

# SOLID STATE RELAYS



BCH ELECTRIC LIMITED



# Solid State Relay

BCH Solid State Relays are introduced in Collaboration with Celduc, France one of the leading manufacturer of SSRs. Discover now the advantages of our industrial SSRs for all your applications.

## Features

- Electronic switching of load - No contact bounce & arcing
- Available in single and three-phase for various load types
- Complies with IEC 60947-4-2 for Motor Control & IEC 60947-4-3 for other loads
- CE marked
- Range : 12 A to 125 A
- Long electrical life-over 1000 million operations
- High switching frequency
- Impact and vibration resistant
- Can be used in dusty and corrosive atmosphere
- Compact size
- Low Level input/output control possible without interfacing
- Wide operating temperature
- Direct PLC Compatibility for load control

## Specification common to range

- Input / Output (opto Isolation: 4000V)
- Operating frequency range 0.1-440Hz (10-440Hz for 3-phase)
- Maximum Off-state voltage rise (dV/dt) 500V / $\mu$ s
- Minimum Load current 5mA RMS

## Applications

- Industrial heating and temperature control
- Motor control
- Capacitor control
- Transformer control
- Lamps control
- Solenoid control
- Air conditioning.....and more

## Single Phase SSR

### SC9 Series : Heating Application

- Non-repetitive max. Peak Voltage 600V
- Display LED (optional)
- Control Voltage Range 4-30V DC (4-50mA for LED version)
- Main Voltage 12-280V AC
- Zero-Cross
- Maximum Leakage Current (Nominal Voltage, 50 Hz) 1 mA RMS

Catalogue No. (LED Version)	Catalogue No. (Standard Version)	AC51 Rating (Amp)	I <sup>2</sup> t (A <sup>2</sup> s)
SC941160	SC941110	12	72
SC942160	SC942110	25	288
SC944160	SC944110	40	612
SC945160	SC945110	50	1500
SC947160	SC947110	75	5000

### SC8 Series : High Voltage and Capacitive Load Application

- Non-repetitive max. Peak Voltage 1600V
- Control Voltage Range 7-30V DC
- Main Voltage 24-660V AC
- Zero-Cross
- Maximum Leakage Current (Nominal Voltage, 50 Hz) 1 mA RMS

Catalogue No.	AC51 Rating (Amp)	KVAR Rating (Amp)	I <sup>2</sup> t (A <sup>2</sup> s)
SC885100	50	9	1500
SC887100	75	16	5000
SC888100	95	25	11250
SC889100	125	33	20000

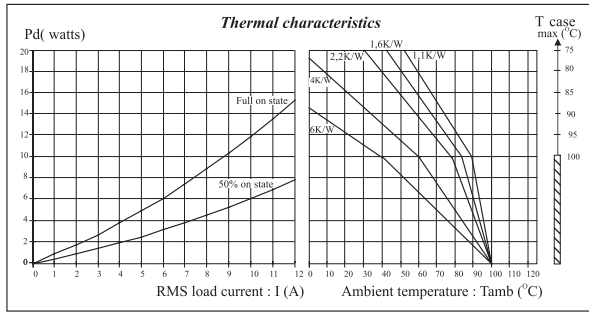




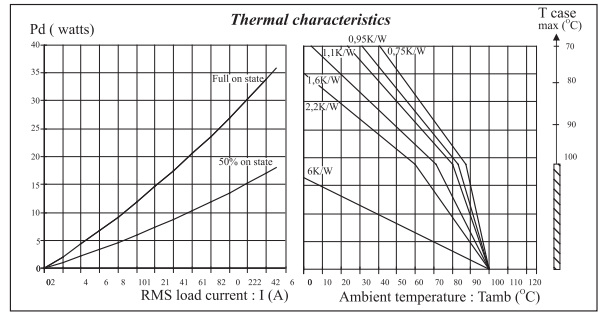


# Thermal characteristic curves

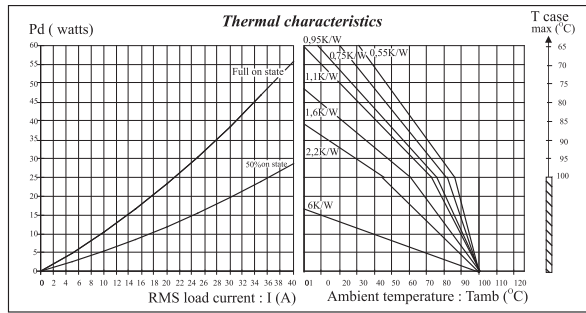
SC SERIES 12A



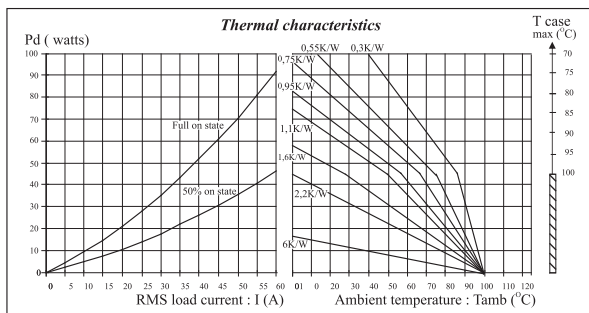
SC SERIES 25A



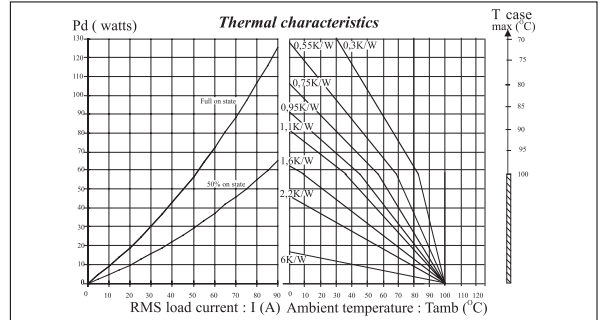
SC SERIES 40A



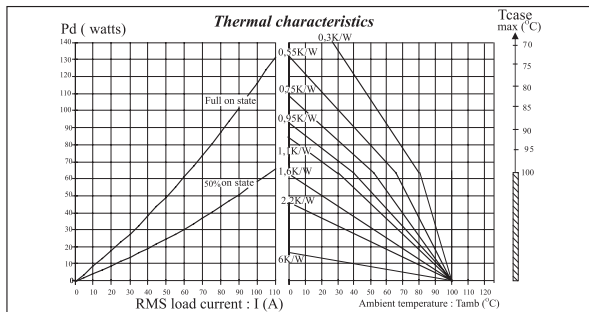
SC SERIES 45/50A



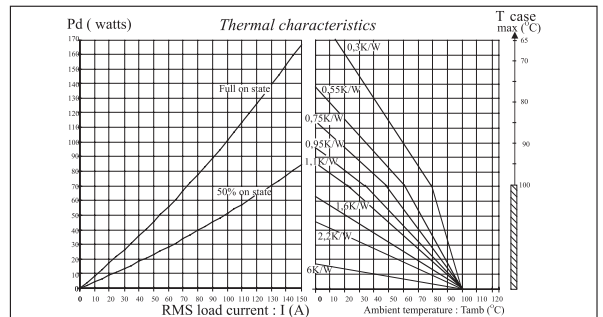
SC SERIES 75A



SC SERIES 95A



SC SERIES 125A





## Suggested Heat Sink Rth values (K/W) for load rating at various ambient temperatures

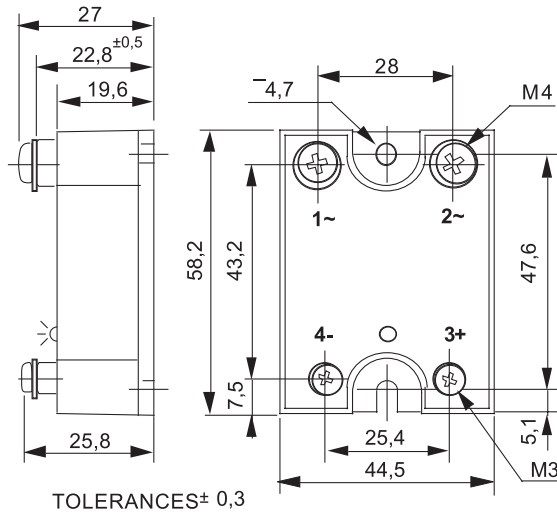
	25°C	35°C	45°C	55°C
12A	2.2	2.2	2.2	1.1
25A	1.1	1.1	0.3	-
40A	0.3	0.3	-	-
50A	0.3	0.3	0.3	0.3
75A	0.3	0.3	0.3	0.3
95A	0.3	0.3	0.3	-
125A	0.3	0.3	-	-



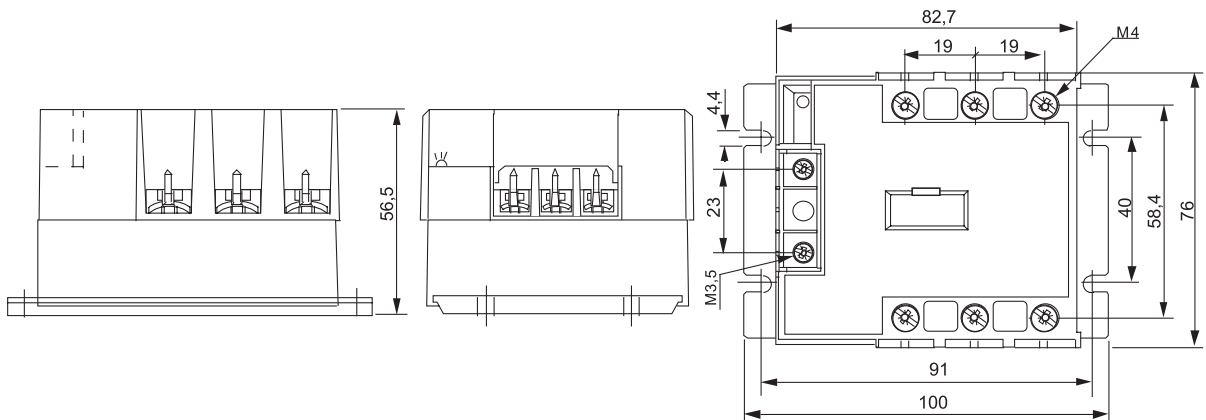
Heat Sink-65-mm

**Note :** Apply heat sink compound between SSR base and external heat sink. In case of closely packed units the ambient temperature condition should be considered carefully. For protection against short circuits proper short-circuit protection device (SCPD) (having  $I^2t$  rating lower than that of SSR  $I^2t$ ) must be used.

## Dimensional details

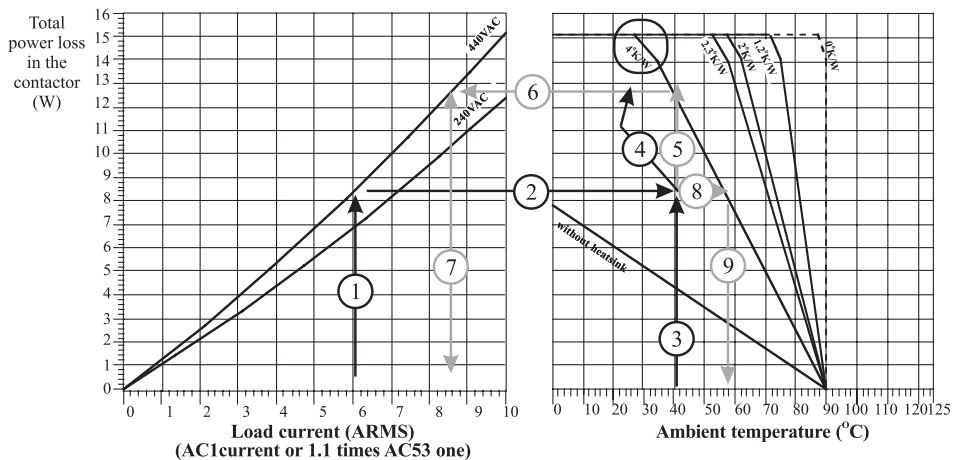


Dimensional Details-SC7 / SC8 / SC9 series.  
LED shown is optional.



Dimensional Details-SVT series

# How to use thermal curves



## Selection Criteria

1. Type of load and load current
2. Ambient temperature

- From left hand curve select the power corresponding to nominal, thermal equivalent or 1.1 times of the load current depending upon the type of load.
- Read horizontally on the right hand curve and stop above the ambient temperature with which the relay will be operating.
- The point found is in the middle or on a curve corresponding to a certain type of heat sink (the valve, thermal resistance, is expressed in K/W).
- The right heat sink is one with thermal resistance curve located above the determined point.
- The reverse path can be followed to check the current and ambient temperature tolerances available.

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