



VMR-3A

Conductor Resistance Evaluation System - High Current

ADVANCED
SERIES

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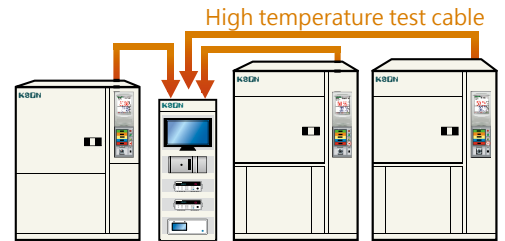
King Son VMR-3A Conductor Resistance Evaluation System- High Current

Electric vehicles are the trend of future technology. Car manufacturers and parts, components suppliers are also investing in research and development and production to meet the speed and horsepower driven by consumers.

The power supply system and parts, components used for electric vehicle running consume high voltage and high current, the used voltage is as high as more than 400 voltages, and the used current will be also higher above 1.5 ampere.

The longer time test method required by traditional vehicle regulations can no longer meet the test requirements for electric vehicles.

Increase the test stress can shorten the test time that King Son VMR-3A Conductor Resistance Evaluation System – High Current provide maximum 3 ampere measurement current to meet and exceed the test regulation requirements of next generation electric vehicle.



▲ Semiconductor advanced packaging ▲ and testing integration case



Laboratory class

High-speed multi-channel high-current scanning measurement, 36 seconds /per 240-channel, beyond the international standard.



Can conduct temperature cycling and thermal shock and fixed-point temperature measurement test

The novel King Son VMR series (VMR-S, VMR-F, VMR-3A) evaluation system can conduct the customization design integration test either with King Son made or 3rd party brand Temperature Cycling Test Chamber, Thermal Shock Test Chamber, HAST+ Highly Accelerated Stress Test Chamber, Constant Temperature and Humidity Test Chamber or Agree Test Chamber.

The VMR series (VMR-S, VMR-F, VMR-3A) evaluation system in each interaction test maximum can integrate with up to 8 test chambers.



Can setup the failure upper limit, lower limit of the resistance value and failure rate of change

The limit value comparison point can be specified according to the specification or the characteristics of the product to be tested.



During the test process, the running temperature and humidity of the environmental test chamber and the measurement values are simultaneously combined to record and analyze

In the same window, the operator can directly watch the recording curve of thermal shock or temperature cycling and resistance value.

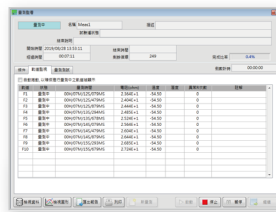


Operation interface language

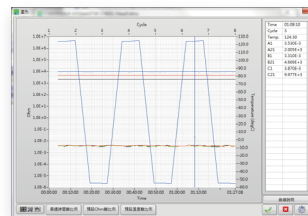
Traditional Chinese, Simplified Chinese, English.



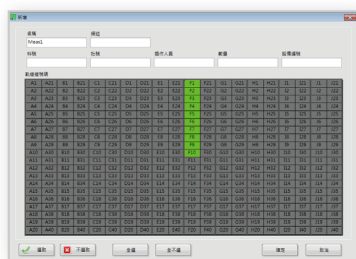
▲ VMR main screen



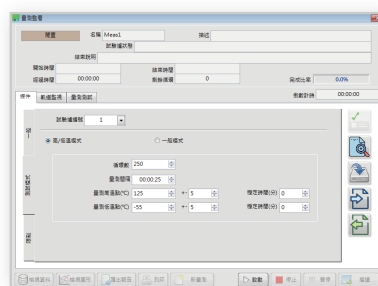
▲ Monitor the measurement channel



▲ Display the curve of measurement channel



▲ Measure and export the data of selection channel with numbering



▲ Setup the measurement conditions

Measurement Name	Result
1 Measurement Name	Next
2 Description	A1 J40
3 Start Time	2018/9/28 上午 01:55:04
4 End Time	2018/9/28 下午 02:22:34
5 Elapsed Time	129/28M/31S
6 Remaning Cycle	975
7 Completion Ratio	3.3%
8 Measuring Status	Measuring
9	
10 Information	123
11 Test No	001
12	4
13	1000
14	01
15	
16	1000
17	0.94C
18	125
19	5
20	5
21	5
22	5
23	5
24	5
25	5
26	5
27	10000.000
28	10000.000
29	0.001
30	10000.000
31	0.001
32	10000.000
33	0.001
34	10000.000



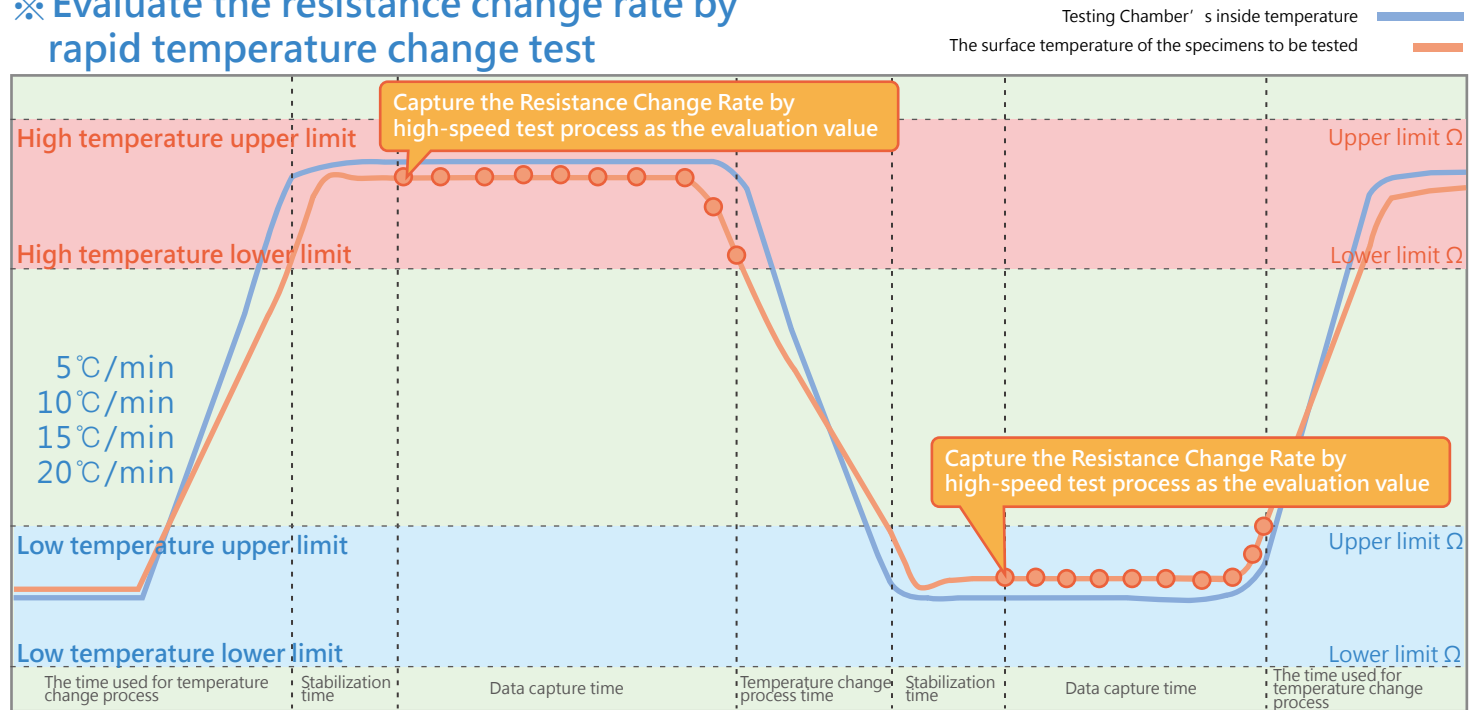
Conversion to Excel report

▲ Export EXCEL format file

The method used to evaluate the resistance change rate is by thermal shock test and rapid temperature change test

The Resistance Change Rate (%) is based on the specified cycle resistance value as a reference index, set the high temperature Resistance Change Rate and low temperature Resistance Change rate respectively, and make the remark when the change rate limit is exceeded.

※ Evaluate the resistance change rate by rapid temperature change test



※ A set of temperature cycling chambers, when integrated with one of King Son VMR series (VMR-S, VMR-F, VMR-3A) Conductor Resistance Evaluation System that can perform different temperature change test conditions.

20°C/min	20°C/min	IPC - 9701、GS-12-120
	15°C/min	IEC 60749-25、JEDEC JESD22-A104-D、IEC60068-2-14
	10°C/min	JEDEC JESD22-A104B-J、GR-1221-CORE、CR200315、JEDEC JESD22-A104-A-Condition 1、GR-468、IEC60068-2-14
	7°C/min	GM3172
	6.25°C/min	JEDEC22-A105-B
	5.5°C/min	JESD22-A105-B
	5°C/min	JESD22-A105-B、IEC60068-2-4、IEC61747-5、EIAJ ED-2531-A、GJB1032、MIL-2164
	4°C/min	SAE-J1211
	3°C/min	IEC60068-2-14、IEC61747-5
3°C/min		

King Son VMR-3A Conductor Resistance Evaluation System Testing Standards:

Testing Standard		Exposure temperature °C (Ramp range °C)		Ramp rate	Exposure time (Dell time) (min.)	Cycle or number of times
		High temperature	Low Temperature			
IEC 60749-25 (JESD22-A104-D)	G	+125 +15 0	-40 +0 -10	15°C/min (Included the specimens to be tested)	15min	Not specified
	I	+115 +15 0	-40 +0 -10			
	J	+100 +15 0	0 +0 -10			
	K	+125 +15 0	0 +0 -10			
	L	+110 +15 0	-55 +0 -10			
	N	+80 +15 0	-30 +0 -10			
	O	+125 +15 0	-25 +0 -10			
IEC-60068-2-14 NB (JIS C 0025 NB)		+125 ±2	-55 ±3	3 ± 0.6°C/min 5 ± 1.0°C/min 10 ± 2.0°C/min 15 ± 3.0°C/min (AVG) (The average value by Maximum 5 minutes)	3h 2h 1h 30min	minimum 2 cycle
IEC-61747-5 (EIAJ ED-2531A)		+125 ±2	-50 ±3	3 ± 0.6°C/min 5 ± 1.0°C/min (AVG) (The average value by Maximum 5 minutes)	3h 2h 1h 30min	minimum 2 cycle
		+100 ±2	-45 ±3			
		+85 ±2	-40 ±3			
		+70 ±2	-35 ±3			
		+70 ±2	-30 ±3			
		+125 ±2	-25 ±3			
		+100 ±2	-20 ±3			
		+85 ±2	-15 ±3			
		+85 ±2	-10 ±3			
		+70 ±2	-5 ±3			
		+70 ±2	0 ±3			
JESD22-A105-B	A	+ 85 +10 0	-40 + 0 -10	6.25°C/min	15min	1000
	B	+125 +15 0	-40 + 0 -10	5.5°C/min		
IPC-9701	TC1	+125	0	≤ 20 °C/min (Included the specimens to be tested)	15min	200.500.1000 3000.6000 cycle
	TC2	+125	-25			
	TC3	+125	-40			
	TC4	+125	-55			
	TC5	+125	-55			
SAE-J1211		+85~+150	-40	4~6°C/min	4h/Low temperature	

King Son VMR-3A Conductor Resistance Evaluation System- High Current Specification:

Model no.:	King Son VMR-3A Conductor Resistance Evaluation System- High Current
Resistance measurement range	1*10 ⁻³ ~ 1*10 ² Ω
Resistance measurement range	1uΩ
(Maximum)Measurement current	3A
Measuring speed	36sec/per 240ch
The standard configuration of the number of channel for measurement / maximum number of channels for measurement	Standard configuration 24 channels/ Max. 240 channels per rack
Measurement loading method	DC current measurement
Test equipment	Keysight Technologies
High temperature testing cable	+200.0°C / 3 Meter
Operation system	Win 7 / Win 10 Pro (64bits)
Communication interface	RJ-45
Switching components	Relay (option : Reed Relay / MOSFET)
Application Industry	Automotive electronics parts

Model Coding

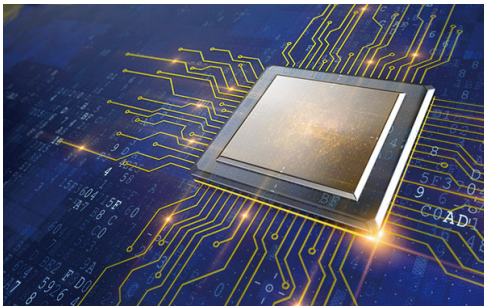
VMR-3A - 240 - D

Channel DC
24 (Direct current)
48
72
96
120
144
168
192
216
240

Integration test

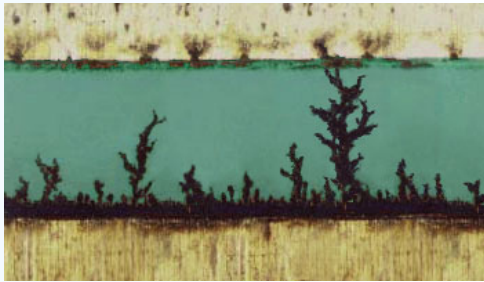
King Son TSC Thermal Stress Complex Test Chamber + King Son VMR-S Conductor Resistance Evaluation System – Standard

King Son TSC + VMR-S integration test is designed to conduct high-speed measurement, recording, and data analysis for various electronic parts, components, materials, and its soldering joints tests.



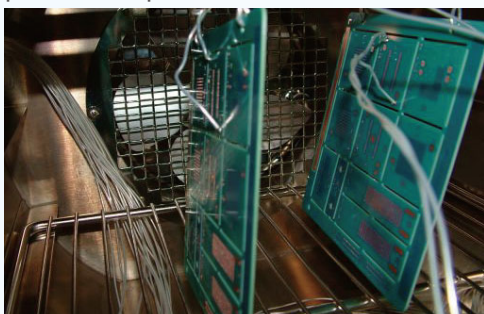
King Son THS Programmable Constant Temperature and Humidity Test Chamber + King Son SIR Surface Insulation Resistance Measurement System

King Son THS + SIR integration test is designed to conduct high-temperature and high-humidity 85°C/85% RH for product life aging test, the product under THS + SIR test becomes brittle, and its characteristics decline.



King Son HAST+ Highly Accelerated Stress Test Chamber + King Son SIR Surface Insulation Resistance Measurement System

King Son HAST+ and SIR integration test is designed to provide high humidity 85% R.H, increase the test temperature and pressure to accelerate the aging test of automotive electronics parts, components, materials and shorten the test time of life test.



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ISO 9001 : 2015

Quality Management Systems
King Son Instrument Tech. Co., Ltd.
has established and applies
a Quality Management System for
Development, Production and Distribution of Temperature & Humidity Chamber, Walk-In Chamber,
Thermal Shock Tester, Oxidation-Free Oven, HAST (Highly Accelerated Stress Tester), High Pressure
Accelerating Life Tester and Convertible IFP (Initial Freezing Point) Food-Tech Chamber.



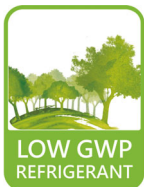
*Certification Body of TÜV SÜD Asia Ltd. Taiwan Branch Management Service Department

ISO 14001 : 2015

Environmental management systems
King Son Instrument Tech. Co., Ltd.
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Accelerating Life Tester and Convertible IFP (Initial Freezing Point) Food-Tech Chamber.



*The Certification Body of TÜV SÜD Asia Pacific TÜV SÜD Group



*R448A refrigerant,
an excellent replacement for R404A



KSON[®]
RELIABILITY

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