

# Type SCD IGBT Snubber Capacitor Modules

## High dV/dt Direct Mount IGBT Snubber



Style SCD offers protection against voltage transients in low to medium current IGBT applications where high dV/dt is encountered. Connect these capacitors from C1 to E2 on a dual IGBT module or from P to N on a six-pack module to eliminate severe voltage transients. Parts ending with Z25 fit IGBTs with 23mm, 25mm and 28mm lead spacing. If you have a preferred lead spacing, please specify.

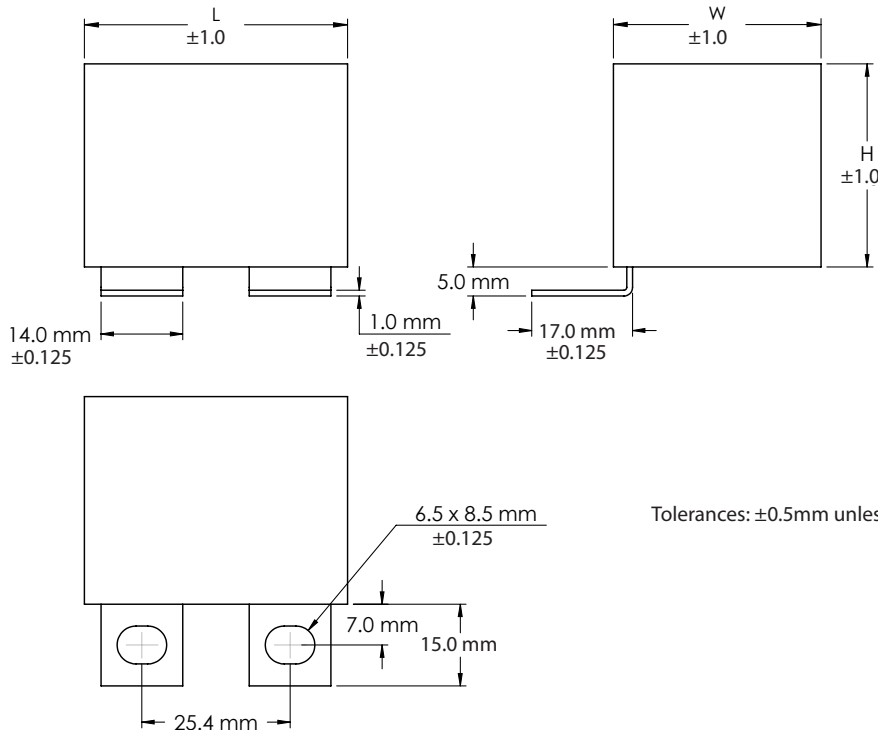
### Highlights

- High peak & RMS current capability
- Mount directly to the IGBT module
- Low inductance
- Low loss polypropylene dielectric
- Self healing
- Other terminal spacing and capacitance values available.
- We can build to your specs!
- 85 °C ambient temperature

### Specifications

|                                              |                                                            |
|----------------------------------------------|------------------------------------------------------------|
| Capacitance Range                            | 0.22 to 4.7 $\mu$ F                                        |
| Capacitance Tolerance                        | $\pm$ 10% (K) standard, $\pm$ 5% (J) optional              |
| Rated Voltage                                | 600 to 2000 Vdc                                            |
| Operating Temperature Range                  | -55 °C to 85 °C                                            |
| Maximum rms Current                          | Check tables for values                                    |
| Test Voltage between Terminals @ 25°C        | 160% rated DC voltage for 60 s                             |
| Test Voltage between Terminals & Case @ 25°C | 3 kVac @ 50/60 Hz for 60 s                                 |
| Life Test                                    | 2000 h @ 85 °C, 125% rated DC voltage                      |
| Life Expectancy                              | 60,000 h @ rated Vdc, 70 °C<br>30,000 h @ rated Vac, 70 °C |
| RoHS Compliant                               |                                                            |

### Dimensions



| Construction Details |                   |
|----------------------|-------------------|
| Case Material        | Plastic UL94V-0   |
| Resin Material       | Dry Resin UL94V-0 |
| Terminal Material    | Tin Plated Copper |

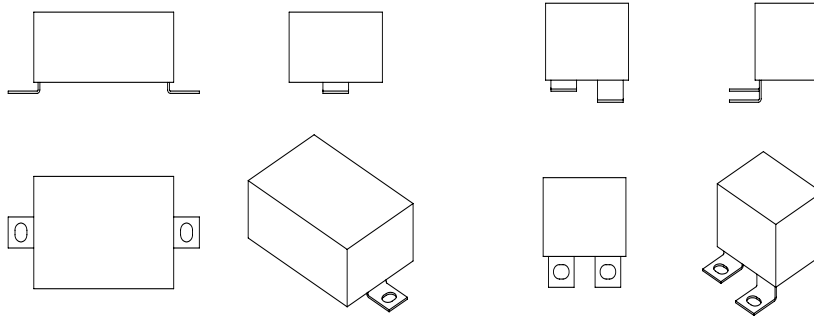
Tolerances:  $\pm$ 0.5mm unless otherwise specified

# Type SCD IGBT Snubber Capacitor Modules

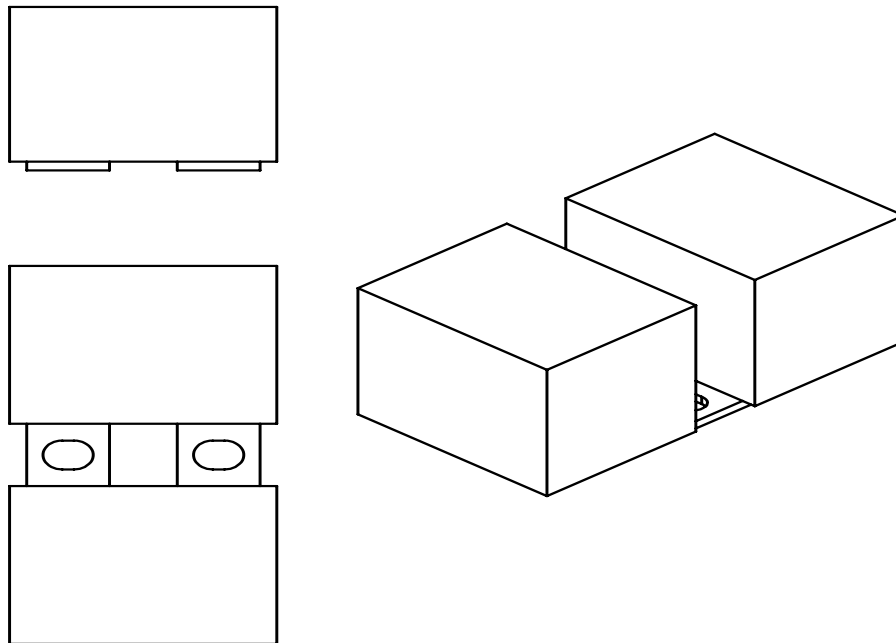
High dV/dt Direct Mount IGBT Snubber

## Mounting Across the Bus?

CDE Will Accommodate Your Bus Structure



## Dual Snubber Assembly Option



## Part Numbering System

| SCD                     | 105               | K              | 122            | A                      | 3                          | -                 | 25          | -F                       |
|-------------------------|-------------------|----------------|----------------|------------------------|----------------------------|-------------------|-------------|--------------------------|
| Series Type Designation | Capacitance in pF | Tolerance Code | Voltage        | Internal Assembly Code | Type of Section to be used | Lug Configuration | Lug Spacing | RoHS Compliant Indicator |
|                         | 104 = 0.1 $\mu$ F | J = $\pm$ 5%   | 601 = 600 Vdc  |                        |                            | Z = Standard      | 22 = 22 mm  |                          |
|                         | 105 = 1 $\mu$ F   | K = $\pm$ 10%  | 122 = 1200 Vdc |                        |                            | 25.4 mm C-C       | 24 = 24 mm  |                          |
|                         | 225 = 2.2 $\mu$ F |                | 202 = 2000 Vdc |                        |                            |                   | 25 = 25 mm  |                          |
|                         |                   |                |                |                        |                            |                   | 28 = 28 mm  |                          |
|                         |                   |                |                |                        |                            |                   | 29 = 29 mm  |                          |

# Type SCD IGBT Snubber Capacitor Modules

## High dV/dt Direct Mount IGBT Snubber

### Ratings

**Note:** Other ratings, sizes and performance specification available upon request. Contact us.

| Catalog<br>Part Number | Cap.<br>(µF) | Volts |       | dV/dt<br>(V/µs) | I <sub>pk</sub><br>(A) | ESR<br>(mΩ) | I <sub>rms</sub><br>100 kHz |           |           |           |
|------------------------|--------------|-------|-------|-----------------|------------------------|-------------|-----------------------------|-----------|-----------|-----------|
|                        |              | (Vdc) | (Vac) |                 |                        |             | 55 °C<br>(Arms)             | W<br>(mm) | L<br>(mm) | H<br>(mm) |
| <b>600 Vdc</b>         |              |       |       |                 |                        |             |                             |           |           |           |
| SCD474K601A3Z25-F      | 0.47         | 600   | 275   | 250             | 118                    | 9           | 9.2                         | 24.6      | 47.0      | 24.1      |
| SCD684K601A3Z25-F      | 0.68         | 600   | 275   | 250             | 170                    | 7           | 11.5                        | 29.0      | 47.0      | 26.7      |
| SCD105K601A3Z25-F      | 1.00         | 600   | 275   | 200             | 200                    | 5           | 14.0                        | 29.0      | 47.0      | 26.7      |
| SCD155K601A3Z25-F      | 1.50         | 600   | 275   | 150             | 225                    | 4           | 17.1                        | 29.0      | 47.0      | 26.7      |
| SCD205K601A3Z25-F      | 2.00         | 600   | 275   | 150             | 300                    | 3           | 20.7                        | 32.3      | 45.1      | 35.6      |
| SCD335K601A3Z25-F      | 3.30         | 600   | 400   | 300             | 825                    | 5           | 35.0                        | 38.1      | 52.1      | 38.1      |
| SCD475K601A3Z25-F      | 4.70         | 600   | 400   | 250             | 1175                   | 4           | 46.2                        | 46.4      | 56.5      | 50.2      |
| <b>1000 Vdc</b>        |              |       |       |                 |                        |             |                             |           |           |           |
| SCD474K102A3Z25-F      | 0.47         | 1000  | 275   | 250             | 118                    | 11          | 9.2                         | 24.6      | 47.0      | 24.1      |
| SCD474K102D3Z25-F      | 0.47         | 1000  | 500   | 700             | 329                    | 8           | 12.1                        | 29.0      | 47.0      | 26.7      |
| SCD684K102A3Z25-F      | 0.68         | 1000  | 275   | 200             | 136                    | 7           | 11.5                        | 29.0      | 47.0      | 26.7      |
| SCD684K102D3Z25-F      | 0.68         | 1000  | 500   | 500             | 340                    | 7           | 14.4                        | 29.0      | 47.0      | 26.7      |
| SCD105K102A3Z25-F      | 1.00         | 1000  | 275   | 200             | 200                    | 4           | 14.0                        | 29.0      | 47.0      | 26.7      |
| SCD105K102D3Z25-F      | 1.00         | 1000  | 500   | 400             | 400                    | 5           | 17.5                        | 29.0      | 47.0      | 26.7      |
| SCD155K102A3Z25-F      | 1.50         | 1000  | 275   | 160             | 240                    | 4           | 17.9                        | 32.3      | 45.1      | 35.6      |
| SCD155K102D3Z25-F      | 1.50         | 1000  | 500   | 400             | 600                    | 3           | 22.4                        | 34.8      | 45.1      | 35.6      |
| SCD205K102A3Z25-F      | 2.00         | 1000  | 275   | 160             | 320                    | 4           | 20.9                        | 34.8      | 45.1      | 35.6      |
| SCD205K102D3Z25-F      | 2.00         | 1000  | 500   | 400             | 800                    | 5           | 26.2                        | 38.1      | 52.1      | 38.1      |
| <b>1200 Vdc</b>        |              |       |       |                 |                        |             |                             |           |           |           |
| SCD224K122A3Z25-F      | 0.22         | 1200  | 500   | 650             | 143                    | 19          | 7.9                         | 24.6      | 47.0      | 24.1      |
| SCD334K122A3Z25-F      | 0.33         | 1200  | 500   | 650             | 215                    | 13          | 10.0                        | 29.0      | 47.0      | 26.7      |
| SCD474K122A3Z25-F      | 0.47         | 1200  | 500   | 500             | 235                    | 10          | 12.0                        | 29.0      | 47.0      | 26.7      |
| SCD684K122A3Z25-F      | 0.68         | 1200  | 500   | 500             | 340                    | 7           | 15.1                        | 32.3      | 45.1      | 35.6      |
| SCD105K122A3Z25-F      | 1.00         | 1200  | 500   | 500             | 500                    | 5           | 18.5                        | 34.8      | 45.1      | 35.6      |
| SCD155K122A3Z25-F      | 1.50         | 1200  | 500   | 400             | 600                    | 4           | 23.9                        | 38.1      | 52.1      | 38.1      |
| SCD205K122A3Z25-F      | 2.00         | 1200  | 500   | 400             | 800                    | 4           | 30.1                        | 46.4      | 56.5      | 50.2      |
| SCD305K122C3Z25-F      | 3.00         | 1200  | 500   | 400             | 1200                   | 5           | 39.7                        | 76.2      | 62.9      | 38.1      |
| <b>1600 Vdc</b>        |              |       |       |                 |                        |             |                             |           |           |           |
| SCD224K162A3Z25-F      | 0.22         | 1600  | 500   | 650             | 143                    | 19          | 7.9                         | 24.6      | 47.0      | 24.1      |
| SCD334K162A3Z25-F      | 0.33         | 1600  | 500   | 650             | 215                    | 12          | 10.0                        | 29.0      | 47.0      | 26.7      |
| SCD474K162A3Z25-F      | 0.47         | 1600  | 500   | 650             | 306                    | 10          | 12.6                        | 32.3      | 45.1      | 35.6      |
| SCD684K162A3Z25-F      | 0.68         | 1600  | 500   | 650             | 442                    | 7           | 15.3                        | 34.8      | 45.1      | 35.6      |
| SCD105K162A3Z25-F      | 1.00         | 1600  | 500   | 500             | 500                    | 6           | 19.5                        | 38.1      | 52.1      | 38.1      |
| SCD155K162A3Z25-F      | 1.50         | 1600  | 500   | 400             | 600                    | 5           | 25.6                        | 41.9      | 68.6      | 38.1      |
| SCD205K162A3Z25-F      | 2.00         | 1600  | 500   | 400             | 800                    | 5           | 30.6                        | 44.5      | 66.7      | 46.4      |
| <b>2000 Vdc</b>        |              |       |       |                 |                        |             |                             |           |           |           |
| SCD224K202A3Z25-F      | 0.22         | 2000  | 500   | 800             | 176                    | 19          | 8.2                         | 24.6      | 47.0      | 24.1      |
| SCD334K202A3Z25-F      | 0.33         | 2000  | 500   | 800             | 264                    | 13          | 10.5                        | 32.3      | 45.1      | 35.6      |
| SCD474K202A3Z25-F      | 0.47         | 2000  | 500   | 600             | 282                    | 10          | 13.0                        | 34.3      | 55.9      | 30.5      |
| SCD684K202A3Z25-F      | 0.68         | 2000  | 500   | 600             | 408                    | 8           | 16.1                        | 38.1      | 52.1      | 38.1      |
| SCD105K202A3Z25-F      | 1.00         | 2000  | 500   | 600             | 600                    | 6           | 21.3                        | 46.4      | 56.5      | 50.2      |

Note: Modify Catalog Part Number to specify lead spacing. Example: 44mm spacing would use -44 instead of Z25. Other capacitance values and lead orientations are available. Contact us.

**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.