SOLID STATE RELAYS

BHARTIA

BCH ELECTRIC LIMITED

we care for you

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 /µs
- 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^2t (A^2s)
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^2t (A^2s)
SC885100	50	9	1500
SC887100	75	16	5000
SC888100	95	25	11250
SC889100	125	33	20000

SC7 Series : Motor Control Applications

- Non-repetitive max. Peak Voltage 600V
- Random Switching
- Control Voltage Range 3-30V DC
- Control Voltage Range 3-30 mA
- Main Voltage 12-280V AC
- Maximum Leakage Current (Nominal Voltage, 50 Hz) 3 mA RMS

Catalogue No.	AC51 Rating (Amp)	AC3 Rating (A)	I^2t (A^2s)	Non Repetitive Overload Current (@10ms)
SC741110	12	2.5	72	120
SC742110	25	5	312	250
SC744110	40	9	612	350

SC7 Series : Motor Control Applications

- Non-repetitive max. Peak Voltage 1200V
- Random switching
- Control Voltage Range 4-30V DC
- Main Voltage 24-520V AC
- Maximum Leakage Current (Nominal Voltage, 50 Hz) 2.5 mA RMS

Catalog No.	AC51 Rating (Amp)	AC3 Rating (A)	I^2t (A^2s)	Non Repetitive Overload Current (@10ms)
SC761110	12	2.5	72	120
SC762110	25	5	256	230
SC764110	50	12	1500	550
SC767110	75	16	5000	1000
SC768110	95	20	11000	1500
SC769110	125	30	20000	2000

Three Phase SSR

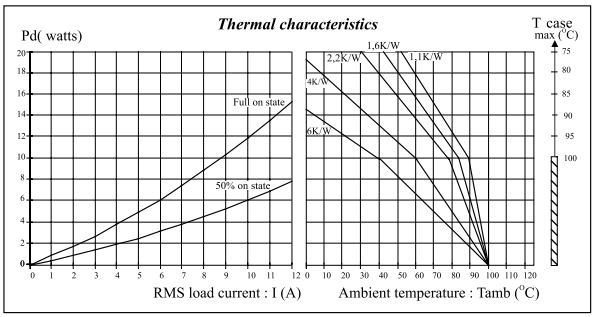
SVT Series

- Non-repetitive max. Peak Voltage 1200V
- Zero-Cross
- Control Voltage Range 8.5-30 V DC
- Control Current Range 10-45 mA
- Release Control Voltage 4V
- Main Voltage 24-520 V RMS
- On State Voltage Drop (@Nominal Current) 1.4 Volts
- Max. di/dt non-repetitive 50 A/ms
- IP20-RC and VDR Protected

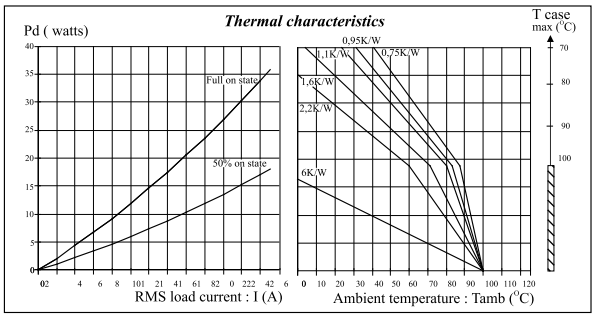
Catalog No. (AC) Control Volt 90-240V Control Current 3-11mA	Catalog No. (DC) Control Volt 8.5-30V Control Current10-45mA	AC51 Rating (Amp)	AC3 Rating (A)	I^2t (A2S)	Non Repetitive Overload Current (@10ms)	Off State Leakage Current, mA (@Nominal Voltage, 50 Hz)
SVT861994	SVT861394	12	2.8	75	120	1
SVT864994	SVT864394	50	12	1500	550	5
SVT867994	SVT867394	50	16	5000	1000	5
SVT868994	SVT868394	50	24	11000	1500	5
SVT869994	SVT869394	50	32	20000	2000	5

Thermal characteristic curves

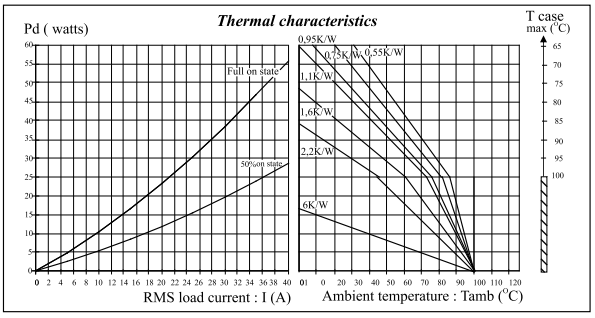
SC SERIES 12A



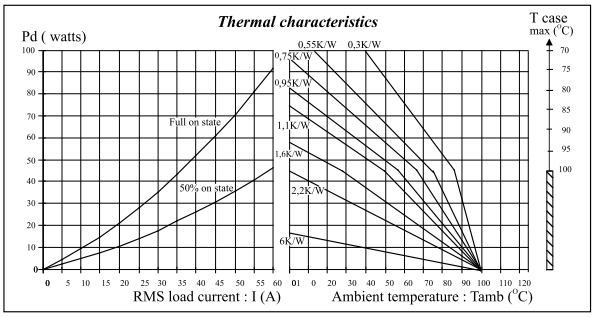
SC SERIES 25A



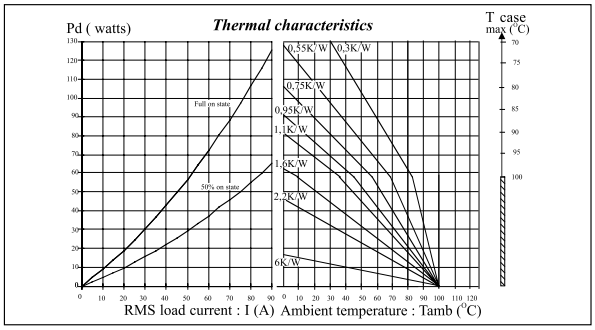
SC SERIES 40A



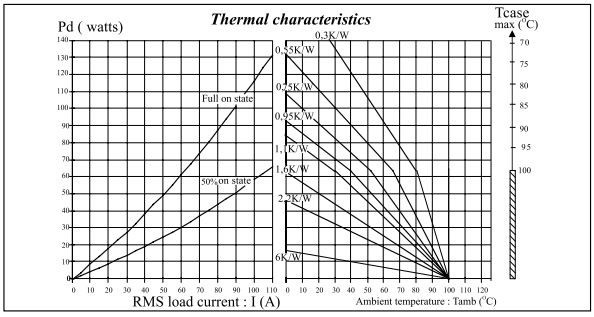
SC SERIES 45/50A



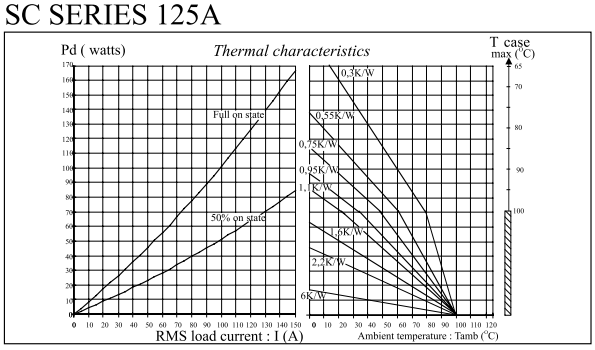
SC SERIES 75A



SC SERIES 95A



SC SERIES 125A



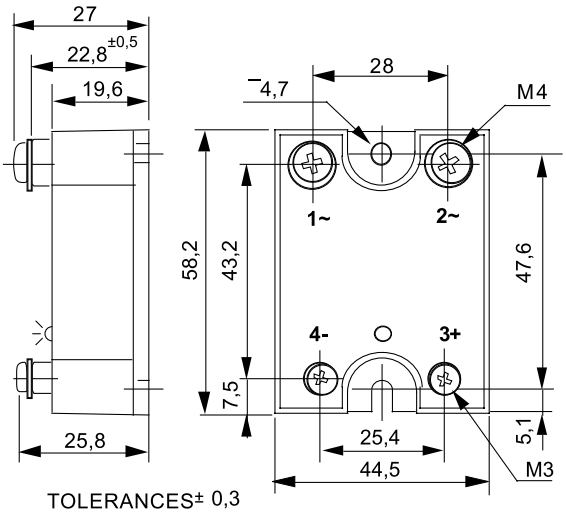
Suggested Heat Sink Rth values (K/W) for load rating at various ambient temperatures

	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	-	-

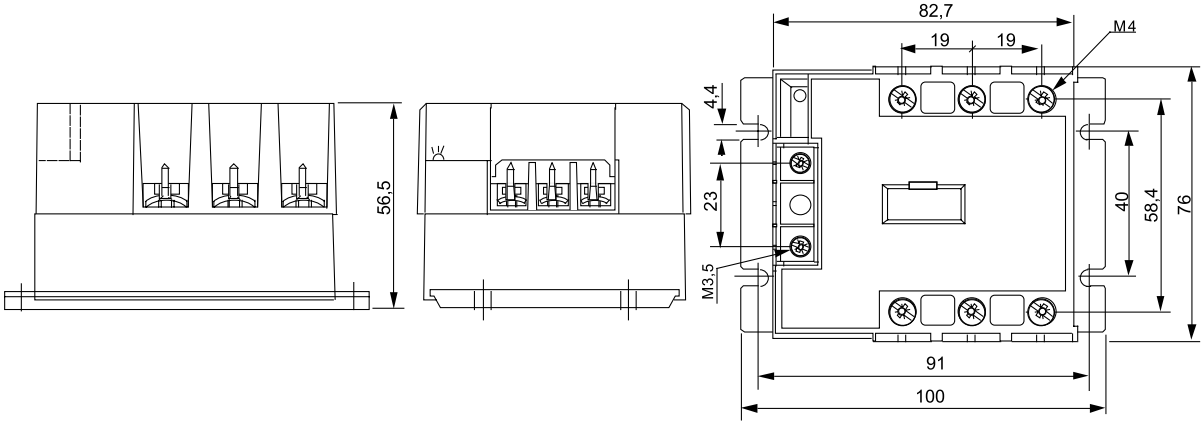
Heat Sink-65-mm

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

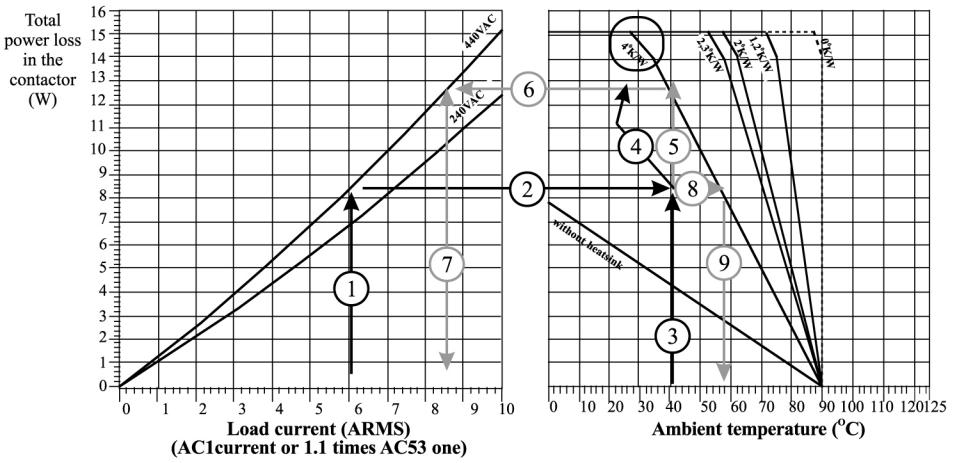


Dimensional Details-SC7 / SC8 / SC9 series.
LED shown is optional.



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 cheek the current and ambient temperature tolerances available.