53TP SERIES | IP20

PANEL MOUNT SOLID STATE RELAYS

Features

- 3-phase solid state relay
- Ratings 25 A, 50 A per phase @ 48-530 VAC
- 2 package styles IP20 or IP00 (See IP00 datasheet for more information)
- SCR output for heavy industrial loads
- AC or DC control
- Zero voltage (resistive loads) or instantaneous (inductive loads) output
- LED input status indicator
- Transient protection built-in

PRODUCT SELECTION

Control Voltage	25 A	50 A
90-140 VAC	B53TP25C	B53TP50C
180-260 VAC	C53TP25C	C53TP50C
4-32 VDC	D53TP25C	D53TP50C
18-36 VAC	E53TP25C	E53TP50C

SPECIFICATIONS

AC Output [1]

Description	25 A	50 A
Operating Voltage (47-63 Hz) [Vrms]	48-530	48-530
Transient Overvoltage [Vpk] [2]	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	3	3
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/sec] [2]	500	500
Maximum Load Current [Arms] [3]	25	50
Minimum Load Current [Arms]	0.1	0.1
Maximum 1 Cycle Surge Current (50/60 Hz) [Apk]	275/300	710/750
Maximum 1 Second Surge Current (50/60 Hz) [Apk]	85	150
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.35	1.35
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.24	0.12
Maximum 1/2 Cycle I^2t for Fusing (50/60 Hz) [A^2 sec]	380/370	2520/2320
Minimum Power Factor (with Maximum Load)	0.5	0.5
UL/IEC 60947 Motor Control Ratings at 120V [HP/KW] [4]	0.75/0.56	1.5/1.11
UL/IEC 60947 Motor Control Ratings at 240V [HP/KW] [4]	1/0.74	3/2.22
UL/IEC 60947 Motor Control Ratings at 380V [HP/KW] [4]	2/1.48	5/3.7
UL/IEC 60947 Motor Control Ratings at 480V [HP/KW] [4]	3/2.22	7.5/5.55

Input [1]

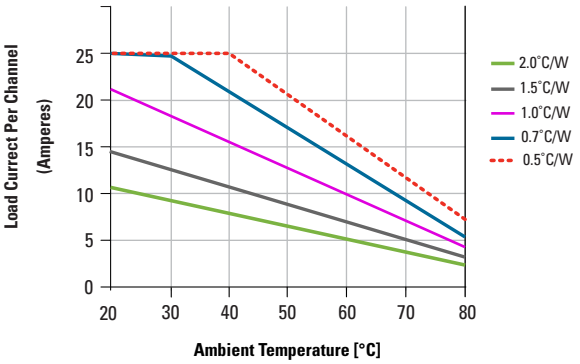
Description	D53	B53	C53	C53
Control Voltage Range	4-32 VDC	90-140 VAC	180-260 VAC	18-36 VAC
Minimum Turn-On Voltage	4.0 VDC	90 VAC	180 VAC	18 VAC
Minimum Turn-Off Voltage	1.0 VDC	10 VAC	10 VAC	2 VAC
Minimum Input Current (for on-state)	24 mA	7 mA	7 mA	15 mA
Maximum Input Current	35 mA	16 mA	20 mA	20 mA
Nominal Input Impedance	Current Regulated	Current Regulated	Current Regulated	Current Regulated
Maximum Turn-On Time [msec] [5]	8.33	20	20	20
Maximum Turn-Off Time [msec]	8.33	30	30	30

General [1]

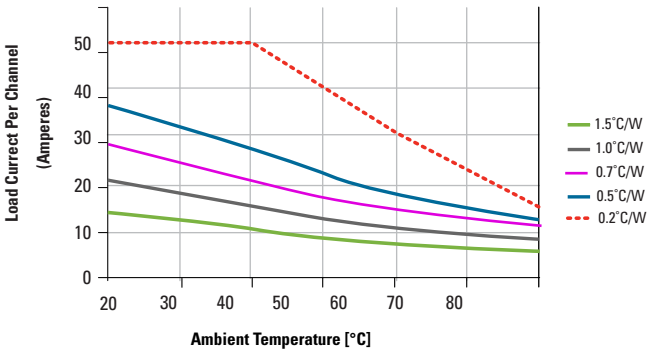
Description	Parameters
Dielectric Strength, Input/Output/Base (50/60 Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Weight (typical)	13.1 oz (370g)
Encapsulation	NA
Terminals	Hardware Furnished, mounted
Screws and Saddle clamps	Zinc plated Steel
Input Terminal Screw Torque Range: [lb-in/Nm]	8-10 / 0.9-1.1
Output Terminal Screw Torque Range: [lb-in/Nm]	15-20 / 1.7-2.2

THERMAL DERATE INFORMATION

DERATE CURVES:
53TP IP20 25A

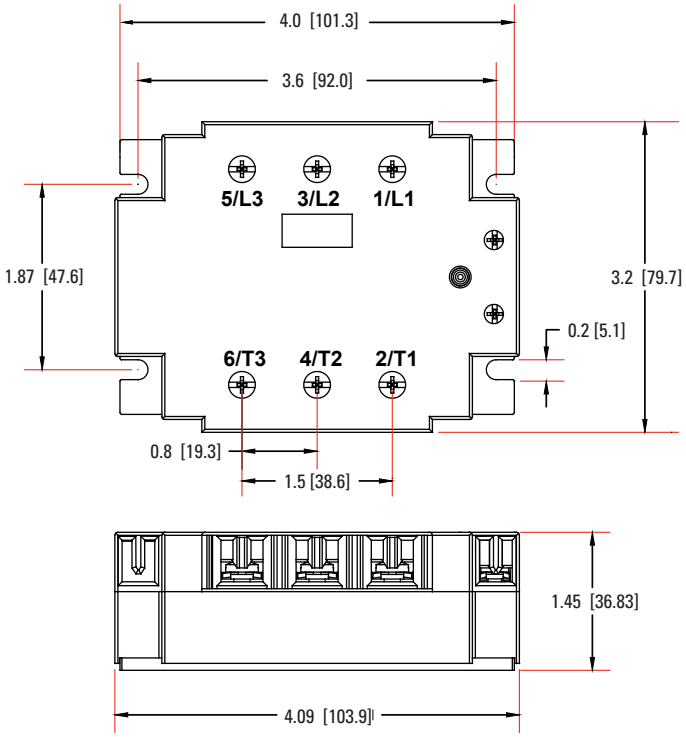


DERATE CURVES:
53TP IP20 50A



MECHANICAL SPECIFICATIONS

Tolerances: ±0.02 in / 0.5 mm
All dimensions are in: inches [millimeters]



ORDERING OPTIONS

Example : D53TP25CH-10

D	53TP	25	C	H	-10

Control Voltage

B: 90-140 VAC
C: 180-260 VAC
D: 4-32 VDC
E: 18-36 VAC

Series

53TP

Rated Load Current

25: 25 Amps
50: 50 Amps

Cover

C: Included (IP20)

Relay Options

Blank: Not included
H: Included

Relay Options

Blank: Zero Voltage Turn-On
-10: Instantaneous Turn-On

— Required for valid part number
☐ For options only and not required for valid part number

GENERAL NOTES

[1] All parameters at 25°C unless otherwise specified.
[2] Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
[3] Heat sinking required, see page 3 for derating curves.
[4] At 40°C Ambient temperature.
[5] Turn-on time for Instantaneous turn-on versions is 0.02 msec (DC Control Models)

AGENCY APPROVALS & CERTIFICATIONS

c UL us E79183 CSA LR56339 CE RoHS 50

Designed in accordance with the requirements of IEC 62314
EN60950 : Meets the requirements of sections1.5: 1,7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:
IEC 62314
IEC 60068-2-6 35mm / 10-55Hz
IEC 60068-2-27 15G / 11ms
IEC 1000-4-2 : Electrostatic Discharge – Level 3
IEC 1000-4-3 : Radiated Electromagnetic Noise – Level 3
IEC 1000-4-4 : Electrically Fast Transients – Level 3
IEC 1000-4-5 : Electrical Surges – Level 3
IEC 1000-4-6 : Conducted Electromagnetic Noise – Level 3

WARNINGS

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE
- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH
- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

Rev. 07/25/24 ECN 21039 FDE-07-01 Rev. B

CONTACT US

Americas
+1 (800) 350 2727
sales.crydom@sensata.com
Europe, Middle East & Africa
+44 (1202) 416170
ssr-info.eu@sensata.com
Asia Pacific
sales.isasia@list.sensata.com
China +86 (21) 2306 1500
Japan +81 (45) 277 7117
Korea +82 (31) 601 2004
India +91 (80) 67920890
Rest of Asia +886 (2) 27602006 ext 2808