

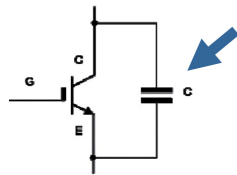
Snubber Caps for High Power Applications In Relation To IGBT Modules

Companion Sheet to the Distributor Web-Based Training

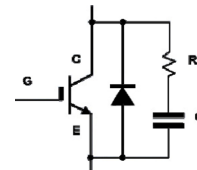
All power electronic devices use switching transistors of some kind. For high power applications IGBT modules are most common. In order to recommend the best snubber capacitor, ask these questions:

1. Are you using IGBT modules in your power electronics equipment? If so are they with screw or pin connections? (If you are selling the modules you will already know.)
2. Will the snubber capacitor be used...

by itself?



Or with a diode in a network?







3. What is the current rating of the IGBT? (100A, 200A, etc.)

With the answers a recommendation can be made

Screw connections

Pin connections

Snubber by itself	 <p>Series C4BS, C4BT direct mount</p> <p>Cap value = 1uF per 100A IGBT rating</p>	 <p>Series C4AS, C4AT PC board mount</p> <p>Cap value = 1uF per 100A IGBT rating</p>
Snubber with diode	 <p>Series C4AS, C4AT PC board mount</p> <p>Cap value = 0.25uF per 100A IGBT rating</p>	 <p>Series C4AS, C4AT PC board mount</p> <p>Cap value = 0.25uF per 100A IGBT rating</p>

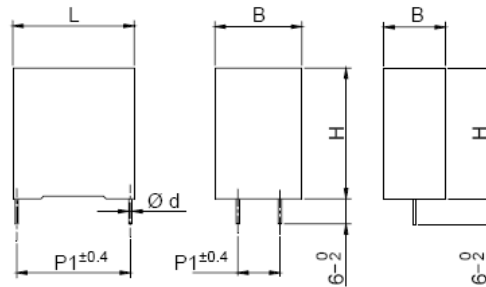
This is a starting point. The engineer will pick the capacitor voltage and final cap value.

KEMET Snubber Capacitor Quick Selector Guide

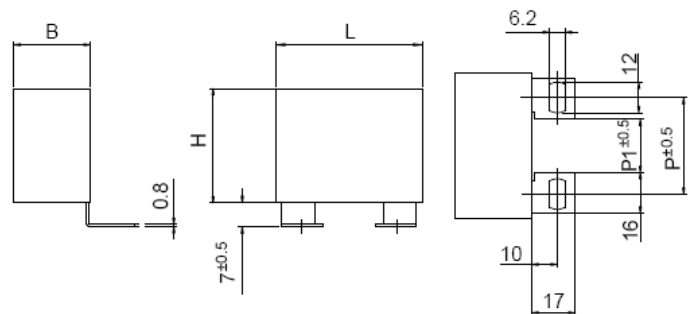
Series	Capacitor type	Rated Voltage	Cap Range	Characteristics
C4AS	Box	850VDC/500VAC 1000VDC/600VAC 1200VDC/630VAC 2000VDC/700VAC 3000VDC/750VAC	0.15 - 5.0 μ F 0.15 - 4.7 μ F 0.1 - 3.5 μ F 0.033 - 1.5 μ F 0.022 - 0.82 μ F	<ul style="list-style-type: none"> • Snubber applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 469 to 3360V/μs • Pitch (p) p = 27.5, 37.5, 52.5mm • Terminals Tinned copper 2 or 4 wires
C4AT	Box	250VDC/160VAC 400VDC/250VAC 450VDC/275VAC 600VDC/350VAC 700VDC/400VAC 850VDC/450VAC	1.0 - 60 μ F 1.0 - 40 μ F 1.0 - 33 μ F 0.68 - 20 μ F 0.47 - 15 μ F 0.22 - 10 μ F	<ul style="list-style-type: none"> • Switching applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 15 to 148V/μs • Pitch (p) p = 27.5, 37.5, 52.5mm • Terminals Tinned copper 2 or 4 wires
C4BS	IGBT box	850VDC/550VAC 1000VDC/600VAC 1200VDC/630VAC 2000VDC/700VAC 3000VDC/750VAC	0.47 - 5.0 μ F 0.47 - 4.0 μ F 0.33 - 3.3 μ F 0.10 - 1.5 μ F 0.047 - 0.82 μ F	<ul style="list-style-type: none"> • Snubber-IGBT applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 469 to 3361V/μs • Box Length (L) L = 32 to 57.5mm • Terminals Tinned brass lugs
C4BT	IGBT box	250VDC/160VAC 400VDC/250VAC 600VDC/330VAC 700VDC/400VAC 850VDC/450VAC	4.7 - 60 μ F 3.3 - 40 μ F 2.5 - 20 μ F 1.5 - 15 μ F 1.0 - 10 μ F	<ul style="list-style-type: none"> • Switching-IGBT applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 27 to 148V/μs • Box Length (L) L = 32 to 57.5mm • Terminals Tinned brass lugs

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Series **C4AS** and **C4AT** are for PC board mounting. Four leads are standard. (Two leads on the smallest sizes.)



Series **C4BS** and **C4BT** are for direct IGBT mounting. Multiple tab styles are available.



Complete specifications are available directly by [clicking here](#). Or visit <http://www.kemet.com> and select "Arcotronics" at the bottom of the page.