

B-52 CRET

Cleanliness & Residue Evaluation Test Kits



The New Practical Components B-52 CRET (Cleanliness & Residue Evaluation Test) Kit is designed to help determine the ionic cleanliness of a customer's manufacturing process. The test boards and components follow guidelines associated with the IPC-B-52 Test Vehicle.

There are several different ways to measure residues and their effects on electrical performances, the two most common in the industry are ionic cleanliness testing, for determination of ionic residues, and surface insulation resistance (SIR) testing, for the evaluation of electrochemical failures in humid environments.

Of the various methods for determination of ionic residues, the method of choice is ion chromatography, which determines both the type of ionic residue and the amount of the residue. The IPC method for ion chromatography is IPC-TM-650, method 2.3.28. For SIR testing, the most modern test method, involving frequent or continuous monitoring, is IPC-TM-650, method 2.6.3.7. Consequently, a test vehicle was needed which could be used for both ion chromatography and surface insulation resistance testing, but which was more representative of mainstream manufacturing materials and processes. The IPC-B-52 Test Vehicle was the result.

The Practical B-52 CRET test vehicle is divided into four primary segments:

1. The main SIR test board
2. The Ion Chromatography (IC) test coupon
3. The solder mask adhesion coupons
4. The SIR mini-coupons

Additional technical information specifications and guidelines can be found on the Practical Components web site at www.practicalcomponents.com. Practical Components provides the test vehicles, components, Gerber files, and Aegis Circuit Cam files. If the goal of testing is to do an engineering evaluation of the manufacturing process, then stock IPC-B-52 boards can be used, but should be as representative as possible. If the goal of the testing is process *qualification*, per J-STD-001 or IEC 61189-5, then the test vehicles should be procured from the customers existing PCB vendor using the same material set as for manufactured hardware.

Customers should note that Practical will offer both Tin-Lead and Lead-Free versions of the PCB052 B-52 CRET Kit.

B-52 CRET Kit

Figure ID	Location	Part Description	Quantity Per Board
3	U1, U9	A-CABGA256-1.0mm-17mm-ISO	2
6	U2, U8	A-QFP160-28mm-.65mm-ISO	2
7	U3, U10	A-TQFP80-12mm-.5mm-ISO	2
9	U4-U7	A-SO16GT-3.8mm-ISO	4
2	C1-C8, C64-C75	0402SMC-0.01pF	20
8	C9-C23	0603SMC-0.01pF	15
5	C24-C38, C76-C85	0805SMC-0.1pF	25
10	C39-C63	1206SMC-10pF	25
1	J2	Conn-TH-Hor-4x24-AMP	1
11	J1, J3	Conn-TH-Ver-4x24-AMP	2
4	P1	Conn-SMT-2x16-Molex	1

Lead-Free Part Number List

Part Number	Part Description
19959	A-CABGA256-1.0mm-17mm-ISO-SAC305
19960	A-QFP160-28mm-.65mm-2.6mm-ISO-SN
19961	A-TQFP80-12mm-.5mm-2.0mm-ISO-Sn
19962	A-SO16GT-3.8mm-ISO-Sn
20009	0402SMC-0.01pF-Sn
20010	0603SMC-0.01pF-Sn
20011	0805SMC-0.1pF-Sn
20012	1206SMC-10pF-Sn
19942	Conn-TH-Hor-4x24-AMP
19943	Conn-TH-Ver-4x24-AMP
19944	Conn-SMT-2x16-Molex

Tin-Lead Part Number List

Part Number	Part Description
19967	A-CABGA256-1.0mm-17mm-ISO
19968	A-QFP160-28mm-.65mm-2.6mm-ISO
19969	A-TQFP80-12mm-.5mm-2.0mm-ISO
19970	A-SO16GT-3.8mm-ISO
20005	0402SMC-0.01pF
20006	0603SMC-0.01pF
20007	0805SMC-0.1pF
20008	1206SMC-10pF
19942	Conn-TH-Hor-4x24-AMP
19943	Conn-TH-Ver-4x24-AMP
19944	Conn-SMT-2x16-Molex

Note

- Connector J2 has overhang tabs which interfere with the manufacturing rails. In its place, a third vertical connector (J1, J3) can be used.

Board Order Number: PCB052