

Test Specifications

SCIENTIFIC TEST INC. 5300S/5300HS TEST SPECIFICATIONS						
TEST		SPECIFICATION				
PARAMETER	V RANGE	I RANGE	MAX RES.	ACCURACY		
LEAKAGE	$I_R, I_{CBO}, I_{CEO/R/S/X}, I_{DSSX}, I_{DOFF}, I_{DRM}, I_{RRM}$	.10V to 999V (2000V) ¹	100NA (20PA) ² to 50MA	1 NA (1PA) ²	1% + 10NA + 20PA/V (1% + 200PA + 2PA/V) ²	
	$I_{EBO}, I_{GSSF}, I_{GSSR}, I_{GSS}, I_{GKO}, I_R$ (OPTO)	.10V to 20V (80V) ³	100NA (20PA) ² to 3A	1 NA (1PA) ²	1% + 10NA + 20PA/V (1% + 200PA + 2PA/V) ²	
BREAKDOWN	BV_{CEO}, BV_{CES} (IGBT) (300 μ S Pulse above 10mA)	.10V to 450V (900V) ¹ to 700V (1400V) ¹ to 800V (1600V) ¹	100 μ A to 200MA to 100MA to 50MA	1 MV	1% + 100MV	
	$BV_{DSS}, V_D, BV_{CBO}, V_{DRM}, V_{RRM}, V_{BB}$	.10V to 999V (2000V) ¹	100NA to 50MA	1 MV	1% + 100MV	
	BV_R, BV_Z	.10V to 5.000V to 9.999V to 50.00V to 700V (1400V) ¹ to 999V (2000V) ¹ BVZ Soak- 50V (100V) 0 to 50ms to 99secs	10 μ A to 49.9A (500A) to 25A (250A) to 3A to 100MA to 50MA to 400mA to 80mA	1 MV	0.4% + 2 LSB	
	$BV_{EBO}, BV_{GSS}, BV_{GKO}$	.10V to 20V (80V) ³	100NA to 3A	1 MV	1% + 10MV	
VCESUS	$V_{CEOSUS}, V_{CERSUS}, V_{CEVSUS}$	V_{CE} : to 1500V Inductive Kickback, 35mH choke	I_C : to 4A	0.5V	2% + 0.5V	
IMPEDANCE	ZZ (1 KHZ) 0.1 Ω to 20 K Ω	0.1V to 200V DC (measure 50 μ V to 300mV rms)	100 μ A to 300mA DC	0.001 Ω 1 μ V	1% + 1% Range	
GAIN	h_{FE} (1 to 99,999) CTR (.01 to 99,999)	V_{CE} : .10V to 5.00V ⁵ to 9.99V to 49.9V	I_E : 10 μ A to 49.9A (500A) ⁴ derate to 25A (250A) ⁴ derate to 3A I_F, I_B : 100NA to 10A	.01 h_{FE} .0001 CTR	V_{CE} : 1% + 10MV I_C : 1% + 100NA I_F, I_B : 1% + 5NA	
ON STATE	$V_{CESAT}, V_{BESAT}, V_{BEON}, V_F, V_T, V_{DSON}, I_{DON}, V_{GSON}, V_{GEON}, V_F$ (Opto-Diode)	V_{CE}, V_D, V_F, V_T : .10V to 5.00V to 9.99V $V_{GS}, V_{GE}, V_{BE}, V_F$: .10V to 9.99V	I_E, V_T, I_F, I_D : 10 μ A to 49.9A (500A) ⁴ derate to 25A (250A) ⁴ I_B, I_F, I_{GT} : 100NA to 10A (40A)	1MV	V : 1% + 10MV I_E, I_F, I_D, I_T : 1% + 100NA I_B, I_{GT} : 1% + 5NA	
	V_{Gsth}, V_{Geth}	.10V to 49.9V	I_D : 100 μ A to 3A	1MV	1% + 10MV	
	V_O (Regulator)	V_O : .10V to 20V (50V) ³ V_{IN} : .10V to 49.9V Load: Resistive or Electronic	I_D : 1MA to 5A	1MV	1% + 10MV	
	I_{IN} (Regulator)	V_{IN} : .10V to 20V (80V) ³ Load: R_{GK} , 1K, 10K, EXT, OPEN, SHORT	I_{IN} : 1MA to 3A	10NA	1% + 5NA	
	V_C	.10V to 49.9V (99.9V) ⁵	10mA to 10A	1mV	1% + 10mV	
OFF	V_{GSOFF}	V_O : .10V to 20V (80V) ³	I_D : 100NA (20PA) ² to 3A V_{DS} : .10V to 50V	1MV	1% + 10MV	
TRIGGER	I_{GT}, V_{GT}	V_D : 5V to 49.9V V_{GT} : .10V to 20V (80V) ³ .10V to 50V	I_{AK} : to 3A I_{GT} : 100NA to 3A R_L : 12, 30, 100 Ω , EXT	10NA 1mV .10V	1% + 5NA 1% + 10mV 1% + .10V	
	V_{OPER} (Relay)					
HOLD	I_H	V_D : 5V to 49.9V .10V to 50V	I_H : 1.5A I_{GT} : 100NA to 3A R_L : 12, 30, 100 Ω , EXT (Initial I_{AK} set by R_L)	1 μ A .10V	1% + 2 μ A 1% + .10V	
	$V_{RELEASE}$ (Relay)					
LATCH	I_L (Tested indirectly, no exact value)	V_D : 5V to 49.9V	I_L : 100 μ A to 3A I_{GT} : 100NA to 3A R_L : 12, 30, 100 Ω , EXT	N/A	N/A	
BREAKOVER	V_{BO}, I_{BO} (SSOVP)	0.10 to 400V ¹	10mA to 900mA	1mV	1% + 100mV	
	V_{BO}, I_{BO} (STS, DIAC)	0.10 to 20V (80V) ³	1 μ A to 200 μ A		1% + 10mV	
	V_{BO}, I_{BO} (SIDAC)	0.10 to 400V ¹	1 μ A to 1mA		1% + 100mV	
	V_S, I_S (SBS, STS)	0.10 to 20V (80V) ³	1 μ A to 200 μ A			

Accuracy specifications are in addition to ± 1 digit in readout.

Gated Device Test Specifications

SCIENTIFIC TEST INC. 5300S/5300HS TEST SPECIFICATIONS GATED DEVICES					
TEST		SPECIFICATION			
PARAMETER	V RANGE	I RANGE	MAX RES.	ACCURACY	
LEAKAGE	$I_G, I_{GKS}, I_{GAS}, I_D, I_R$	.10V to 600V	100NA (20PA) ² to 200MA	NA (1PA) ²	1% + 10NA + 20PA/V (1% + 200PA + 2PA/V) ²
ON STATE	V_F, V_T	.10V to 5.00V to 9.99V	10 μ A to 49.9A derate to 25A	1MV	V: 1% + 10MV
TRIGGER	I_{GT} V_{GT}	V_{GG} : .10V to 600V V_{GT} : .10V to 20V (80V) ³	1.0 μ A to 3A R _L : 12, 30, 100 Ω , EXT @ $V_{GA} < 50V, R_L=100 \Omega$	10NA 1mV	1% + 5NA 1% + 10mV
HOLD	I_H	V_{GA}, V_{GK} : .10V to 600V	1MA to 999MA I_{BO} : 10MA to 900MA	.01MA	1% + .05MA
BREAKOVER	I_{BO}	0.10 to 600V to 400V	V_{BO} : 10mA to 600mA to 900MA	1mV	2% + .05MA
	V_{BO}	0.10 to 600V to 400V	I_{BO} : 10MA to 600MA to 900MA		1% + 100mV

Accuracy specifications are in addition to ± 1 digit in readout.

- 1 2000V Hi Voltage (Anode/Collector) Option
- 2 Lo Current Deck Option – Also adds programmable soak time from 1 mS to 99 secs. for currents under 1 μ A.
- 3 80V Lo Source (Gate/Base) Option
- 4 500 Amp Hi Current Deck Option.
- 5 Voltage @ front panel terminals; allow for drop in cables.
- 6 Optional 100V Hi Source
- 7 40A Lo Source option

Weight and Dimensions

Model	Dimensions (mm)	Weight (kg)	Power
MODEL 5000 SERIES Tester Mainframe	17"(432)x20"(508)x10.5"(267)	55lbs(25)	120/240VAC(+5%, -15%) 50/60Hz, Fused 2A/1A
MODEL LC-1000 Lo Current Deck	16.5"(419)x10.5"(267)x8"(203)	11lbs(5)	Powered from 5000 Series Tester
MODEL HC-500 Hi Current Deck	17"(432)x20"(508)x10.5"(267)	35lbs(15.9)	Powered from 5000 Series Tester
MODEL 6010 Scanner	17"(432)x20"(508)x10.5"(267)	40lbs(18.2)	Powered from 5000 Series Tester