



BTA416Y-800C

3Q Hi-Com Triac

10 June 2014

Product data sheet

1. General description

Planar passivated high commutation three quadrant triac in a SOT78D (TO-220AB) internally insulated plastic package intended for use in circuits where high static and dynamic dV/dt and high dI/dt can occur. This "series C" triac will commute the full RMS current at the maximum rated junction temperature without the aid of a snubber. This device has high T_j operating capability and an internally isolated mounting base.

2. Features and benefits

- 3Q technology for improved noise immunity
- High commutation capability with maximum false trigger immunity
- High immunity to false turn-on by dV/dt
- High surge capability
- High $T_{j(max)}$
- Isolated mounting base with 2500 V (RMS) isolation
- Less sensitive gate for high noise immunity
- Planar passivated for voltage ruggedness and reliability
- Triggering in three quadrants only

3. Applications

- Electronic thermostats (heating and cooling)
- High power motor controls
- Rectifier-fed DC inductive loads e.g. DC motors and solenoids

4. Quick reference data

Table 1. Quick reference data

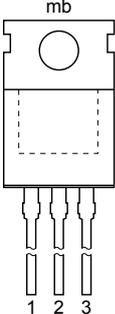
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{DRM}	repetitive peak off-state voltage		-	-	800	V
I_{TSM}	non-repetitive peak on-state current	full sine wave; $T_{j(init)} = 25\text{ }^{\circ}\text{C}$; $t_p = 20\text{ ms}$; Fig. 4 ; Fig. 5	-	-	160	A
T_j	junction temperature		-	-	150	$^{\circ}\text{C}$
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{mb} \leq 108\text{ }^{\circ}\text{C}$; Fig. 1 ; Fig. 2 ; Fig. 3	-	-	16	A



Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
I _{GT}	gate trigger current	V _D = 12 V; I _T = 0.1 A; T2+ G+; T _j = 25 °C; Fig. 7	2	-	35	mA
		V _D = 12 V; I _T = 0.1 A; T2+ G-; T _j = 25 °C; Fig. 7	2	-	35	mA
		V _D = 12 V; I _T = 0.1 A; T2- G-; T _j = 25 °C; Fig. 7	2	-	35	mA

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	T1	main terminal 1	 <p style="text-align: center;">TO-220AB (SOT78D)</p>	 <p style="text-align: center;">sym051</p>
2	T2	main terminal 2		
3	G	gate		
mb	n.c.	mounting base; isolated		

6. Ordering information

Table 3. Ordering information

Type number	Package		Version
	Name	Description	
BTA416Y-800C	TO-220AB	plastic single-ended package; isolated heatsink mounted; 1 mounting hole; 3-lead TO-220	SOT78D