

### 6 Watts

- Regulated single & dual outputs from 5VDC to 48VDC
- Wide 4:1 input range
- Fully encapsulated chassis mount
- Optional DIN rail version
- IEC/UL/cUL62368-1 safety approvals
- EN55032 class A with no external components
- Remote on/off
- 3kVDC isolation
- -40°C to +105°C operating temperature
- Full power to 80°C
- MTBF >4Mhrs (MIL-DHBK-27F, +25°C GB)
- 3 year warranty



#### Dimensions:

##### DTE06:

2.09 x 1.34 x 1.04" (53.0 x 34.0 x 26.5 mm)

Available in two wide (4:1) input ranges for nominal 12/24VDC and 24/48VDC, the DTE06 series of encapsulated 6W DC-DC converters are chassis mount as standard or can be ordered with a DIN rail mount. They have screw terminals for ease of connection and an LED provides clear 'power good' indication. Remote On/Off is standard and when inhibited the standby current is just 2.5mA. Isolation is 3kVDC input/output providing excellent separation between supply and load. The modules are fully protected against input undervoltage, short circuit and overload conditions. These features, along with a rugged design and wide operating temperature range make the DTE06 series suitable for a variety of commercial and industrial applications.

### Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1,4)</sup>		Maximum Capacitive Load <sup>(5)</sup>	Efficiency <sup>(2)</sup>	Model Number <sup>(3)</sup>
			Max Load	No Load			
24 V (9-36 V)	5.1V	1.20 A	315 mA	10 mA	680 µF	81%	DTE0624S051
	12.0V	0.50 A	298 mA	10 mA	330 µF	84%	DTE0624S12
	15.0V	0.40 A	298 mA	10 mA	330 µF	84%	DTE0624S15
	24.0V	0.25 A	294 mA	10 mA	150 µF	85%	DTE0624S24
	48.0V	0.125 A	301 mA	10 mA	68 µF	83%	DTE0624S48
	±12.0V	±0.25 A	298 mA	10 mA	150 µF	84%	DTE0624DS12
	±15.0V	±0.20 A	294 mA	10 mA	150 µF	85%	DTE0624D15
	±24.0V	±0.125 A	298 mA	10 mA	68 µF	84%	DTE0624D24
48 V (18-75 V)	5.1V	1.20 A	159 mA	8 mA	680 µF	80%	DTE0648S051
	12.0V	0.50 A	149 mA	8 mA	330 µF	84%	DTE0648S12
	15.0V	0.40 A	149 mA	8 mA	330 µF	84%	DTE0648S15
	24.0V	0.25 A	147 mA	8 mA	150 µF	85%	DTE0648S24
	48.0V	0.125 A	151 mA	8 mA	68 µF	83%	DTE0648S48
	±12.0V	±0.25 A	147 mA	8 mA	150 µF	85%	DTE0648DS12
	±15.0V	±0.20 A	147 mA	8 mA	150 µF	85%	DTE0648D15
	±24.0V	±0.125 A	149 mA	8 mA	68 µF	84%	DTE0648D24

### Notes

1. Input current measured at nominal input voltage.

2. Typical values.

3. For optional version fitted with DIN Clip add suffix '-D' e.g. DTE0624S24-D.

DIN Rail mounting clip is available as a separate item, order code DTE06 DIN CLIP.

4. Input current is typically 2.5mA at nominal input voltage when output is remotely turned off.

5. Per output.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9		36	VDC	12V & 24V nominal
	18		75	VDC	24V & 48V nominal
Input Current					See Models and Ratings table
Inrush Current		60/110		A	24V models/48V models
External Fuse Required	2A/1A timelag 24V/48V nominal				
Input Filter	Pi type				
Undervoltage Lockout	On at >9V. Off <8.0V				DTE0624 models
	On at >18V. Off <16.0V				DTE0648 models
Input Surge			50	VDC	DTE0624 models for 1s
			100	VDC	DTE0648 models for 1s
Remote On/Off	On: Logic High (3.5-12V) or open circuit				
	Off: Logic Low (<1.2V) or short pin 1 to pin 2				

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5.1		48	V	See Models and Ratings table
Initial Set Accuracy			±2	%	At full load
Minimum Load	0			A	No minimum load required
Start Up Delay		30		ms	At nominal input voltage
Line Regulation		±0.5		%	From minimum to maximum input voltage
Load Regulation		±0.5		%	0 - 100% load
Cross Regulation			±5	%	On dual output models with one output at 25% load and the other varied from 10% to 100% load.
Transient Response			±5	% deviation	Recovery to within 1% in <500µs for a 25% load change
Ripple & Noise		75		mV pk-pk	5V-15V output models, 20MHz bandwidth
		180			24V, 48V output models, 20MHz bandwidth
Short Circuit Protection					Trip & Restart (hiccup mode), auto recovery
Overload Protection		150		%	Trip & Restart (hiccup mode)
Temperature Coefficient			±0.02	%/°C	

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		83		%	See Models and Ratings table
Isolation	3000			VDC	For 60s functional
Isolation Resistance	1000			MΩ	At 500VDC
Input to Output Capacitance		2200		pF	
Switching Frequency		370		kHz	
Power Density			3.4	W/in <sup>3</sup>	
Mean Time Between Failure	4100			kHrs	MIL-HDBK-217F, +25°C GB
Case Material	Epoxy potted in plastic case, UL94V-0				
Weight		0.108 (49)		lb (g)	DIN rail option add 0.202 (92.0)

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+105	°C	See derating curve
Storage Temperature	-50		+125	°C	
Case Temperature			+105	°C	
Thermal Impedance		3.12		°C/W	Natural convection, 20 LFM case to air
Humidity	5		95	%RH	Non-condensing
Cooling					Natural convection
Altitude			5000	m	Operating
Shock and Vibration	Tested according to IEC60068-2				

### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Level A	With no external components
Radiated	EN55032	Level A	

### EMC: Immunity

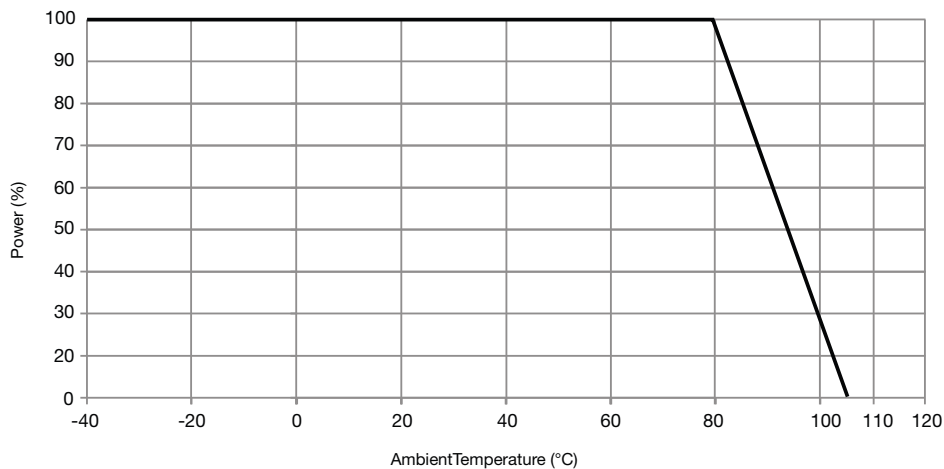
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Immunity	EN55035			
ESD Immunity	EN61000-4-2	±6kV Contact, ±8kV Air	A	
Radiated Immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	±2kV	A	
Surges	EN61000-4-5	±2kV	A	
Conducted Immunity	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	1000A/m	A	

### Safety Approvals

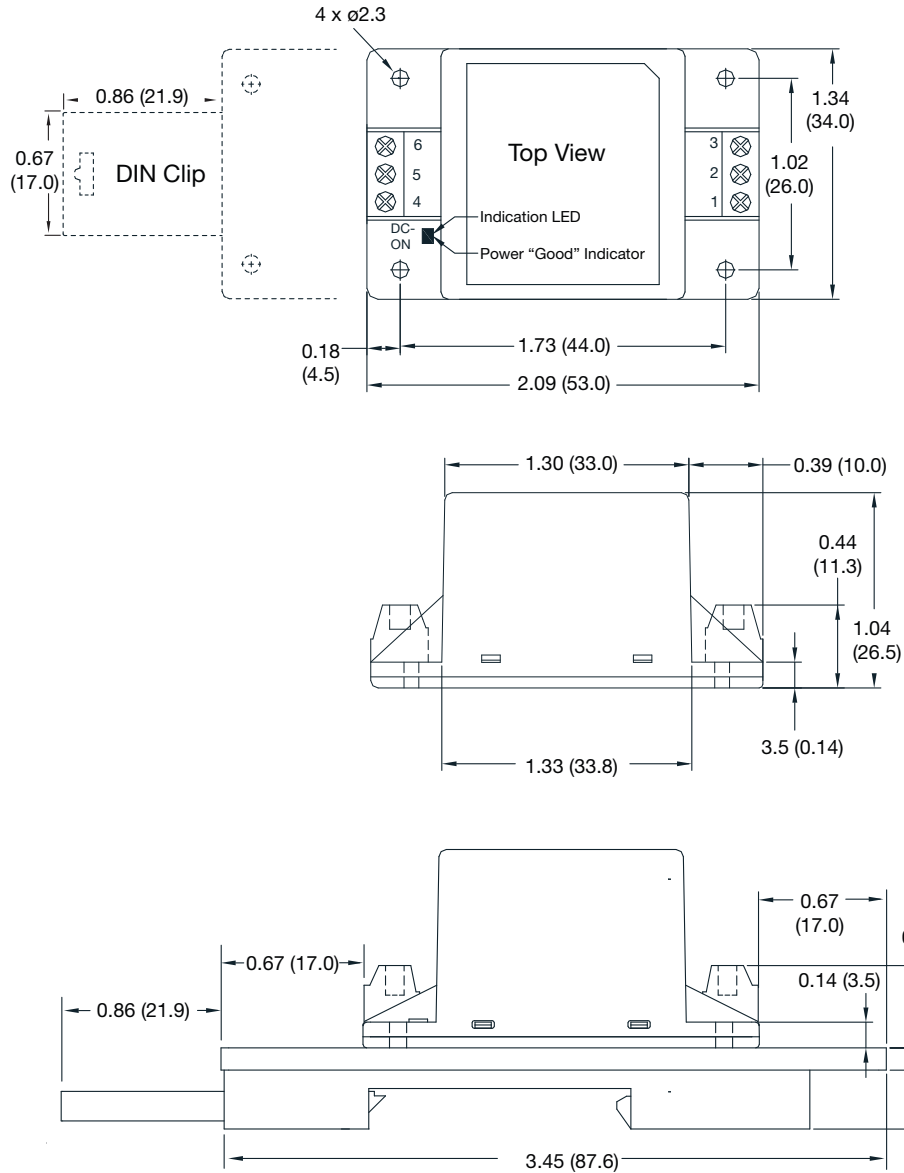
Safety Agency	Safety Standard	Notes & Conditions
CB	IEC60950-1/IEC62368-1	
UL	UL60950-1/IEC62368-1	

### Application Notes

#### Derating Curve for Convection Cooling



### Mechanical Details



Pin Connections		
Pin	Single Output	Dual Output
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	+Vin	+Vin
4	-Vout	-Vout
5	No Connection	Common
6	+Vout	+Vout

### Notes

- All dimensions are in inches (mm)
- Weight: 0.108 lbs (49 g) approx
- Weight for -D version: 0.202 lbs (92 g) approx
- Terminal wire size 1.5 mm<sup>2</sup> max
- Screw terminal torque 4.5 to 6.2 lb-in (0.5 to 0.7 Nm)
- Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )