

# T-series Triacs



## Immunity and commutation driven for AC appliances

T-Series Triacs are designed for the ever increasing number of AC loads in domestic appliance control. These AC appliance switches meet both the immunity and high-commutation needs, providing a very cost-effective solution.

Both immunity (dV/dt) and commutation capability (dI/dt)<sub>c</sub> are specified at 150 °C for 800 V series. Only 10 mA gate current on some devices helps optimize the power supply and allows direct drive capability through a single resistance between the microcontroller and the Triac. In addition, the trade-off of ITSM versus immunity and commutation capability is improved. This capability is unmatched in the market today.

### KEY FEATURES

- $I_{TRMS}$  from 4 to 16 A\*
- $V_{DRM}/V_{RRM}$  up to 800 V
- $V_{DSM}/V_{RSM}$  up to 900 V
- $T_J = 150\text{ °C}$  @  $V_{DRM}/V_{RRM}$  up to 600 V (dual  $T_J$  devices only)
- $T_J = 125\text{ °C}$  for 220 V mains,  $V_{DRM}/V_{RRM}$  up to 800 V (dual  $T_J$  devices only)
- 4 ranges\* of  $I_{GT}$ 
  - 10 mA directly driven from a microcontroller
  - 20 mA Snubberless™
  - 25 mA standard 4 quadrants
  - 35 mA Snubberless
- UL recognized up to 2500  $V_{RMS}$  (E81734)
- Ecopack 2 products: Rohs and halogen free compliant

\* Some currents may not yet be covered by ready-made  $I_{GT}$  versions but are available on request.

### KEY BENEFITS

- No need for a snubber with Snubberless versions, if the design respects datasheet limits
- Direct drive from a microcontroller (when  $I_{GT} = 10\text{ mA}$ )
- Better thermal management (keeping your load under control at higher case temperatures)

### TARGETED APPLICATIONS

- Low- and medium-power load control in industrial systems
- Light dimmer
- Kitchen tools, such as soya milk makers, blenders, coffee makers, water heaters
- Power tools

## IMMUNITY (dV/dt) AND COMMUTATION (dI/dt)<sub>c</sub>, COMPARISON EXAMPLES

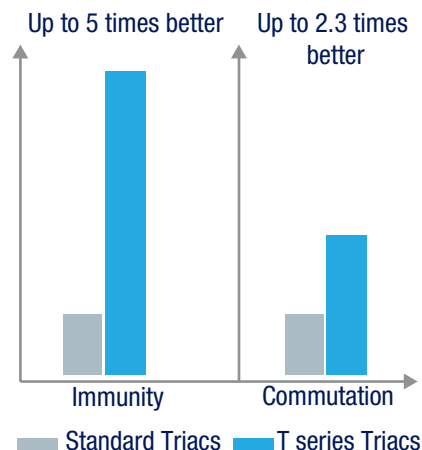
Immunity (dV/dt) and commutation (dI/dt)<sub>c</sub> @ T<sub>j</sub> = 125 °C

T series Triacs have better noise immunity (dV/dt) up to 2 kV, which is up to 5 times above market standards.

Commutation capability, (dI/dt)<sub>c</sub>, is increased up to 16 A/ms, which is up to 2.3 times above market standards.

The table below compares a standard Triac (BTA08-600CWRG) with a T series Triac (T835T-8FP).

Part number	Current I <sub>T(RMS)</sub> (A)	Immunity dV/dt (w/o snubber) (V/μs)	Commutation (dI/dt) <sub>c</sub> (A/ms)
T835T-6FP	8	2000	8
BTA08-600CWRG		400	4.5



Insulated packages are UL 1557 certified, under E81734 and UL94-V0 molding material for inflammability: TO-220AB Ins. as 2500 V<sub>RMS</sub>, and TO220 Fullpack as 1500 V<sub>RMS</sub>.

## T SERIES PRODUCT TABLE

### T series - High commutation (dI/dt)<sub>c</sub> and immunity (dV/dt) Triacs

Part number	Package	Description	Repetitive peak off-state voltage (V <sub>DRM</sub> and V <sub>RRM</sub> ) (@ T <sub>j</sub> max) max (V)	Non repetitive surge peak on-state current (I <sub>TSM</sub> ) max (A)	Junction temperature (T <sub>j</sub> ) max (°C)	Triggering gate current max (I <sub>GT</sub> ) (I, II, III) max (mA)	Rate of decrease of commutating on-state current ((dI/dt) <sub>c</sub> min) (@ T <sub>j</sub> max) min (A/ms)	Rising ration of OFF voltage (dV/dt) (@T <sub>j</sub> max) min (V/μs)
<b>6 A</b>								
T610T-8FP T610T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Logic Level	600 @ 150 °C or 800 @ 125 °C	45	150 or 125	10, 10, 10	5.5 @ 125 °C or 3.3 @ 150 °C	100 @ 125 °C or 50 @ 150 °C
T635T-8FP T635T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Snubberless™	600 @ 150 °C or 800 @ 125 °C	45	150 or 125	35, 35, 35	6 @ 125 °C or 3 @ 150 °C	2000 @125 °C or 1000 @ 150 °C
<b>8 A</b>								
T810T-8FP T810T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Logic Level	600 @ 150 °C or 800 @ 125 °C	60	150 or 125	10, 10, 10	6 @ 125 °C or 3.3 @ 150 °C	100 @ 125 °C or 50 @ 150 °C
T835T-8FP T835T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Snubberless™	600 @ 150 °C or 800 @ 125 °C	60	150 or 125	35, 35, 35	8 @ 125 °C or 4 @ 150 °C	2000 @125 °C or 1000 @ 150 °C
<b>12 A</b>								
T1210T-8FP T1210T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Logic Level	600 @ 150 °C or 800 @ 125 °C	90	150 or 125	10, 10, 10	7.6 @ 125 °C or 3.4 @ 150 °C	100 @ 125 °C or 50 @ 150 °C
T1235T-8FP T1235T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Snubberless™	600 @ 150 °C or 800 @ 125 °C	90	150 or 125	35, 35, 35	12 @ 125 °C or 6 @ 150 °C	2000 @ 125 °C or 1000 @ 150 °C
<b>16 A</b>								
T1610T-8FP T1610T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Logic Level	600 @ 150 °C or 800 @ 125 °C	120	150 or 125	10, 10, 10	9 @ 125 °C or 4.5 @ 150 °C	100 @ 125 °C or 50 @ 150 °C
T1620T-8I	TO-220AB Ins	Snubberless™	600 @ 150 °C or 800 @ 125 °C	120	125	20, 20, 20	6 @ 125 °C or 4.5 @ 150 °C	1000 @ 125 °C or 500 @ 150 °C
T1635T-8I	TO-220AB Ins	Snubberless™	600 @ 150 °C or 800 @ 125 °C	120	125	35, 35, 35	16 @ 125 °C or 12 @ 150 °C	2000 @ 125 °C or 1000 @ 150 °C
T1635T-8FP T1635T-8T <sup>(1)</sup>	TO-220FPAB TO-220AB	Snubberless™	600 @ 150 °C or 800 @ 125 °C	120	150 or 125	35, 35, 35	16 @ 125 °C or 8 @ 150 °C	2000 @ 125 °C or 1000 @ 150 °C

Note : (1) under development, soon to come Q2-2014



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