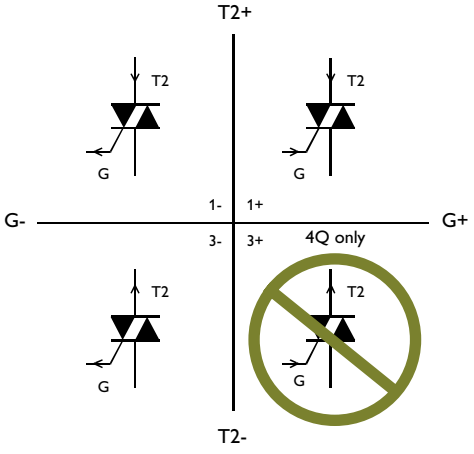
NXP three-quadrant Hi-Com triacs

Get the Hi-Com advantage

Our three-quadrant Hi-Com triacs are your ideal choice for controlling any load, delivering outstanding reliability and simplifying circuit design. Going beyond traditional four-quadrant triacs, they offer huge design efficiency and performance benefits. And our extensive portfolio means you're sure to find the perfect match to your applications needs.

Key benefits

- Less circuit protection required (e.g. snubbers, inductors)
  - Simplifies circuit design
  - Reduces component count
  - Improves reliability
  - Cuts overall cost
- Excellent immunity to false triggering
- Extensive portfolio allows optimal balance between gate sensitivity and false triggering immunity



Key features

- Better dV_D/dt, dV_{com}/dt, dI_{com}/dt capabilities than traditional 4Q triacs
- Choice of gate sensitivity levels (I_{GT}) from 5 to 50 mA
- Choice of load current (I_T) capabilities from 0.8 A up to 25 A
- 600, 800 and 1000 V types available
- 6 packages available including through-hole and surface-mount options

Key applications

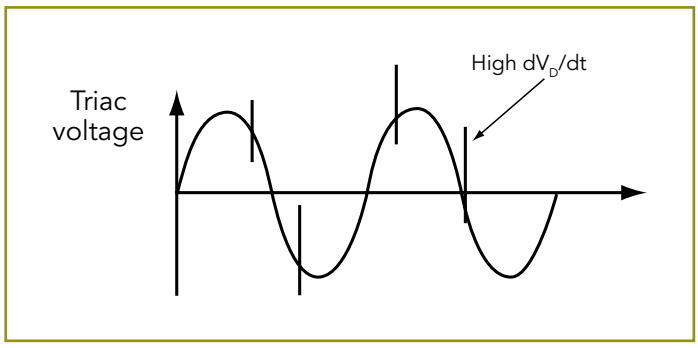
- Electrically noisy environments
- 'Difficult' loads e.g. non-linear, inductive, capacitive, high inrush or PTC resistive
- Any application where uncontrolled turn-on must be avoided
- Any application demanding high immunity to electromagnetic interference (EMI)

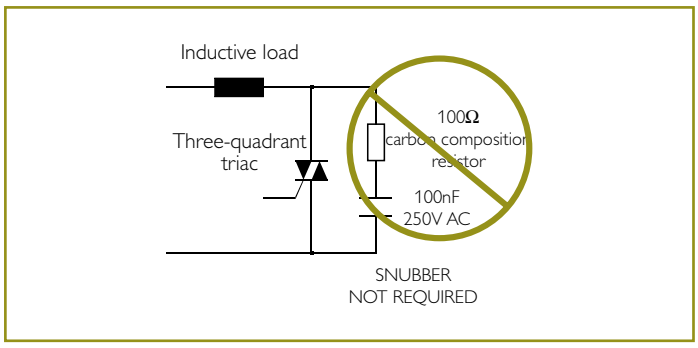
The simple, reliable and inexpensive triac is used to control power in many modern appliances. For equipment using motors or inductive / capacitive loads, our three-quadrant Hi-Com triacs are the ideal solution. These next-generation devices deliver higher immunity to false triggering and electrical noise without additional protection components, ensuring maximum reliability.

NXP founded by Philips

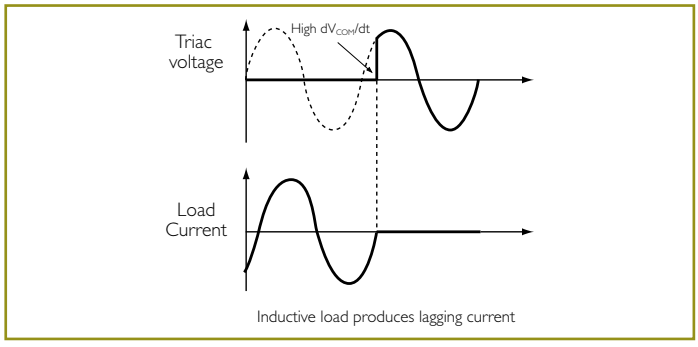
A closer look at the Hi-Com advantages

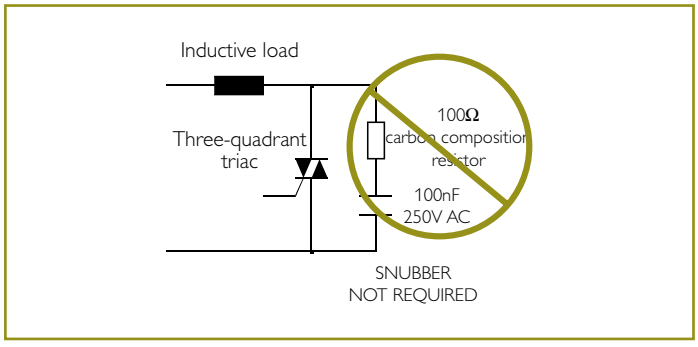
- Higher dV_D/dt capability
  - Prevents triggering by high dV/dt mains transients when off
  - Reduces risk of damage from uncontrolled turn-on
  - Eliminates need for snubber circuit



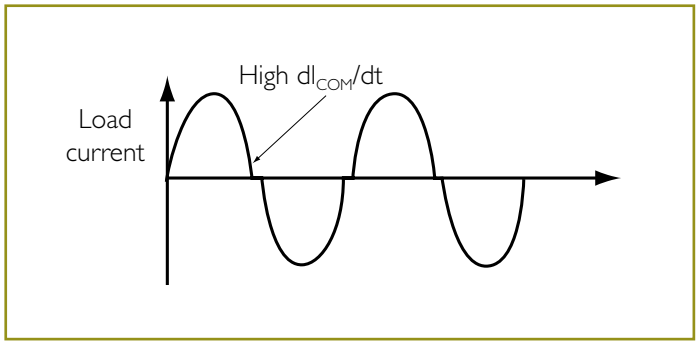


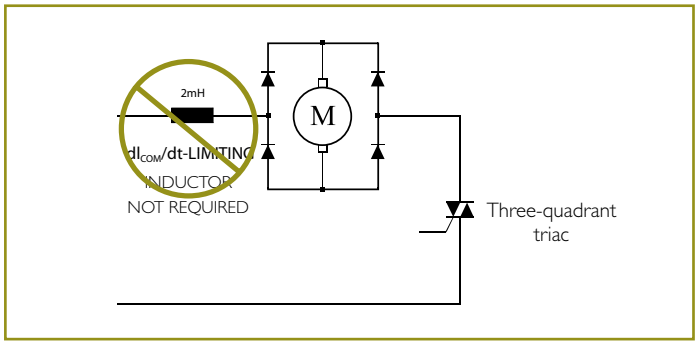
- Higher dV_{com}/dt capability
  - Improves ability to switch off reactive or noisy loads that cause high dV/dt during commutation
  - Eliminates need for snubber circuit



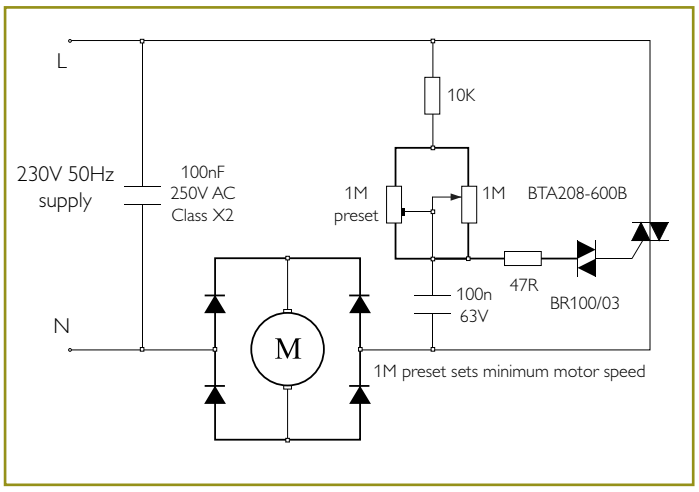


- Higher dI_{com}/dt capability
  - Allows commutation of high dI/dt loads e.g. rectifier-fed inductive loads
  - Eliminates need for additional dI_{com}/dt-limiting series inductor

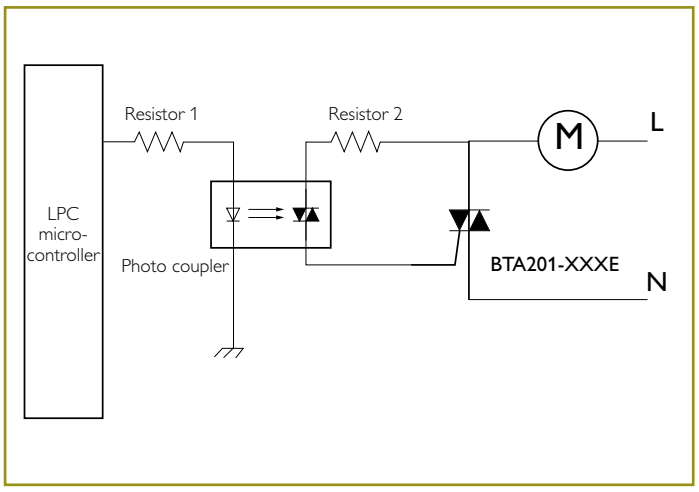




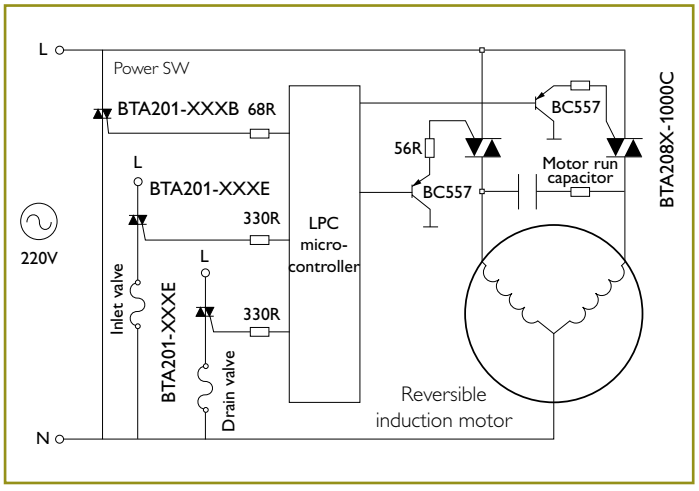
Analog phase control in a blender



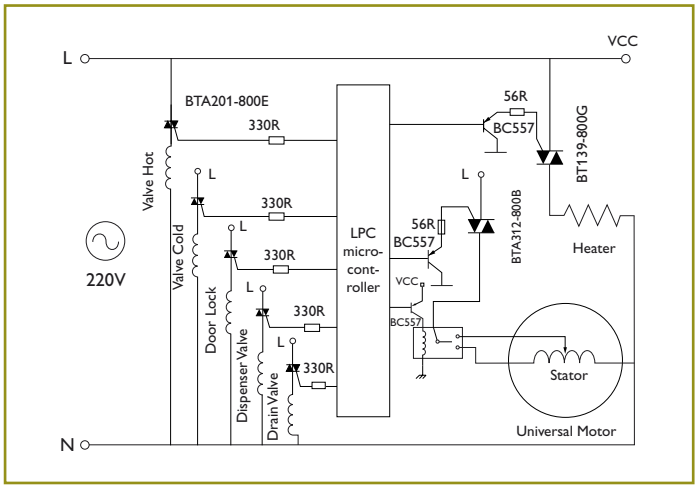
Isolated variable speed control in an air conditioner

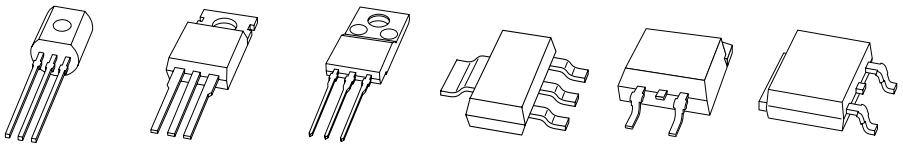


MCU-controlled on / off switch in a vertical-axis washing machine



Variable speed control in a horizontal-axis washing machine





$I_{T[RMS]}$ [A]	V_{DRM} [V]	I_{GT}[max]	SOT54 TO92	SOT78 TO220AB	SOT186A [isolated TO220AB]	SOT223	SOT404 D^2PAK	SOT428 DPAK
0.8	600/800	D/E	BTA2008					
1	600/800	B/E/ER	BTA201					
1	600/800	E				BTA201W		
1	600	B/C/D/E/F				BTA204W		
1	800	C/E				BTA204W		
4	600	B/C/D/E/F		BTA204	BTA204X			BTA204S
4	800	B/C/E		BTA204	BTA204X			BTA204S
8	600	B/D/E/F		BTA208	BTA208X			BTA208S
8	800	B/E		BTA208	BTA208X			BTA208S
8	1000	C			BTA208X		BTA208B	
12	600	B/D/E/F		BTA212	BTA212X		BTA212B	
12	600	B/C/D/E		BTA312	BTA312X		BTA312B	
12	600	CT		BTA312			BTA312B	
12	800	B/E		BTA212	BTA212X		BTA212B	
12	800	B/E		BTA312	BTA312X		BTA312B	
12	800	C/ET		BTA312			BTA312B	
16	600	B/D/E/F		BTA216	BTA216X		BTA216B	
16	600	BT		BTA216				
16	600	BT/D		BTA316				
16	600/800	B/C/E		BTA316	BTA316X		BTA316B	
16	800	B		BTA216	BTA216X		BTA216B	
25	600	BT		BTA225				
25	600/800	B		BTA225			BTA225B	

$I_{GT[max]}$ ratings: B, BT = 50 mA; C, CT = 35 mA; D = 5 mA; E = 10 mA; F = 25 mA

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