W	12	9~18	±12	±25	±250	85
E1215URADD-6W	12	9~18	±15	±20	±200	85
E1205URBDD-6W	12	9~18	5	120	1200	81
E1212URBDD-6W	12	9~18	12	50	500	85
E1215URBDD-6W	12	9~18	15	40	400	85
E1224URBDD-6W	12	9~18	24	25	250	85
E2405URADD-6W	24	18~36	±5	±60	±600	83
E2412URADD-6W	24	18~36	±12	±25	±250	87
E2415URADD-6W	24	18~36	±15	±20	±200	87
E2405URBDD-6W	24	18~36	5	120	1200	83
E2412URBDD-6W	24	18~36	12	50	500	87
E2415URBDD-6W	24	18~36	15	40	400	87
E2424URBDD-6W	24	18~36	24	25	250	87
E4805URADD-6W	48	36~72	±5	±60	±600	83
E4812URADD-6W	48	36~72	±12	±25	±250	87
E4815URADD-6W	48	36~72	±15	±20	±200	88
E4805URBDD-6W	48	36~72	5	120	1200	83
E4812URBDD-6W	48	36~72	12	50	500	88
E4815URBDD-6W	48	36~72	15	40	400	88
E4824URBDD-6W	48	36~72	24	25	250	89

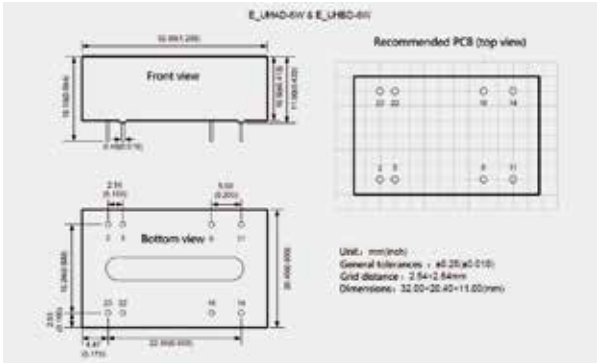
## E\_UHAD-6W & E\_UHBD-6W Series

6W, 4:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 85%.
- Input voltage: +9~36V.
- Output voltage: ±5V, ±12V, ±15V/5V, 12V, 15V, 24V.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHz.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).

### Package Dimensions



Function	VIN	GND	-V0	0V	+V0	NC
E_UHAD-6W	22,23	2,3	11	9,16	14	-
E_UHBD-6W	22,23	2,3	-	16	14	11

NC:No Connection.



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (DCV)	Input Range (DCV)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E2405UHAD-6W	24	9~36	±5	±60	±600	81
E2412UHAD-6W	24	9~36	±12	±25	±250	85
E2415UHAD-6W	24	9~36	±15	±20	±200	85
E2405UHBD-6W	24	9~36	5	120	1200	81
E2412UHBD-6W	24	9~36	12	50	500	84
E2415UHBD-6W	24	9~36	15	40	400	85
E2424UHBD-6W	24	9~36	24	25	250	85

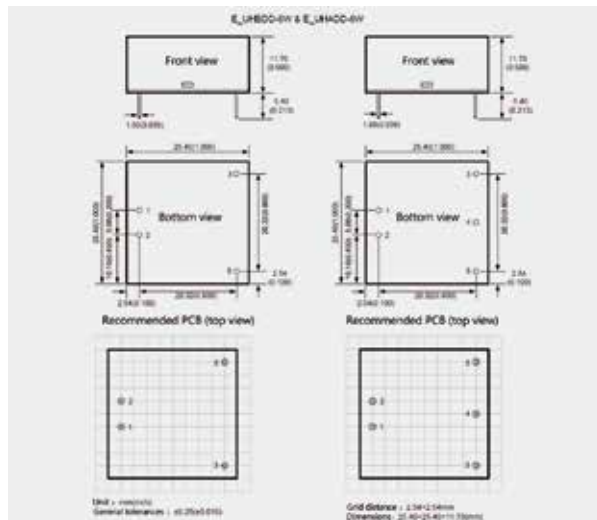
## E\_UHADD-6W & UHBDD-6W Series

6W, 4:1 wide input, 1500VDC isolated & regulated, dual/single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 88%.
- Input voltage: +9~36V.
- Output voltage: ±5V, ±12V, ±15V/5V, 12V, 15V, 24V.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHz.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).

### Package Dimensions



Function	VIN	GND	-V0	0V	+V0	NC
E_UHBDD-6W	1	2	-	5	3	-
E_UHADD-6W	1	3	5	4	3	-

NC:No Connection.

### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (DCV)	Input Range (DCV)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E2405UHADD-6W	24	18~72	±5	±60	±600	81
E2412UHADD-6W	24	18~72	±12	±25	±250	85
E2415UHADD-6W	24	18~72	±15	±20	±200	85
E2405UHBDD-6W	24	18~72	5	120	1200	81
E2412UHBDD-6W	24	18~72	12	50	500	84
E2415UHBDD-6W	24	18~72	15	40	400	85
E2424UHBDD-6W	24	18~72	24	25	250	85



## E\_UHBD-8W Series

8W, 4:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

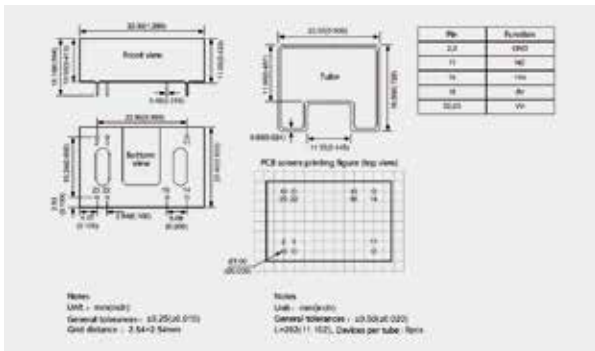
### Product Features

- Conversion efficiency up to 85%.
- Input voltage: 9~36V.
- Output voltage: 5V, 12V, 15V, 24V.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Input undervoltage protection, short circuit protection (automatic recovery).



NC:No Connection.

### Package Dimensions



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E2405UHBD-8W	24	9~36	5	150	1500	81
E2412UHBD-8W	24	9~36	12	66	666	84
E2415UHBD-8W	24	9~36	15	53	533	85
E2424UHBD-8W	24	9~36	24	33	333	85

## E\_URBD-10W Series

10W, 2:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

### Product Features

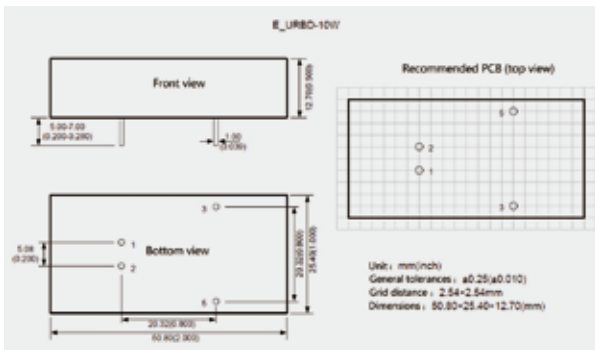
- Conversion efficiency up to 88%.
- Input voltage: +9~18V, +18~36V, +36~72V.
- Output voltage: 5V, 12V, 15V, 24V.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHz.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



Function	VIN	GND	-V0	0V	+V0	NC
E_URBD-10W	1	2	-	5	3	-

NC:No Connection.

### Package Dimensions



### Product Selection

Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E1205URBD-10W	12	9~18	5	200	2000	82
E1212URBD-10W	12	9~18	12	83	830	86
E1215URBD-10W	12	9~18	15	67	670	87
E1224URBD-10W	12	9~18	24	42	416	88
E2405URBD-10W	24	18~36	5	200	2000	82
E2412URBD-10W	24	18~36	12	83	830	86
E2415URBD-10W	24	18~36	15	67	670	87
E2424URBD-10W	24	18~36	24	42	416	88
E4805URBD-10W	48	36~72	5	200	2000	82
E4812URBD-10W	48	36~72	12	83	830	86
E4815URBD-10W	48	36~72	15	67	670	87
E4824URBD-10W	48	36~72	24	42	416	88

## E\_URAD-10W Series

10W, 2:1 wide input, 1500VDC isolated & regulated, dual output DC-DC converter, DIP package

### Product Features

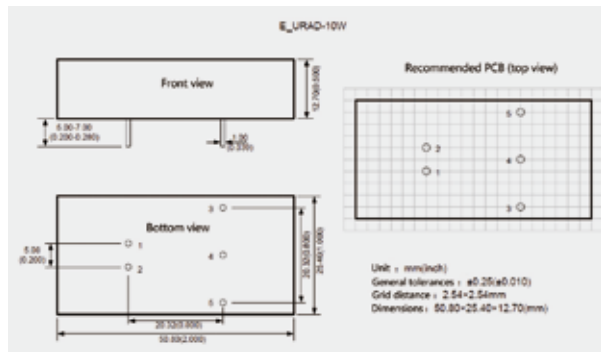
- Conversion efficiency up to 87%.
- Input voltage: +9~18V , +18~36V , +36~72V.
- Output voltage: ±5V, ±12V, ±15V.
- Operating temperature: -40°C~+85°C.
- Switching frequency: 300KHZ.
- 1500VDC isolation.
- Short circuit protection (automatic recovery).



Function	VIN	GND	-VO	0V	+VO	NC
E_URAD-10W	1	2	5	4	3	-

NC:No Connection.

### Package Dimensions



### Product Selection

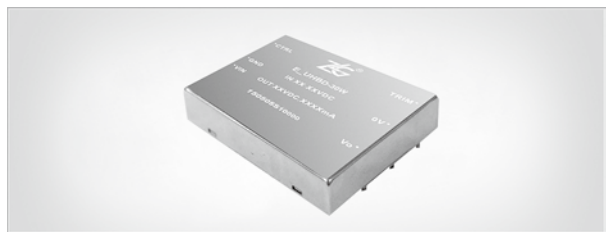
Part Number	Input		Output			Efficiency (%)
	Rated Voltage (V)	Input Range (V)	Nominal Voltage (DCV)	Minimum Current (mA)	Maximum Current (mA)	
E1205URAD-10W	12	9~18	±5	±100	±1000	82
E1212URAD-10W	12	9~18	±12	±42	±416	86
E1215URAD-10W	12	9~18	±15	±33	±333	87
E2405URAD-10W	24	18~36	±5	±100	±1000	82
E2412URAD-10W	24	18~36	±12	±42	±416	86
E2415URAD-10W	24	18~36	±15	±33	±333	87
E4805URAD-10W	48	36~72	±5	±100	±1000	82
E4812URAD-10W	48	36~72	±12	±42	±416	86
E4815URAD-10W	48	36~72	±15	±33	±333	87

## E\_UHBD-30W Series

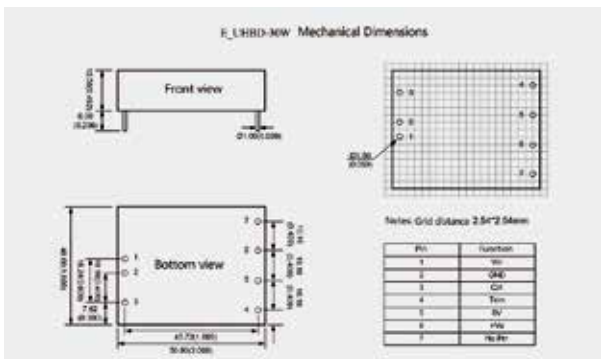
30W, 4:1 wide input, 1500VDC isolated & regulated, single output DC-DC converter, DIP package

### Product Features

- Conversion efficiency up to 88%.
- Input voltage: 9~36V.
- Output voltage: 5V, 12V, 15V.
- Output accuracy: ±1% typical value.
- Operating temperature: -40°C~+85°C.
- 1500VDC isolation.
- Input undervoltage protection, short circuit protection (automatic recovery).



### Package Dimensions



### Product Selection

Part Number	Rated Input Voltage (Range) (VDC)	Output			Full load efficiency (% Typ)
		Rated Voltage (VDC)	Minimum Current (mA)	Maximum Current (mA)	
E2405UHBD-30W	24 (9-36)	5	600	6000	88
E2412UHBD-30W		12	250	2500	88
E2415UHBD-30W		15	200	2000	88

## CAN-bus Isolation Transceiver

CAN-bus isolation transceiver represented by CTM1051KT is developed by ZHIYUAN Electronics, which can provide CAN transceivers with 2500VDC/3500VDC electrical isolation. This section will introduce parameters and designs of CTM series CAN-bus isolation transceiver and thereby create value for customers.

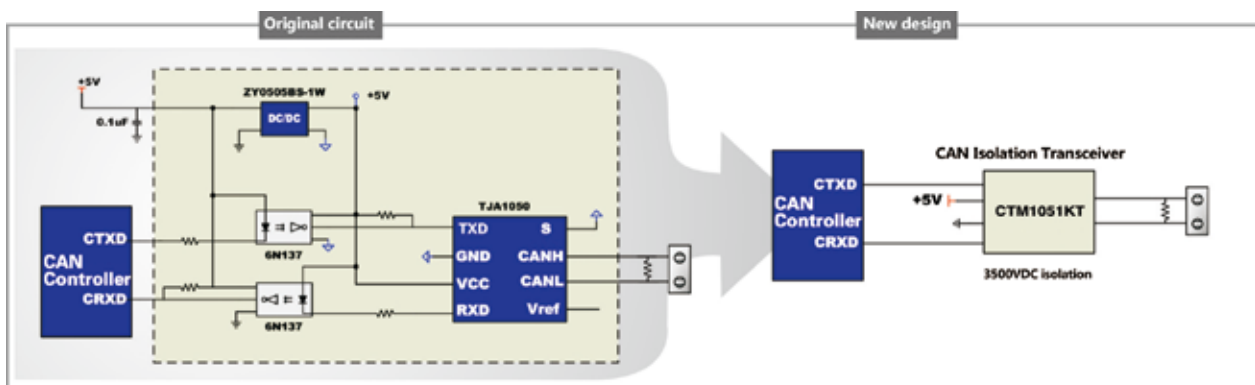


### Product Features

- Integrated with isolation and ESD protection function.
- CAN transceiver is fully in accordance with ISO 11898 standard.
- Rate up to 1Mbps.
- 2500VDC/3500VDC isolation.
- Operating temperature: -40°C~85°C/ -40°C~105°C.
- Low EME ;
- High EMS ;
- No external component required.
- At least 110 nodes can be connected.
- Well characteristics at high and low temperature, meeting the technical requirements of industrial products.

With the rapid popularization of CAN-bus today, the applications of CAN-bus are also diversified. CAN-bus network with large-scale and long-distance can be seen everywhere. Therefore, if the design of single CAN-bus node is not properly in circuit, the poor communication of bus is often occurred, even the entire CAN network system is damaged because of the transceiver circuit; especially in the harsh environment applications, the existence of this danger is more common! For avoiding unnecessary damage and improving reliability, the protection measures should

be taken so as to reduce risk and improve performance in CAN-bus node designing. Under normal circumstances, we should take some isolation measures between CAN controllers and CAN transceivers, as well as add the bus protection devices on CAN-bus. Compared with the traditional design, CAN isolation transceiver represented by CTM1051KT can help users reduce overall design risk and procurement costs with higher integration, reliability and more competitive price.



Comparison of new design and traditional circuit

### Dual-channel CAN Isolation Transceiver

Part Number	Operating Voltage	Baudrate	Number of Nodes	Operating Temperature	Isolation Voltage	Bus Protection	Package	Notes
CTM8251KD	4.75V ~ 5.25V	5k-1Mbps	110 个	-40°C ~ +85°C	2500VDC	-	DIP12	Dual-channel,Universal
CTM8251KAD	3.15V ~ 3.45V	5k-1Mbps	110 个	-40°C ~ +85°C	2500VDC	-	DIP12	Dual-channel,Universal

### Mini Volume CAN Isolation Transceiver

Part Number	Operating Voltage	Baudrate	Number of Nodes	Operating Temperature	Isolation Voltage(VDC)	Bus Protection	Package	Notes
CTM1051M	4.75~7.25V	40K-1Mbps	110 个	-40~+105	2500	-	DIP	Mini Volume
CTM1051AM	3.15~3.45V	40K-1Mbps	110 个	-40~+105	2500	-	DIP	Mini Volume

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**VOL.001**