

### FEATURES

- 5 WATTS REGULATED OUTPUT POWER
- STANDARD 1.25" X 0.80" X 0.40" Size
- HIGH EFFICIENCY UP TO 81%
- 2 : 1 WIDE INPUT VOLTAGE RANGE
- OVERLOAD AND CONTINUOUS SHORT CIRCUIT PROTECTION
- STANDARD 24 PIN DIP PACKAGE
- 2-YEAR WARRANTY

The *Stardust* series offer 5 Watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71°C (DP type) and 85°C (DM type) ambient temperature. It offers a 2:1 wide input voltage of 9-18, 18-36 or 36-72 VDC.

### Table of MODELS

#### SS Series

Model Name	Vin Range	Output	Max. Output Current	Input Current Full load	Capacitive Load max.	Efficiency (%)
*SS05-1203-DP2i	9-18VDC	3.3VDC	1500mA	572mA	2200 μF	72
*SS05-1205-DP2i	9-18VDC	5VDC	1000mA	548mA	1000 μF	76
*SS05-1212-DP2i	9-18VDC	12VDC	420mA	525mA	220 μF	80
*SS05-1215-DP2i	9-18VDC	15VDC	340mA	531mA	150 μF	80
SS05-2403-DP2i	18-36VDC	3.3VDC	1500mA	286mA	2200 μF	72
*SS05-2405-DP2i	18-36VDC	5VDC	1000mA	263mA	1000 μF	79
*SS05-2412-DP2i	18-36VDC	12VDC	420mA	259mA	220 μF	81
*SS05-2415-DP2i	18-36VDC	15VDC	340mA	262mA	150 μF	81
*SS05-4803-DP2i	36-75VDC	3.3VDC	1500mA	141mA	2200 μF	73
*SS05-4805-DP2i	36-75VDC	5VDC	1000mA	133mA	1000 μF	78
*SS05-4812-DP2i	36-75VDC	12VDC	420mA	129mA	220 μF	81
*SS05-4815-DP2i	36-75VDC	15VDC	340mA	131mA	150 μF	81
*SS05-1203-DM2i	9-18VDC	3.3VDC	1500mA	572mA	2200μF	72
*SS05-1205-DM2i	9-18VDC	5VDC	1000mA	548mA	1000μF	76
*SS05-1212-DM2i	9-18VDC	12VDC	420mA	525mA	220μF	80
*SS05-1215-DM2i	9-18VDC	15VDC	340mA	531mA	150μF	80
*SS05-2403-DM2i	18-36VDC	3.3VDC	1500mA	286mA	2200μF	72
*SS05-2405-DM2i	18-36VDC	5VDC	1000mA	263mA	1000μF	79
*SS05-2412-DM2i	18-36VDC	12VDC	420mA	259mA	220μF	80
*SS05-2415-DM2i	18-36VDC	15VDC	340mA	262mA	150μF	80
*SS05-4803-DM2i	36-75VDC	3.3VDC	1500mA	141mA	2200μF	72
*SS05-4805-DM2i	36-75VDC	5VDC	1000mA	133mA	1000μF	79
*SS05-4812-DM2i	36-75VDC	12VDC	420mA	129mA	220μF	81
*SS05-4815-DM2i	36-75VDC	15VDC	340mA	131mA	150μF	81

**SD Series**

Model Name	Vin Range	Output	Max. Output Current	Input Current Full load	Capacitive		Efficiency (%)
					Load max.		
*SD05-12B05-DP2i	9-18VDC	±5VDC	±500mA	541mA	±330µF		77
*SD05-12B12-DP2i	9-18VDC	±12VDC	±210mA	525mA	±100 µF		80
*SD05-12B15-DP2i	9-18VDC	±15VDC	±167mA	521mA	±68 µF		80
SD05-24B05-DP2i	18-36VDC	±5VDC	±500mA	267mA	±330µF		78
SD05-24B12-DP2i	18-36VDC	±12VDC	±210mA	259mA	±100 µF		81
SD05-24B15-DP2i	18-36VDC	±15VDC	±167mA	257mA	±68 µF		81
SD05-48B05-DP2i	36-75VDC	±5VDC	±500mA	135mA	±330µF		77
SD05-48B12-DP2i	36-75VDC	±12VDC	±210mA	129mA	±100 µF		81
SD05-48B15-DP2i	36-75VDC	±15VDC	±167mA	128mA	±68 µF		81
*SD05-12B05-DM2i	9-18VDC	±5VDC	±500mA	541mA	±330µF		77
*SD05-12B12-DM2i	9-18VDC	±12VDC	±210mA	525mA	±100 µF		80
*SD05-12B15-DM2i	9-18VDC	±15VDC	±167mA	521mA	±68 µF		80
*SD05-24B05-DM2i	18-36VDC	±5VDC	±500mA	267mA	±330µF		78
*SD05-24B12-DM2i	18-36VDC	±12VDC	±210mA	259mA	±100 µF		81
*SD05-24B15-DM2i	18-36VDC	±15VDC	±167mA	257mA	±68 µF		81
*SD05-48B05-DM2i	36-75VDC	±5VDC	±500mA	135mA	±330µF		77
*SD05-48B12-DM2i	36-75VDC	±12VDC	±210mA	129mA	±100 µF		81
*SD05-48B15-DM2i	36-75VDC	±15VDC	±167mA	128mA	±68 µF		81

**NOTE:** > For models with \* marks, please contact Tensor C. Cribbs [tensor-chen@hec-group.com.tw](mailto:tensor-chen@hec-group.com.tw)  
 > Typical lead time for engineering sample: 4~6 weeks

## TECHNICAL SPECIFICATION

### INPUT SPECIFICATION

Input voltage range	12V nominal input	9 - 18VDC
	24V nominal input	18 - 36VDC
	48V nominal input	36 - 75VDC
Input filter		Pi type
Input reflected ripple current	Nominal Vin and full load	20mA p-p
Start up time	Nominal Vin and constant resistor load	450 ms max.
Under voltage shut down	12V nominal input	8VDC
	24V nominal input	16VDC
	48V nominal input	32VDC

### OUTPUT SPECIFICATIONS

Output power		5 Watts max.
Voltage accuracy	Full load and nominal Vin	±1%
Line regulation	LL to HL at Full Load	±0.2%
Load regulation (10% Load to 100% Load)	Single	±0.5%
	Dual	±1.5%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL	±5%
Ripple and noise	20MHZ bandwidth	100mVp-p
Temperature coefficient		±0.02%/°C,max
Transient response recovery time	25% load step change	500µS
Rising time		10ms
Over load protection	% of FL at nominal input	150% typical
Short circuit protection		Continuous, auto recovery

### GENERAL SPECIFICATIONS

Efficiency		See above table
Isolation voltage	Input to Output, standard	1600VDC,min
Isolation resistance		10 <sup>9</sup> ohms, min
Isolation capacitance		1,000pF typical
Switching frequency		300KHz, typical
Case material		Non-conductive black plastic, or Metal with no-conductive Base plate
Potting material		Silicone

Dimensions	1.25" X 0.80" X 0.40" (31.7 X 20.3 X 10.2 mm <sub>3</sub> )		
Weight	DIP	TBD	
	SMD	TBD	

**ENVIRONMENTAL SPECIFICATIONS**

Operating ambient temperature	DP Type (Plastic Case)	-25°C ~ +71°C (no derating)
	DM Type (Metal Case)	-40°C ~ +85°C (no derating)
Thermal shock	MIL-STD-810F	
Vibration	MIL-STD-810F	
Relative humidity	5% to 95% RH	

**EMC CHARACTERISTICS**

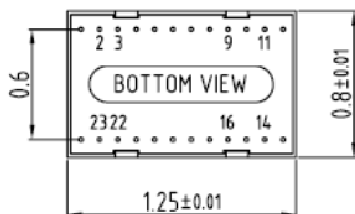
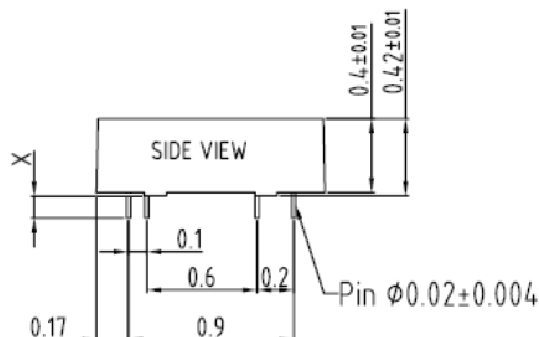
EMI	EN55022	Class B with external circuit		
ESD	EN61000-4-2	Air	± 8KV	Pre. Criteria A
		Contact	± 6KV	
Radiated immunity	EN61000-4-3	10V/m	Pre. Criteria A	
Fast transient	EN61000-4-4	± 2KV	Pre. Criteria B	
Surge	EN61000-4-5	± 1KV	Pre. Criteria B	
Conducted immunity	EN61000-4-6	10Vr.m.s	Pre. Criteria A	

- 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.

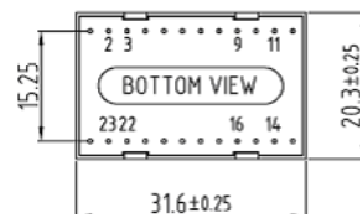
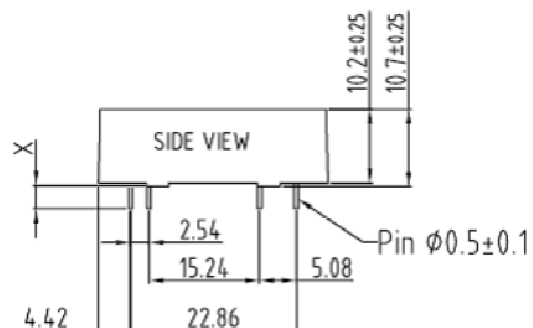
**MECHANICAL DIMENSION**

**Pin Length X –**

Short pin: 3.0mm ± 0.1mm  
 Middle pin: 3.8mm ± 0.1mm  
 Long pin: 5.0mm ± 0.1mm



Unit : inch



Unit : mm

PIN ASSIGNMENT					
PIN	SS Series	SD Series	PIN	SS Series	SD Series
2	-INPUT (GND)	-INPUT (GND)	14	+OUTPUT	+OUTPUT
3	-INPUT (GND)	-INPUT (GND)	16	-OUTPUT	COMMON
9	NC	COMMON	22	+INPUT (Vcc)	+INPUT (Vcc)
11	NC	-OUTPUT	23	+INPUT (Vcc)	+INPUT (Vcc)