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NEW FOOTPRINT AND STENCIL DESIGN TO REPLACE ZERO-OHM RESISTOR USAGE AND IMPROVE PRODUCTION EFFICIENCY

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New footprint and stencil design to replace zero-ohm resistor usage and improve production efficiency

Disclosed is a method for use new footprint and different stencil design to reduce zero-ohm resistor usage. In the NPI phase, RD reserve many different sizes zero resistors in the circuit. These resistors can help RD to measure power rail consumption or change the ohm value for signals quality tuning.

The prior solution is to use the short-pad footprint to replace 0-ohm resistor, short-pad is a special footprint for PCB, it can connect different pads by internal trace connection. But if RD needs to measure or tune the ohm value, they must use a knife to cut the short-pad to disconnect each pad. Fig. 1 shows the detail. It is a difficult work for small size component design and have a high failure rate.

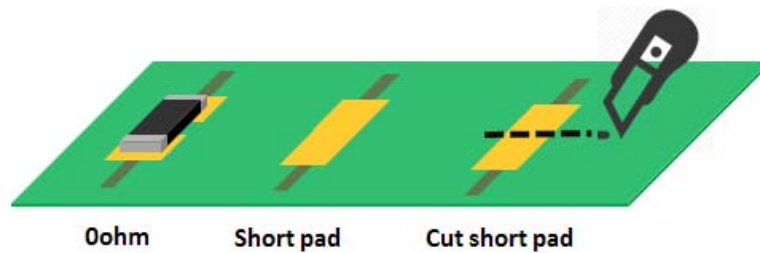


Fig. 1

The disclosed method includes two things cooperation. 1) Resistor footprint -> Modify the footprint pad gap, increase the pad width and let the gap closely. 2) Stencil design -> The stencil needs to adjust the open area to cover different pads. When the PCB SMT, the tin can cover this area, and connect each pad after reflow machine. Use the tin connection to replace the original 0-ohm resistor. Please see the Fig. 2 and Fig. 3

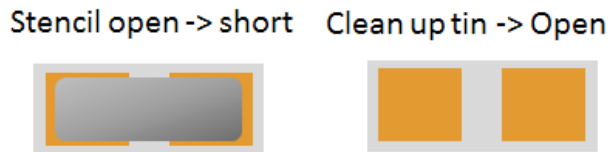


Fig. 2

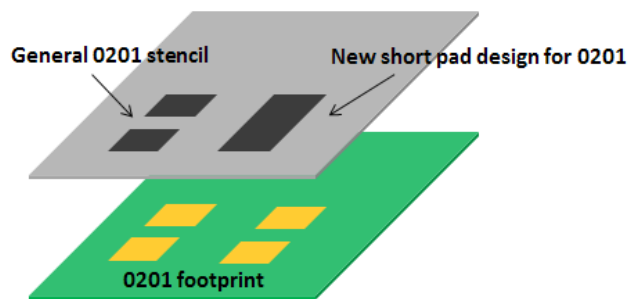


Fig. 3

In conclusion, use a new resistor footprint can reduce 0-ohm resistors quantity, it can improve SMT efficiency. When the project goes to MV, if RD needs to debug, RD doesn't need to use a knife to cut the short-pad. it can down lower the risk for rework.

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