SB® 50 Connector

Up to 120 amps

Product Description

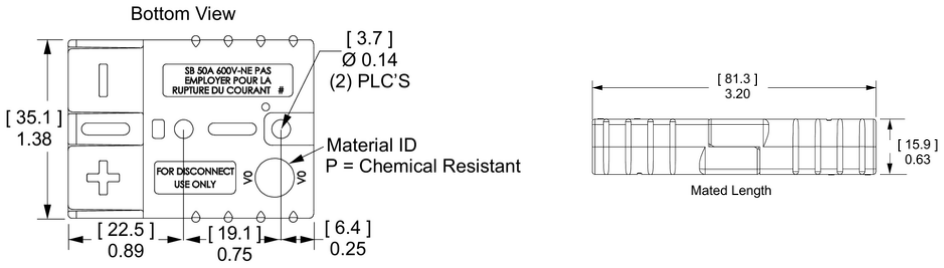
Based off the design pioneered by Anderson™ in 1953, the two pole SB® connectors set the standard for DC power distribution and battery connections. SB® 50 connectors feature a one piece plastic housing using stainless steel springs to hold low resistance contacts in place. Wires sizes from 16 to 6 AWG (1.5 to 16 mm²) are held in the smallest of the SB® series housings.

Product Features

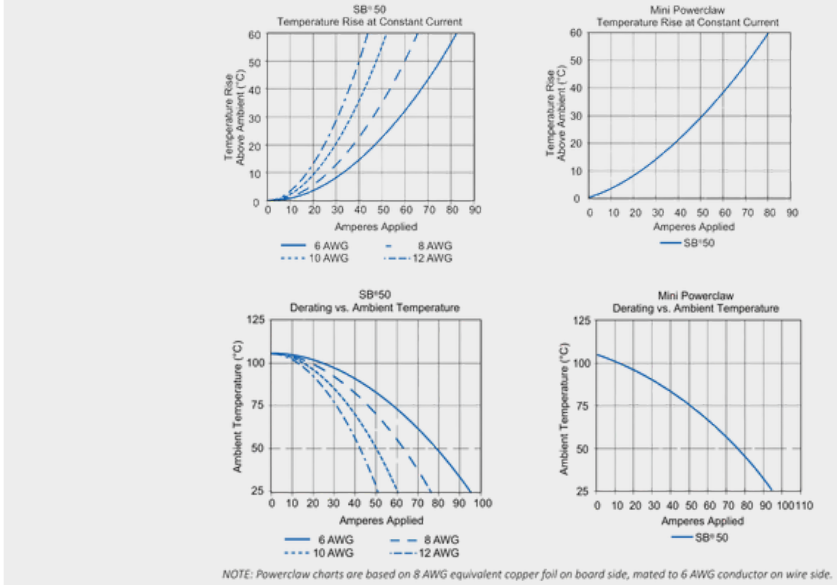
Low Resistance Silver or Tin Plated Copper Contacts *(Allows UL rated currents up to 120 amps)*
UL Rated for Hot Plugging up to 50 Amps *(Great for battery or other applications where the ability to interrupt circuits is required)*
Wire, PCB, and Busbar Contacts *(Allows one connection system to meet multiple needs)*

Product Details

Technical Drawings



SB® 50 Connector Temp. Charts



NOTE: Powerclaw charts are based on 8 AWG equivalent copper foil on board side, mated to 6 AWG conductor on wire side.

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Electrical Details		
Current Rating Amperes [1]	UL 1977	CSA
Wire-to-Wire UL 1977 (6 AWG)	120	50
Wire-to-PCB UL 1977 (6 AWG)	50	
Voltage Rating AC/DC		
UL 1977	600	
PCB Connector Recommended Voltage per IEC 60950-1 Table 2L Pollution Degree 2		
Mini Vert. Contact	522	
Mini Horiz. Contact	504	
Standard Contact	940	
Dielectric Withstanding Voltage		
Volts AC	2,200	
Avg. Mated Contact Resistance Milliohms [1]		
1 1/4" of 6 AWG wire	0.200	
PCB Contact to Wire	0.500	
UL Hot Plug Current Rating Amperes - 250 Cycles at 120V DC		
Wire-to-Wire	50A	
PCB-to-Wire (Vertical Mini Powerclaw)	40A	

Materials	
Housing	
Standard Plastic Resin	Polycarbonate
Chem. Resistant Resin	Polycarbonate / PBT Blend
Contact Retention Spring	Stainless Steel
Housing Flammability Rating	
UL94	V-0
Glow Wire	960°C (GWFI) / 800°C (GWIT)
Contact	
Base	Copper Alloy
Wire Plating	Silver
PCB Plating	Sn or Ag over Ni
Contact Termination Methods	
Crimp [3]	Wire Contacts
Hand Solder	Wire and PCB Contacts
Solder Dip	PCB Contacts
Wave Solder	PCB Contacts
Wrench / Socket	Busbar Contacts

Mechanical Details		
Wire Size Range	AWG	mm²
Wire Contacts with Bushings	16 to 6	1.3 to 13.3
Max. Wire Insulation Diameter	in.	mm
	0.440	11.200
Operating Temperature [2]	°F	°C
Standard	-4° to 221°	-20° to 105°
Chemical Resistant*	-40 to 221°	-40° to 105°
*Chemical resistant material not available for PCB guide housing		
Mating Cycles No Load by Plating	Silver (Ag)	Tin (Sn)
Wire and PCB Contacts	10,000	1,500
Avg. Mating / Unmating Force	Lbf.	N
Wire-to-Wire Low Force Contacts	10	44
Wire-to-Wire High Force Contacts	15	67
Standard Powerclaw-to-Wire	15	66
Mini Powerclaw-to-Wire	8	36
PCB Specifications		
Mounting Style	Plated Through Hole	
Max PCB Thickness- in. (mm)	Standard: 0.15 (0.381) Mini: 0.25 (6.35)	
Recommended Traces	8 AWG Cross Section	
Min. Contact / Spring Retention Force	Lbf.	N
Wire Housing	50	222
Min. Creepage / Clearance Distance	in.	mm
Standard Powerclaw	0.374	9.5
Mini Vert. Powerclaw	0.213	5.4
Mini Horz. Powerclaw	0.205	5.2
Mechanical Shock 4		
MIL-STD-202	213 Condition A	50g's
Vibration High Frequency 4		
MIL-STD-202	204 Condition A	10g's

NOTE 1: See IEC 60664-1 for working voltage.
NOTE 2: Amp ratings are stated per position and based on all positions being fully loaded. 1 - Based on: 105°C rated or better cable of the largest size. Properly calibrated Anderson Power™ recommended tooling, and a 25°C ambient temperature. UL rating not to exceed the maximum operating temperature. CSA rating below a 30°C temperature rise.
2 - Limited by the thermal properties of the connector plastic housing.
3 - Use Anderson Power™ recommended tooling only. Alternate tools may adversely affect the performance of our connectors along with UL and CSA recognition.
4 - Tested with contact part number 5900.
** UL Rated for 65°C largest wire or cable size.*

ALL FIGURES QUOTED ARE APPROXIMATE

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IEC INFORMATION	
ATTRIBUTES	SB® 50
AMP Rating AC/DC	50
Voltage Rating AC/DC (Steady State)	250
Breaking Capacity - AMP Rating / Cycles	50 / 10 Cycles
Voltage Rating (Breaking Capacity)	220 VDC
Finger Safety - Mated Only	IEC 60529 - IP20
Wire Size Tested	16 mm²
Contact Series Tested	5900/1307
Climatic Testing (Cold, Heat & MFG)	IEC 60512 Test -11j, 11i & 11g
Cycle Life	IEC 60512 Test 9a - 5,000 Cycles
Mechanical Strength Impact	IEC 60512-5 @ 29.5 Inches - Dropped 8 times
Temperature Range	-20°C to 105°C -4°F to 221°F
PROTECTION	
Touch Safety with Wire Contacts & PCB Mating Interface	
IEC 60529	IP10 unmated
Environmental Sealing with Boots	
IEC 60529	IP64

Connector Series	Configurations	Creepage / Clearance per IEC 60950-1	Material Group
SB® 50	Unmated	2.99 mm	IIIa
	Mated	2.99 mm	

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