



DIN power male connector - SMC



Soldering instructions

The connectors should be protected when being soldered in a dip, flow or film soldering baths. Otherwise, they might become contaminated as a result of soldering operations or deformed as a result of overheating.

(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus from damaging the connector. About 140 + 5 mm of the tape should suffice.

(2) For large series a jig is recommended. Its protective cover with a fast action mechanical locking device shields the connectors from gas and heat generated by the soldering apparatus. As an additional protection a foil can be used for covering the parts that should not be soldered.

Quantity of solder paste

Before the components are assembled, solder paste must be applied to all the solder pads (for connecting surface-mount components) and the plated through holes.

To ensure that the plated through holes are completely filled, significantly more solder paste must be applied than traditional solder pads on the pcb surface. There are numerous calculation methods available which are complicated to apply. The following rule of thumb has proved valuable in practice:

$$VPaste = 2(VH - VP)$$

in which:

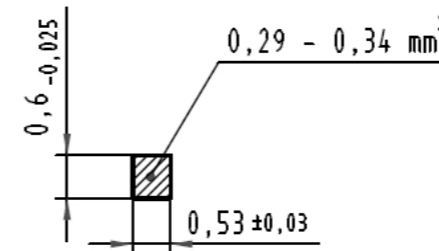
VPaste = Required volume of solder paste

VH = Volume of the plated through hole

VP = Volume of the connector termination in the hole

Comment: the multiplier "2" compensates for solder paste shrinkage during soldering. For this purpose, it was assumed that 50 % of the paste consists of the actual solder, the other 50 % being soldering aids.

Cross section of solder pins



General information

Design	IEC 60603-2	types: F male
No. of contacts	max. 48	
Contact spacing	5,08 mm	
Test voltage	1550V contact/contact	2500V contact/ground
Contact resistance	max. 15mOhm	
Insulation resistance	min. 10 ¹⁰ Ohm	
Working current	max. 6A at 20°C (see derating diagram)	
Temperature range	-55°C ... +125°C	max. 15s at 240°C for reflow soldering
Termination technology	SMC (Surface Mount Compatible) with solder pins	
Clearance	min. 1,6 mm	
Creepage	min. 3,0 mm	
Insertion and withdrawal force	75N	
Mating cycles	- PL1 acc. to IEC 60603-2 =>	500 mating cycles
	- PL2 acc. to IEC 60603-2 =>	400 mating cycles
	- PL3 acc. to IEC 60603-2 =>	50 mating cycles
UL file	E102079	
RoHS - compliant	Yes	
Leadfree	Yes	
Hot plugging	No	

Insulator material

Material	PCT (thermoplastics, glass fiber reinforcement 30%)
Colour	natural-colored, color deviations and speckles permitted
UL classification	UL 94-V0
Material group acc. to IEC 60664-1	II (400 ≤ CTI < 600)
NFF classification	I3, F3

Contact material

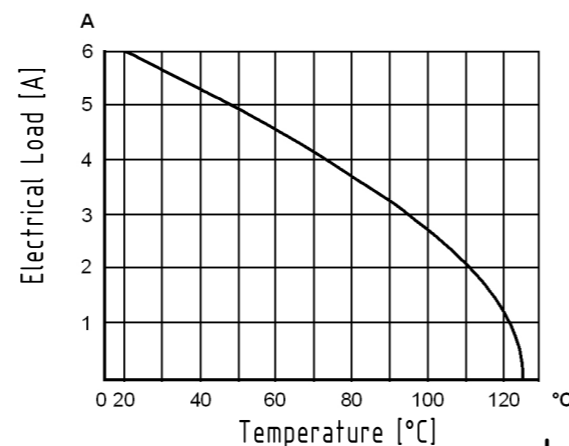
Contact material	Copper alloy
Plating termination zone	Sn over Ni
Plating contact zone	Au over PdNi over Ni

Derating diagram acc. to IEC 60512-5 (Current carrying capacity)

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.

The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-5



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