IGBT Module Power Cycling Tester Product Fact Sheet

DYN-PA-19016-V1

Power Assemblies

1	General		
1.1	Test positions per DUT cubicle	Up to 3 DUTs connected in series	
1.2	Compatible DUT types	Dynex E, N types and others that use same mounting foot print. Heatsink can be customised to accommodate other DUT types.	
1.3	Temperature monitoring	The temperature of the baseplate can be monitored and shown on the computer in real-time.	
1.4	Cooling method	Main test cubicle is cooled by the chiller. The chiller is cooled by external water. The minimum required flow rate is 10 L/min and water temperature between 17 – 22 ˚C.	
1.5	Data logging	National Instruments industrial PC with Data Acquisition. Recorded values; $V_{CE\text{-}low}$, $V_{CE\text{-}high}$, T_{on}, T_{off}, I_{CE}, T_{Cmax}, T_{Cmin} T_{jmax}, T_{jmin}, R_{th} variation and V_{GE}.	
1.6	Junction temperature calibration	Junction temperature is measured indirectly from its Vce voltage at a 100 mA calibration current. The V_{CE} relationship with temperature is measured via an additional static V_{CE} calibration unit.	
2	Electrical		
2.1	Power input	380 Vac, 64 Arms, 3ph + NE, 50/60Hz	
2.2	Maximum test current	3600 Adc	
2.3	Maximum test voltage	10 V	
2.4	Chiller power consumption	9 kW	
2.5	Measurement accuracy	V_{CE} : I_{CE} : V_{GE} : T_C :	±1% ±1% ±1% ±2°C
3	Mechanical		
3.1	Dimensions (W x D x H)	Main Cabinet: Water Chiller:	600 x 900 x 1800 mm 510 x 775 x 850 mm
3.2	Weight	Main Cabinet: Water Chiller:	400 kg 125 kg
3.3	Coolant type	Water / Glycol Mix	
3.4	Standard cooling water pipe fitting	1/" BSPPF + 3/4" BSPTM	
3.5	Minimum cooling water flow rate	10 L/min	
3.6	Audible noise level	< 85 dBa	

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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 cubicle door and side panels. The main power circuit is disabled if interlocks are opened.
5.3	Over-temperature protection	Over temperature switches are fitted to the DUT heatsink to disable the main power circuit when a set temperature is exceeded. Over temperature switches are also fitted to the chiller to stop the test when the recirculation water temperature is too high.
5.4	Flow rate detection (optional)	The internal coolant water flow rate is monitored to ensure enough cooling is provided.
5.5	DUT protection	The test is terminated when certain fail criteria is met, to protect the DUT from further damage.
5.6	E-stop push button	E-stop button is fitted to stop the mains power supply in case of an emergency.
5.7	Visible operation indicators	Visible operation indicators are activated during test as a warning aid.

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