



### CHTA/CHTB24

High Temperature 150°C Series

25Amp - 400/600/800V - TRIAC

#### Applications

- Heat Regulation
  - Ovens
  - Coffee Makers
  - Cookers
- Light Dimming
- Control of Inductive Loads
  - Motors
  - Transformers

- > Superior Commutating Performance at High Temperature  $(di/dt)_c = 25A/ms$  @  $(dv/dt)_c = 50V/\mu s$
- > Ideal for Most Demanding Applications
- > Alternistor/No Snubber Type
- > IGT 50 mA Max.
- > VDRM/VRMM 400, 600, 800V

#### Absolute Maximum Ratings

|  | CONDITIONS                                 | SYMBOL                                   | RATING              |
|--|--|--|---------------------|
| RMS On-State Current (full sine wave)  | $T_c = 125^\circ C$<br>$T_c = 100^\circ C$ | TO-220AB<br>TO-220AB Iso<br>$I_{T(RMS)}$ | 25A                 |
| Non Repetitive Surge Peak On-State Current (Full Cycle, $T_j$ Initial = $25^\circ C$ )                     | F = 50 Hz<br>F = 60 Hz                     | $I_{TSM}$                                | 285A<br>300A        |
| $I^2t$ Value for fusing  | $t_p = 10$ ms                              | $I^2t$                                   | 400A <sup>2</sup> s |
| Critical rate of rise of on-state current<br>$I_G = 2 \times I_{GT}$ , $t_r < 100$ ns, $T_j = 150^\circ C$ |  | di/dt                                    | 100A/ $\mu s$       |
| Peak Gate Current @ $T_j = 150^\circ C$  | $t_p = 20$ $\mu s$                         | $I_{GM}$                                 | 4A                  |
| Average Gate Power Dissipation @ $T_j = 150^\circ C$   |  | PG(AV)                                   | 1W                  |
| Storage Temperature Range  |  | $T_{stg}$                                | -40 to +150°C       |
| Operating Junction Temperature Range   |  | $T_j$                                    | -40 to +150°C       |
| Isolation Voltage (CHTA Series only)   |  | $V_{ISO}$                                | 2500 $V_{RMS}$      |

#### Electrical Characteristics

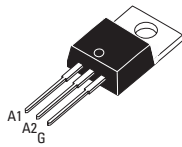
|  |           |               |
|--|-----------|---------------|
| $I_{GT}$ MAX @ $V_D = 12$ V, $R_L = 33\Omega$ NOTE 1                     | QI-II-III | 50mA          |
| $V_{GT}$ MAX @ $V_D = 12$ V, $R_L = 33\Omega$                            | QI-II-III | 1.3V          |
| $V_{GD}$ MIN @ $V_D = V_{DRM}$ , $R_L = 3.3k\Omega$ $T_j = 150^\circ C$  | QI-II-III | 0.15V         |
| $I_H$ MAX @ $I_T = 500$ mA NOTE 2  |           | 75mA          |
| $I_L$ MAX @ $I_G = 1.2 I_{GT}$   | QI-II-III | 90mA          |
| dv/dt MIN @ $V_D = 67\% V_{DRM}$ (gate open) NOTE 2 $T_j = 150^\circ C$  |           | 500V/ $\mu s$ |
| (di/dt) <sub>c</sub> MIN without snubber NOTES 2 & 4 $T_j = 150^\circ C$ |           | 25A/ms        |

#### Static Characteristics

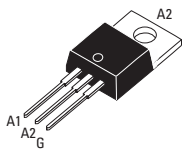
|   |  |              |
|---|--|--------------|
| $V_T$ MAX @ $I_{TM} = 35A$ , $t_p = 380\mu s$ NOTE 2 $T_j = 25^\circ C$ |  | 1.5V         |
| $V_{to}$ MAX @ Threshold Voltage NOTE 2 $T_j = 150^\circ C$             |  | 0.8V         |
| $R_d$ MAX @ Dynamic Resistance NOTE 2 $T_j = 150^\circ C$               |  | 19m $\Omega$ |
| $I_{DRM}$ MAX @ $V_{DRM} = V_{RRM}$ $T_j = 25^\circ C$                  |  | 5 $\mu A$    |
| $I_{RRM}$ MAX @ $V_{DRM} = V_{RRM}$ $T_j = 150^\circ C$                 |  | 8.5mA        |

#### GENERAL NOTES

1. Minimum IGT is guaranteed at 5% of IGT max.
2. For both polarities of A2 referenced to A1
3. All parameters at 25 degrees C unless otherwise specified.
4. Commutating dv/dt = 50V/ $\mu s$ , (exponential to 200Vpk)



TO-220AB Isolated (CHTA24)



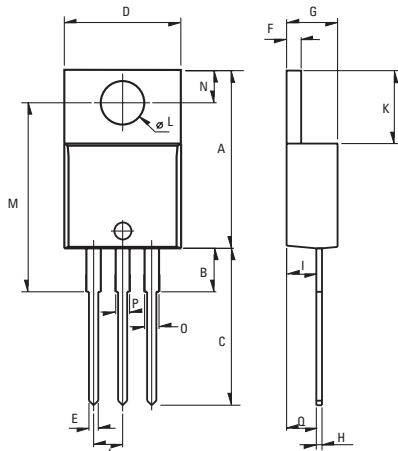
TO-220AB Non-Isolated (CHTB24)



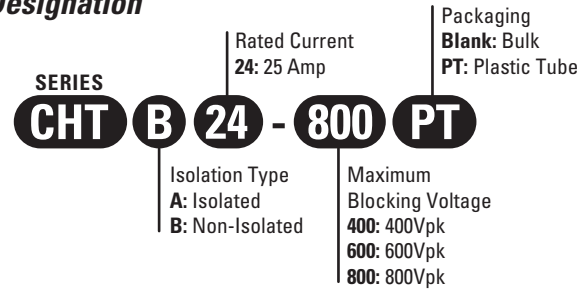
### Thermal Resistances

|                       |                   | SYMBOL        | RATING  |
|-----------------------|-------------------|---------------|---------|
| Junction to Case (AC) | TO-220AB          | $R_{th(j-c)}$ | 0.8°C/W |
| Junction to Case (AC) | TO-220AB Isolated | $R_{th(j-c)}$ | 1.7°C/W |
| Junction to Ambient   | TO-220AB          | $R_{th(j-a)}$ | 60°C/W  |
| Junction to Ambient   | TO-220AB Isolated | $R_{th(j-a)}$ | 60°C/W  |

### Part Number Designation



Weight: 2.3g (0.08 oz)



### Dimensions

| REF. | Millimeters |      |       | Inches |       |       |
|------|-------------|------|-------|--------|-------|-------|
|      | Min.        | Typ. | Max.  | Min.   | Typ.  | Max.  |
| A    | 15.24       |      | 15.75 | 0.6    |       | 0.62  |
| B    |             | 3.23 |       |        | 0.127 |       |
| C    | 12.78       |      | 13.79 | 0.503  |       | 0.543 |
| D    | 9.96        |      | 10.36 | 0.392  |       | 0.408 |
| E    | 0.69        |      | 0.94  | 0.027  |       | 0.037 |
| F    | 1.22        |      | 1.32  | 0.048  |       | 0.052 |
| G    | 4.62        |      | 4.83  | 0.182  |       | 0.19  |
| H    | 0.46        |      | 0.61  | 0.018  |       | 0.024 |
| I    | 2.49        |      | 2.84  | 0.098  |       | 0.112 |
| J    | 2.39        |      | 2.69  | 0.094  |       | 0.106 |
| K    | 6.48        |      | 6.88  | 0.255  |       | 0.271 |
| L    | 3.78        |      | 3.89  | 0.149  |       | 0.153 |
| M    | 15.49       | 16   | 16.51 | 0.61   | 0.63  | 0.65  |
| N    | 2.59        |      | 2.9   | 0.102  |       | 0.114 |
| O    | 0.99        |      | 1.55  | 0.039  |       | 0.061 |
| P    | 0.99        |      | 1.55  | 0.039  |       | 0.061 |
| Q    |             | 2.67 |       |        | 0.105 |       |

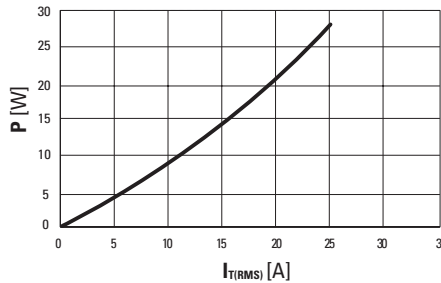


Fig. 1: Power dissipation versus RMS on-state current (full cycle).

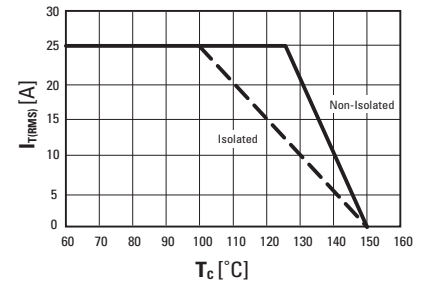


Fig. 2: RMS on-state current versus case temperature (full cycle)

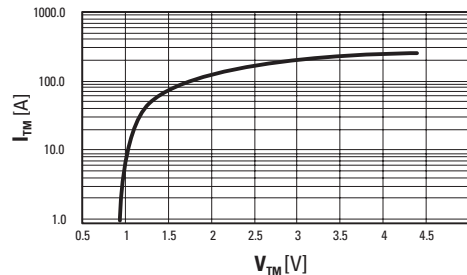


Fig. 3: On-state current versus on-state voltage (instantaneous values)

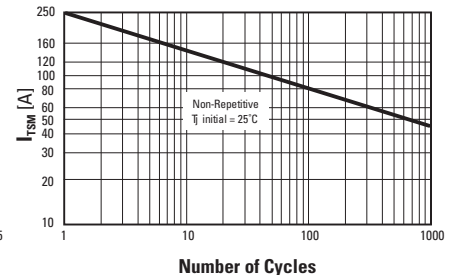


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

### ISO9001 Certified

### Approvals

UL - Pending

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