## DTE180-03X-F-W6 | 180W | Triple Output

### FEATURES

- ITE Safety Approvals
- 3-Prong IEC 320-14,Class I
- Altitude:ITE up to 5000m
- <0.3Watts No load input Power.
- Touch current less than 100µA
- No minimum load required
- 3 year warranty
- **Safety pending**

Optional +5VSB @2A with 5%
O/P regulation and 50mV ripple

| | MODEL/CHANNEL | Unit | DTE180-03X-F-W6 | | |
|---|---|---|---|---|---|
| **Output Rating** | Vo | Vo | +5Vdc | +12Vdc | -12Vdc |
| | Io (min) | A | 0A | 0A | 0A |
| | Io (max) | A | 15A | 14A | 1A |
| | Ripple & Noise | mV | 120mV | 100mV | 120mV |
| | O/P Regulation | % | 5% | | |
| | Po (Max.) | - | 180W | | |
| **INPUT** | Input Voltage Range | V | 90-264VAC | | |
| | Range | Hz | 47-63Hz | | |
| | Power Factor | VAC | > 0.95 @115VAC; > 0.9 @230VAC @full load | | |
| | Efficiency | % | > 86% @Average Efficiency, 115/230VAC | | |
| **Efficiency** | Input range | VAC | 90-264VAC | | |
| | Frequency | Hz | 47-63Hz | | |
| | Power Factor | VAC | > 0.95 @115VAC; > 0.9 @230VAC @full load | | |
| | Inrush current | VAC | < 25A peak @115VAC; < 50A peak @230VAC cold start @25°C | | |
| | Input current (rms) | VAC | 3A @115VAC; 1.5A @230VAC max. | | |
| | Maximum output power (Po) | W | 180W | | |
| | Hold–up time | VAC | > 16ms typical @full load, 115VAC | | |
| **Environmental Specification** | Operating temperature | °C | -20 to +60°C ( Refer to derating curve ) | | |
| | Storage Humidity | % | 0-95%, non-condensing. | | |
| | Humidity | % | 10°C-95°C, non-condensing | | |
| | MTBF | - | >200,000 hours at full load and 25°C ambient temperature based on Bellcore TR-332 | | |
| **Environmental Agencies** | Safety Standards | - | UL/c-UL UL62368-1 TUV EN62368-1 CB IEC 62368- | | |
| | EMI Standards(Meet) | - | EN55032 Class B EN55035 Class B FCC Part 15 Class B CE | | |
| **Protection** | Over Voltage Protection | - | Latch off, AC recycle | | |
| | Over Load Protection | - | Auto-recover | | |
| | Short circuit protection | - | Auto-recover | | |
| | Dimension/*Weight | mm/g | L 200×W 90×H45 mm ( 7.874"x3.543"x1.77" )/ 1.2kgs. (2.65 lbs. ) | | |

Note: 1. Peak–to–peak with 20MHz bandwidth with a tantalum 10uF

## Performance

### Safety and EMC Performance

| Description | Safety | EMC |
|---|---|---|
| ITE equipment | IEC 62368-1 :2014(Second Edition)<br>EN62368 :2014+A11<br>UL 62368 ,2nd Edition,2014-12-01<br>CAN/CSA C22.2 No. 62368-1-14,2nd Edition | EN55032 & EN55035 &FCC part 15(*) and ICES-003 |

Tests for performance to this requirement will be performed with final system

(*) FCC PAPT15 compliance information and warnings:

This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful Interference

(2)This device must accept any interference received, including interference that may cause undesired operation

### INSULATION LEVEL AND DIELECTRIC WITHSTAND (HI-POT)

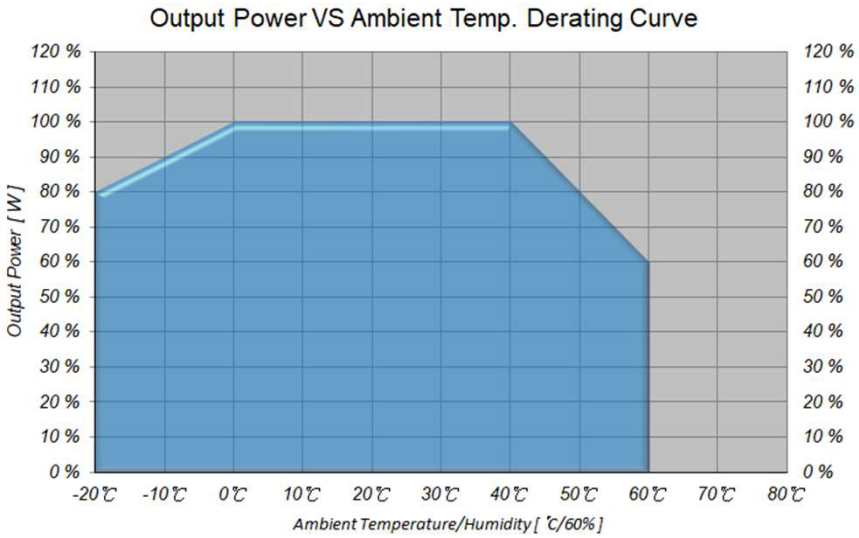
| Audio/Video, ITE equipment | Isolation Voltage | Grade Insulation |
|---|---|---|
| Primary to Secondary | 4242VDC(3000Vac) | Reinforced |
| Primary to Ground(Mounting holes or Frame GND) | 2121VDC(1500Vac) | Basic |
| Secondary to Ground(Mounting holes or Frame GND) | 2121VDC(1500VaC) | Basic |

Note:Production testing use dc voltage test for 4 Sec

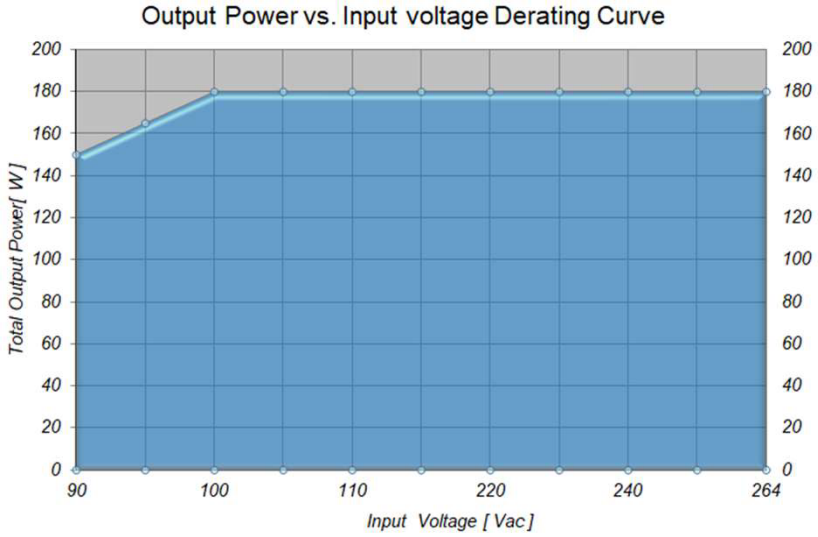
## Diagrams 180W

AC/DC Switching Adapter - Multiple Output

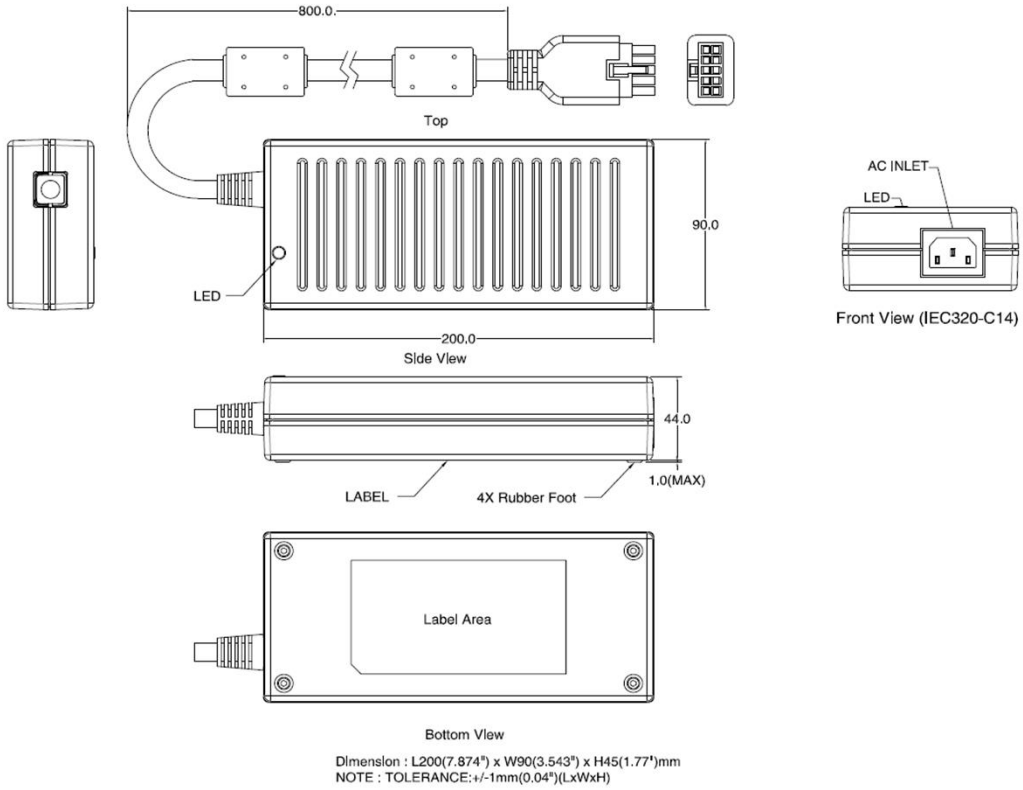
Derating curve:
Output vs Ambient temperature derating curve
Derate linearly 2% per °C from 41 to 60°C
Derate linearly 1% per °C from 0 to -20°C




Derating curve:
Output vs Input voltage derating curve
180W Derate linearly 1.6% Per Vac from 100 to 90Vac)
*90-264V 5V The current can be 14A max



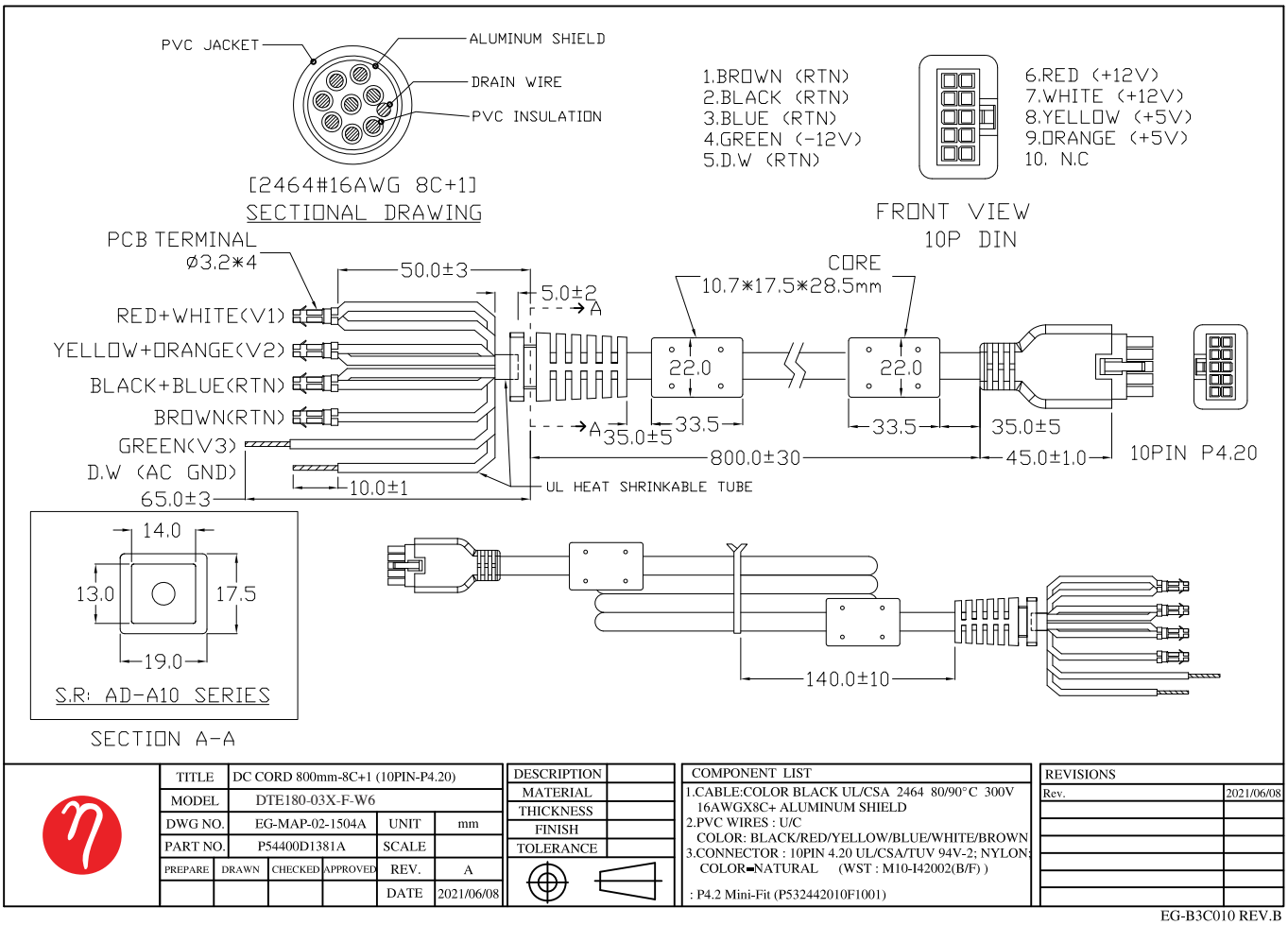
## Dimensions Diagrams 180W




Note:

1. AC Inlet :
   IEC320-C14
2. Plastic Case Color : Black
3. Tolerance : ± 0.5mm
4. Unit : mm

## Dimensions Diagrams DTE180-03X-F-W6




DC Output Connector

Standard male plug(power supply side): 10PIN Mini Fit Picth : 4.20

Mating Connector : Molex P/N: 39-28-123 or equivalent

DC output cable: 8C+1, UL2464, 16AWG, VW-1, 80

| | ETA-USA | MODEL NAME |
|---|---|---|
| | ALUMINUM E.CAP LIFETIME ESTIMATION | DTE180-03 |

Ambient temperature :25℃ AC Input: 115V 60Hz DC Output: 12V / 8.167A , 5V / 14A , -12V / 1A

| | Manufacturer Type | Capacity Voltage | Size D*L | Case Coeff. | Cap. Rating ℃ | Baselife Hrs | Rated Ripple Current at 105℃,Irms,A | Ripple Current Factor | | Max.allowable Ripple Current at 25℃,Irms,A | Case Tc at 25℃ | Ambient Tc at 25℃ | Increase temp. in core temp.℃ | ΔTo ℃ | Measured Ripp.Cur. Irms,A | Useful Lifetime Hrs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Spec. | uF / V | mm | Kc | Tr | Lr | Ir | Kfreq | Ktemp | Io | Tc | Ta | ΔT | ΔTo | Ix | Lx |
| C3 | NCC/KXG | 150uF/420V | 18*40 | 1.3 | 105 | 10000 | 0.98 | 2.25 | 1.73 | 3.81 | 82.6 | 81.33 | 1.65 | 5 | 1.27 | 82086.2 |
| C4 | NCC/KY | 47uF/50V | 6.3*11 | 1.1 | 105 | 5000 | 0.295 | 1 | 2 | 0.59 | 76.9 | 76.66 | 0.26 | 5 | 0.07 | 68753.9 |
| C37 | GEMCON/GPH | 330uF/16V | 8*8 | 1.1 | 125 | 2000 | 5 | 1 | 1.73 | 8.65 | 92.7 | 90.34 | 2.59 | 5 | 3.60 | 26108.3 |
| C39 | NCC/KZH | 4700uF/16V | 16*25 | 1.25 | 105 | 6000 | 3.63 | 1 | 1.73 | 6.28 | 88 | 85.71 | 2.86 | 5 | 2.75 | 30725.4 |
| C40 | NCC/KZH | 4700uF/16V | 16*25 | 1.25 | 105 | 6000 | 3.63 | 1 | 1.73 | 6.28 | 86.7 | 83.19 | 4.39 | 5 | 3.40 | 29615.4 |
| C43 | GEMCON/GPH | 1500uF/16V | 10*12 | 1.15 | 125 | 2000 | 6.1 | 1 | 1.73 | 10.55 | 85.9 | 82.90 | 3.45 | 5 | 5.07 | 41210.7 |
| C44 | GEMCON/GPH | 330uF/16V | 8*8 | 1.1 | 125 | 2000 | 5 | 1 | 1.73 | 8.65 | 83.2 | 81.42 | 1.96 | 5 | 3.13 | 50639.4 |
| C45 | NCC/KY | 680uF/16V | 10*16 | 1.15 | 105 | 7000 | 1.21 | 1 | 2 | 2.42 | 77.4 | 60.22 | 19.75 | 5 | 2.41 | 20174.0 |
| C48 | NCC/KY | 100uF/25V | 6.3*11 | 1.1 | 105 | 5000 | 0.34 | 1 | 2 | 0.68 | 79.8 | 79.02 | 0.86 | 5 | 0.14 | 53762.2 |
| | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | Io=Ir*Kfreq*Ktemp | | | ΔT=Kc*(Tc-Ta) | | | |

**Aluminum Solid Capacitors** **Lx=Lr*2^((Tr-Ta)/10)*2^((ΔTo -ΔT) /10)**
**Aluminum Electrolytic Capacitors** **Lx=Lr*2^((Tr-Ta)/10)*2^((ΔTo -ΔT) /5)**
**※ Ta=Tc-(5*(Ix/(Ir*Kfreq))^2)/Kc**

ΔT=Kc*(Tc-Ta)

| Ambient Temp.℃ | 85 | 105 |
|---|---|---|
| Guide limit of Δto(℃) | 15 | 5 |
| Core temp.(=Ta+Δto) | 100 | 110 |

| Diameter (mm) | Φ5 to Φ8 | Φ10 | Φ12.5 | Φ16 | Φ18 | Φ22 | Φ25 |
|---|---|---|---|---|---|---|---|
| Kc | 1.1 | 1.15 | 1.2 | 1.25 | 1.3 | 1.35 | 1.4 |
| Diameter (mm) | Φ30&Φ35 | Φ40 | Φ50 | Φ63.5 | Φ76 | Φ89 | Φ100 |
| Kc | 1.5&1.65 | 1.75 | 1.9 | 2.2 | 2.5 | 2.8 | 3.1 |

| | ETA-USA<br>ALUMINUM E.CAP LIFETIME ESTIMATION | MODEL NAME<br>DTE180-03 |
|---|---|---|

Ambient temperature :25℃ AC Input: 230V 60Hz DC Output: 12V / 8.167A , 5V / 14A , -12V / 1A

| | Manufacturer Type | Capacity Voltage | Size D*L | Case Coeff. | Cap. Rating ℃ | Baselife Hrs | Rated Ripple Current at 105℃,Irms,A | Ripple Current Factor | | Max.allowable Ripple Current at 25℃,Irms,A | Case Tc at 25℃ | Ambient Tc at 25℃ | Increase temp. in core temp.℃ | ΔTo ℃ | Measured Ripp.Cur. Irms,A | Useful Lifetime Hrs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Spec. | uF / V | mm | Kc | Tr | Lr | Ir | Kfreq | Ktemp | Io | Tc | Ta | ΔT | ΔTo | Ix | Lx |
| C3 | NCC/KXG | 150uF/420V | 18*40 | 1.3 | 105 | 10000 | 0.98 | 2.25 | 2 | 4.41 | 74.2 | 73.40 | 1.04 | 5 | 1.00 | 154808.8 |
| C4 | NCC/KY | 47uF/50V | 6.3*11 | 1.1 | 105 | 5000 | 0.295 | 1 | 2.23 | 0.66 | 68.8 | 68.55 | 0.27 | 5 | 0.07 | 120454.6 |
| C37 | GEMCON/GPH | 330uF/16V | 8*8 | 1.1 | 125 | 2000 | 5 | 1 | 1.73 | 8.65 | 88.6 | 86.26 | 2.58 | 5 | 3.59 | 41035.6 |
| C39 | NCC/KZH | 4700uF/16V | 16*25 | 1.25 | 105 | 6000 | 3.63 | 1 | 1.73 | 6.28 | 84.1 | 81.82 | 2.86 | 5 | 2.74 | 40290.3 |
| C40 | NCC/KZH | 4700uF/16V | 16*25 | 1.25 | 105 | 6000 | 3.63 | 1 | 1.73 | 6.28 | 82.9 | 79.39 | 4.39 | 5 | 3.40 | 38548.1 |
| C43 | GEMCON/GPH | 1500uF/16V | 10*12 | 1.15 | 125 | 2000 | 6.1 | 1 | 1.73 | 10.55 | 82 | 79.00 | 3.45 | 5 | 5.07 | 60110.5 |
| C44 | GEMCON/GPH | 330uF/16V | 8*8 | 1.1 | 125 | 2000 | 5 | 1 | 2 | 10.00 | 79.6 | 77.82 | 1.96 | 5 | 3.13 | 80240.0 |
| C45 | NCC/KY | 680uF/16V | 10*16 | 1.15 | 105 | 7000 | 1.21 | 1 | 2 | 2.42 | 74.1 | 57.26 | 19.36 | 5 | 2.38 | 26150.5 |
| C48 | NCC/KY | 100uF/25V | 6.3*11 | 1.1 | 105 | 5000 | 0.34 | 1 | 2 | 0.68 | 76.2 | 75.39 | 0.89 | 5 | 0.14 | 68846.2 |
| | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | Io=Ir*Kfreq*Ktemp | | | ΔT=Kc*(Tc-Ta) | | | |

**Aluminum Solid Capacitors** **Lx=Lr*2^((Tr-Ta)/10)*2^((ΔTo -ΔT) /10)**
**Aluminum Electrolytic Capacitors** **Lx=Lr*2^((Tr-Ta)/10)*2^((ΔTo -ΔT) /5)**
**※ Ta=Tc-(5*(Ix/(Ir*Kfreq))^2)/Kc**

ΔT=Kc*(Tc-Ta)

| Ambient Temp.℃ | 85 | 105 |
|---|---|---|
| Guide limit of Δto(℃) | 15 | 5 |
| Core temp.(=Ta+Δto) | 100 | 110 |

| Diameter (mm) | Φ5 to Φ8 | Φ10 | Φ12.5 | Φ16 | Φ18 | Φ22 | Φ25 |
|---|---|---|---|---|---|---|---|
| Kc | 1.1 | 1.15 | 1.2 | 1.25 | 1.3 | 1.35 | 1.4 |
| Diameter (mm) | Φ30&Φ35 | Φ40 | Φ50 | Φ63.5 | Φ76 | Φ89 | Φ100 |
| Kc | 1.5&1.65 | 1.75 | 1.9 | 2.2 | 2.5 | 2.8 | 3.1 |