

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 ^(1,4)		Maximum Capacitive Load ⁽⁵⁾	Efficiency ⁽²⁾	Model Number ⁽³⁾
			Max Load	No Load			
24 V (9-36 V)	5.1V	1.20 A	315 mA	10 mA	680 µF	81%	DTE0624S5V1
	12.0 V	0.50 A	298 mA	10 mA	330 µF	84%	DTE0624S12
	15.0 V	0.40 A	298 mA	10 mA	330 µF	84%	DTE0624S15
	24.0 V	0.25 A	294 mA	10 mA	150 µF	85%	DTE0624S24
	48.0 V	0.125 A	301 mA	10 mA	68 µF	83%	DTE0624S48
	±12.0 V	±0.25 A	298 mA	10 mA	150 µF	84%	DTE0624D12
	±15.0 V	±0.20 A	294 mA	10 mA	150 µF	85%	DTE0624D15
	±24.0 V	±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%	DTE0648S5V1
	12.0 V	0.50 A	149 mA	8 mA	330 µF	84%	DTE0648S12
	15.0 V	0.40 A	149 mA	8 mA	330 µF	84%	DTE0648S15
	24.0 V	0.25 A	147 mA	8 mA	150 µF	85%	DTE0648S24
	48.0 V	0.125 A	151 mA	8 mA	68 µF	83%	DTE0648S48
	±12.0 V	±0.25 A	147 mA	8 mA	150 µF	85%	DTE0648D12
	±15.0 V	±0.20 A	147 mA	8 mA	150 µF	85%	DTE0648D15
	±24.0 V	±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 ³	
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

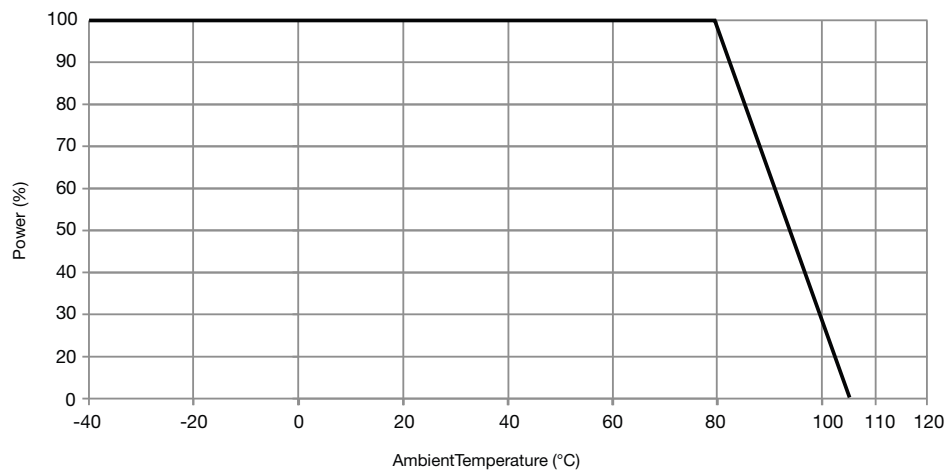
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Immunity	EN55035			
ESD Immunity	EN61000-4-2	±6kV Contact, ±8kV Air	A	
Radiated Immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	±2kV	A	
Surges	EN61000-4-5	±2kV	A	
Conducted Immunity	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	1000A/m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

Safety Approvals

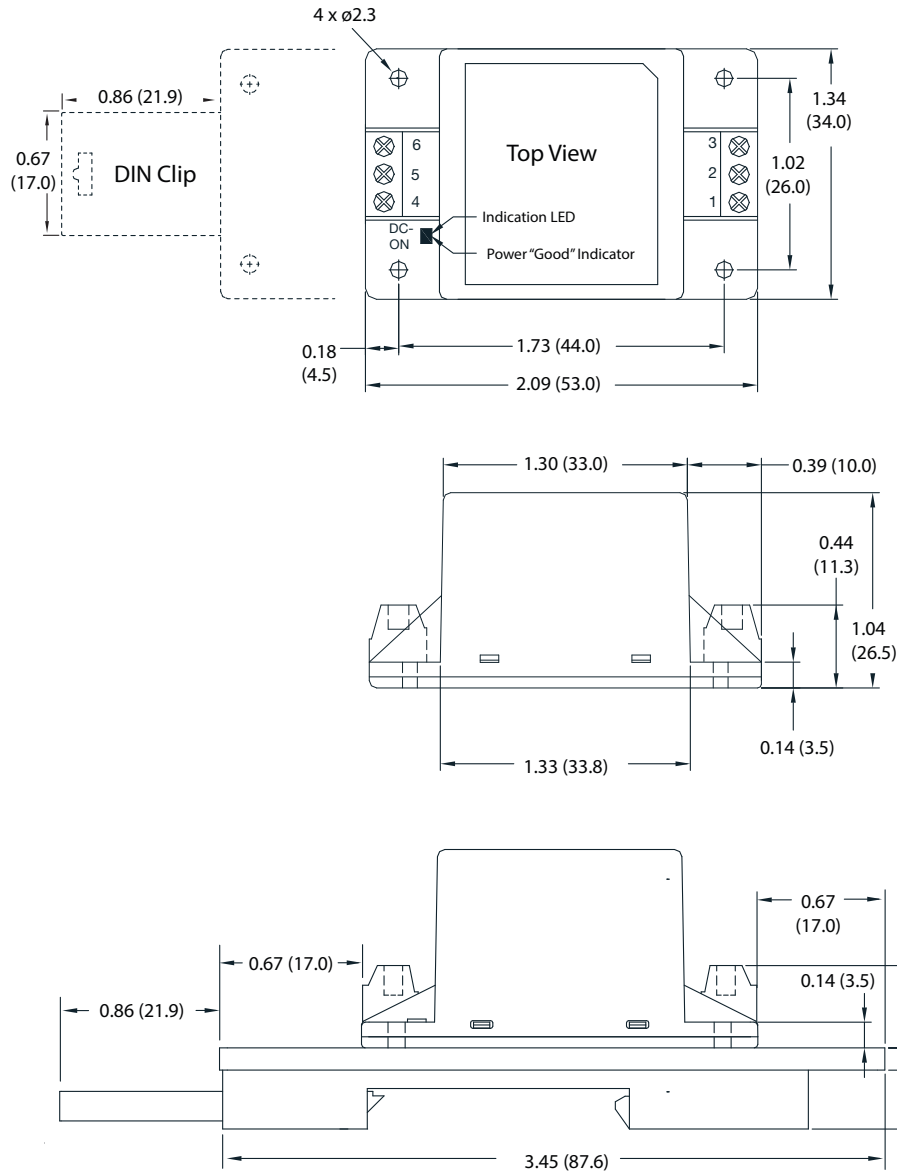
Safety Agency	Safety Standard	Notes & Conditions
CB	IEC62368-1	
UL	UL62368-1	
CSA	CAN/CSA-C22.2 No. 62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

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

1. All dimensions are in inches (mm)
2. Weight: 0.108 lbs (49 g) approx
3. Weight for -D version: 0.202 lbs (92 g) approx
4. Terminal wire size 1.5 mm² max

5. Screw terminal torque 4.5 to 6.2 lb-in (0.5 to 0.7 Nm)
6. Case tolerance: ± 0.02 (± 0.5)