



American Hakko Products, Inc.

## Certificate of Compliance ESD Safe

All HAKKO products that bear the ESD Safe mark are designed to provide protection against Electrostatic Discharge and Electrical Overstress of components by ensuring that the product is made of static dissipative materials which pass static decay tests as defined by MIL-STD-3010A TM4046, the soldering iron tip maintains a tip to ground resistance of less than 2 Ohms, the electrical potential between tip and ground is no more than 2 mV, and the product includes proper wiring for connection to ground.

Independent third party testing has confirmed that performance of the design of HAKKO products that bear the ESD Safe mark are within the parameters defined by STM 13.1-2000 combined with use in an ANSI/ESD S20.20-2014 Program.

Test Results				
Test Parameter	Limit per STM 13.1-2000	Min	Max	Pass/Fail
Tip-to-Ground Resistance (Hot)	<2 $\Omega$	0.510	0.737	PASS
Tip-to-Ground Resistance (Cold)		0.350	0.564	PASS
Tip Leak Voltage (Hot)	<20 mV RMS	0.001	1.000	PASS
Tip Leak Voltage (Cold)		0.000	0.000	PASS
Tip Leak Current (Hot)	<10 mA AC	0.010	0.010	PASS
Tip Leak Current (Cold)		0.000	0.000	PASS

Note: Both IPC J-STD-001F and older MIL-STD-2000 define a limit for Tip-to-Ground Resistance as under 5 ohms. MIL-STD-2000 defines a limit for Tip Leak Voltage as under 2 mV RMS. IPC J-STD-001F defines a limit for Transient Tip Voltage as under 2 V Peak but does not define any limit for Tip Leak Current other than reference that AC and DC current leaks to ground shall not create deleterious effects on the equipment and/or components. Where the HAKKO product does not come into contact with the component, tip-to-ground potential does not apply.

To ensure full effectiveness of HAKKO product design to protect against ESD/EOS, it is important that proper grounding is maintained.

Should you require any further information regarding this Certificate of Compliance, please contact us at the following address:

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