

IGBT Module Dynamic Tester Product Fact Sheet

DYN-PA-19012-V1



Power Assemblies

1 General

1.1 Dynamic tests performed	<ul style="list-style-type: none"> Reverse biased safe operating area (RBSOA), Short-circuit safe operating area (SCSOA), Turn-on intervals ($t_{d(on)}$, t_r, t_{on}) and turn-on energy (E_{on}), Turn-off intervals ($t_{d(off)}$, t_f, t_{off}, t_z) and turn-off energy (E_{off}), Diode reverse recovery characteristics (Q_{rr}, I_{rr}, E_{rec}), Gate charge (Q_g), (Optional).
1.2 DUT capacity and compatibility	Customised Bed-of-Nails design to accommodate wide range of power modules. 2 DUT are placed on a heatplate per test to measure device characteristics.
1.3 Maximum test temperature	175°C
1.4 Temperature uniformity	± 2°C
1.5 Data logging	The test conditions and results are recorded to an industrial PC and can be exported via a USB storage device in a CSV file format. Results can be backed up to an external hard drive.
1.6 Batch reporting	Batch reports can be generated to summarise test results and pass rates for a given batch of DUTs.

2 Electrical

2.1 Power input	220 Vac, 16 Arms, 1 ph + E, 50/60 Hz	
2.2 Maximum test current	RBSOA - up to 6 kA SCSOA - up to 10kA	
2.3 Maximum test voltage	Up to 7 kV	
2.4 Tester accuracy	Test measurements (via oscilloscope): HVDC PSU output voltage: Gate drive output voltage: Target test current (I_c):	±1% V_{CE} , V_{GE} , I_c , I_D , I_G (optional) ±1% ±3% ±3%
2.5 Test circuit stray inductance	< 50 nH	
2.6 Load inductance range	1 µH up to 1264 µH	
2.7 DC capacitance range	20 µF up to 3554 µF	
2.8 Oscilloscope key parameters	Number of channels: Bandwidth: Resolution: Sampling rate: Memory:	4 up to 200 Mhz up to 14-bit up to 1 GS/s up to 512 MS

3	Mechanical	
3.1	Dimensions (W x D x H)	1600 x 800 x 2100 mm
3.2	Weight	Approx. 650 kg
3.3	Pressurised air supply	65 psi

4	Operating Conditions	
4.1	Operating location	Indoor use only
4.2	Earthing requirement	Class I Equipment with Earthed Conductor
4.3	Operational temperature	25°C ± 10°C
4.4	Storage temperature	25°C ± 35°C
4.5	Relative humidity	10% to 80%
4.6	Over voltage category	CAT II (laboratory)
4.7	Pollution grade	2 (non-conductive pollution)

5	Safety Features	
5.1	Smoke alarm	Local smoke alarm is fitted to shut down the test equipment in the event of any fumes generated by heat.
5.2	Safety Interlocks	Safety interlocks are fitted to the doors and side panels. High voltage supply and capacitor banks discharged when doors or panels are opened.
5.3	Over-temperature protection	An alarm or trip will be made in the event of the DUT heatplate exceeding a set temperature.
5.4	E-stop push button	E-stop button is fitted to stop the high voltage supply and discharge the capacitors in the case of an emergency.
5.5	Visible operation indicators	Visible operation indicators are activated during test as a warning aid.

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