

## 60DAW\_1.6 Series

60W - Single Output - Wide Input - Isolated & Regulated  
DIP DC-DC Converter

### DC-DC Converter

60 Watt

- ⊕ High efficiency up to 91%
- ⊕ 2:1 wide input voltage range
- ⊕ Isolation voltage 1600VDC
- ⊕ Six-sided metal shield
- ⊕ Short circuit protection (SCP) (automatic recovery)
- ⊕ Operating temperature: -40°C to +85°C
- ⊕ Over load protection
- ⊕ Over temperature protection
- ⊕ Industry standard pinout
- ⊕ Remote On/Off

The 60DAW\_1.6 series offers 60W of output, 2:1 wide input voltage of 18-36VDC, 36-72VDC and features 1600VDC isolation, six-sided metal shield over current and short circuit protection.

All models are particularly suited to industry control systems, semiconductor equipment, wireless network, telecom/datacom, measurement etc.



Common specifications	
Cooling:	Free air convection
Short circuit protection:	Hiccup, auto-recovery
Operation temperature range:	-40°C~+85°C / refer to temperature derating graph (with derating)
Storage temperature range:	-55°C~+125°C
Case temperature:	+110°C
Lead temperature range:	260°C MAX, 1.5mm from case for 10 sec
Switching frequency:	300kHz TYP
Humidity:	non-condensing, 5%-95% MAX
Case material:	Copper
Potting material:	Epoxy (UL94V-0 rated)
MTBF (MIL-HDBK-217F @25°C):	>109,600 hours, Ground benign
Weight:	48.6g
Dimensions:	50.8 x 25.4 x 13.1mm 50.8 x 25.4 x 17.8mm (with heatsink)

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage type				2:1	
Filter	Pi type				
Protection	Fuse recommended				
Remote ON/OFF <sup>3)</sup>	• ON • OFF			Open Short to -Vin	

#### Example:

**60DAW\_2415S1.6**

60 = 60Watt; D = DIP; A = series; W = wide input (2:1) 18-36Vin;  
15Vout; S = single output; 1.6 = 1600VDC

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage tolerance				±2	%
External trim adj. range	of output			±10	%
Over load protection	Input voltage range		150		%
Line regulation				±0.5	%
Load regulation	10%-100%			±0.5	%
Ripple and noise	20MHz Bandwidth, 1.0μF ceramic capacitor			100	mVp-p
External trim adj. range				±10	%
Transient response setting time	25% load step change		250		μs

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage			1600		VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance				2200	pF

#### Note:

1. Input voltage can't exceed this value, or will cause the permanent damage.
2. The load shouldn't be less than 5%, otherwise ripple will increase dramatically.
3. Max. Capacitive Load is tested on Vin-nominal and full load.
4. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
5. In this datasheet, all the test methods of indications are based on corporate standards.
6. Only typical models listed, other models may be different, please contact our technical person for more details.
7. Specifications subject to change without notice.

## 60DAW\_1.6 Series

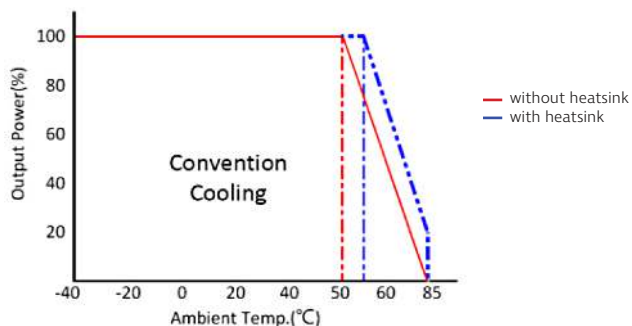
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## Product Selection Guide

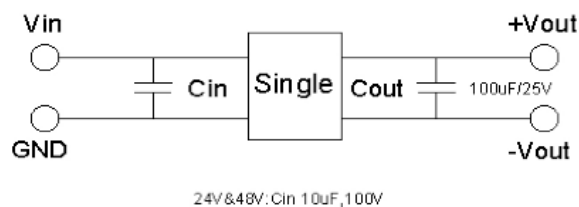
Part Number	Input Voltage Range [VDC]	Input current [mA, typ]		Output Voltage [VDC]	Output Current [mA]	Efficiency [%, Typ.]	Capacitive load [ $\mu$ F, max.]
		no load	full load				
60DAW_2403S1.6	18-36	90	2160	3.3	14000	87	16500
60DAW_2405S1.6	18-36	90	2760	5	12000	88	16500
60DAW_2412S1.6	18-36	40	2780	12	5000	89	3300
60DAW_2415S1.6	18-36	40	2780	15	4000	89	2200
60DAW_4803S1.6	36-72	60	1010	3.3	14000	88	16500
60DAW_4805S1.6	36-72	60	1360	5	12000	89	16500
60DAW_4812S1.6	36-72	30	1380	12	5000	90	3300
60DAW_4815S1.6	36-72	30	1370	15	4000	91	2200

## Typical characteristics

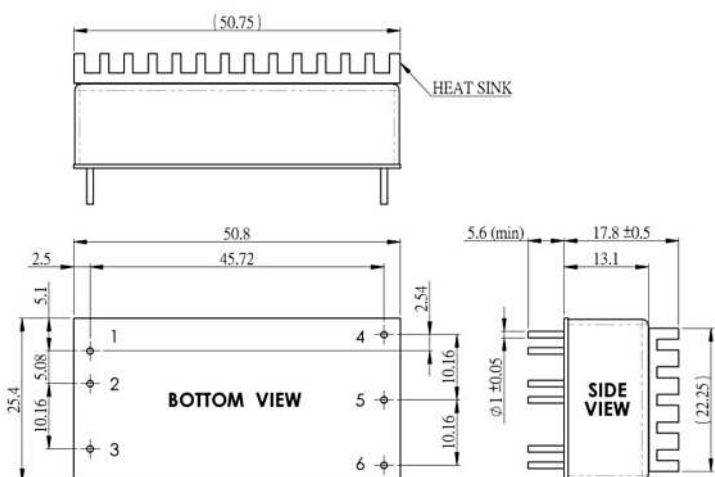
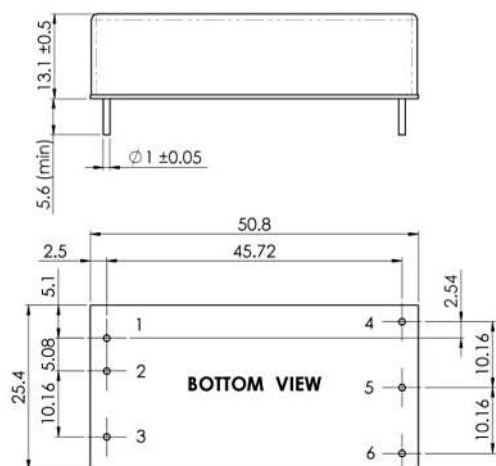
Temperature derating curve



## Recommended test circuit



## Mechanical dimensions



**Note:**

Unit: mm[inch]

Tolerance: xx.x ±0.5mm, xx.xx ±0.25

PIN connections						
PIN	1	2	3	4	5	6
Function	+Vin	-Vin	Ctrl	+Vout	-Vout	Trim