

TOS5101

Hipot Tester

Basic model series with excellent cost performance



TOS5101(ACW/DCW)

**High-end model of TOS series having AC, DC10kV output
Conforming to demands of various component standards
testing and margin test**

TOS5101 is designed exclusively for withstand voltage testing of electronic equipment and components conforming to various safety standards. The use of a high luminance, large fluorescent display tube for the display enables data including measured values, status and judgment results to be extremely legible. The PASS/FAIL function employs a window comparator method that enables TOS5101 to make fail judgment of current leakage over the upper reference value and below the lower reference value which can be set on the front panel.

Thus, highly reliable testing can be performed including that for test lead disconnection and defective contact. In addition, in order to prevent erroneous operation and accidents, the TOS5101 is also equipped with a Key Lock function and Interlock function, a high-voltage output terminal having a narrowed insertion port, a large DANGER lamp, and an automatic discharge function (during DC operation) that removes charge from the test piece. These features give the TOS5101 a high degree of safety and reliability.

**In general, when the capacitance of DUT has a voltage dependence (such as a “High-dielectric constant ceramic capacitor”), please take a caution that the waveform distortion may occurs.*

- Complies with various safety standards
- AC / DC output (0 to 10 kV)
- Large color display
- Digital voltmeter and ammeter
- Digital timer
- Window comparator type employed for PASS / FAIL judgement.
- Equipped with remote control function
- Various signal outputs
- Automatic discharge function (during DC operation)
- Provided with zero turn-on switch
- Compact size

TOS5101

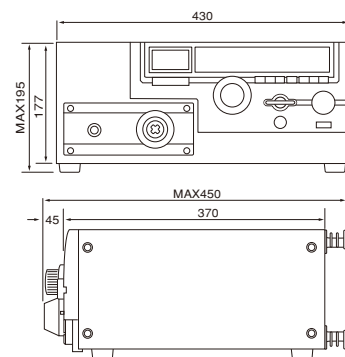
Hipot Tester

Output block		
Applied Voltage	0 to 5/ 0 to 10 kV AC and DC	
AC		
Maximum Rated *1	500VA / 10 kV, 50 mA	
Waveform	Commercial line waveform	
Voltage Regulation	Max. 15% (for max. rated load to no load)	
Switching	Use of a zero turn-on switch	
DC		
Applied Voltage	50W / 10 kV, 5 mA	
Ripple	100 Vp-p typ. at 10 kV, no load 200 Vp-p typ. at max. rated output	
Maximum Rated *1	Max. 3% (for max. rated load to no load)	
Output Voltmeters		
Analog	Scale	10 kV full scale , AC/DC
	Class	JIS Class 2.5
	Accuracy	±5% of full scale
	AC Indication	Mean value response / rms value scale
Digital	Full Scale	5 kV/ 10 kV full scale
	Accuracy	±1.5% of full scale
	AC Response	Mean value response / rms value display
Ammeter		
Digital	Accuracy	±(5% + 20μA) of upper cutoff current
	AC Response	Mean value response / rms value display
Pass/fail Judgement Function		
Type of Judgement	Window comparator type ● FAIL judgement *When current detected above upper cutoff current *When current detected below lower cutoff current (FAIL signal generated when FAIL judgement made) ● PASS judgement *When set time has elapsed and no abnormality is detected	
Upper cutoff current setting range	AC: 0.1 to 55 mA DC: 0.1 to 5.5 mA	
Lower cutoff current setting range	AC: 0.1 to 55 mA DC: 0.1 to 5.5 mA	
Judgement Accuracy	±(5% of upper cutoff current + 20μA)	
Current Detection	Integration of current absolute value followed by comparison with reference value.	
Calibration	With rms value of sine wave using a pure resistance load.	
No-load output voltage required for detection	Approx. 970 V when set to 50 mA AC Approx. 160 V when set to 5 mA DC	
Test Time Setting Range	0.5 to 999 sec (±10 ms) (timer-off function provided)	
Accuracy	±20 ms	
Line Voltage	100V±10%, 50/60 Hz (Nominal voltages of 110V, 120V, 220V, 230V and 240V available as factory options.)	
Power Requirements		
for line voltage of 100 V	Max. 50 VA under no-load conditions / Approx. 600 VA at rated load	
for line voltage of 100 V to 200 V	Max. 50 VA under no-load conditions / Approx. 600 VA at rated load	
for line voltage of 220 V to 240 V	Max. 50 VA under no-load conditions / Approx. 610 VA at rated load	
Electromagnetic compatibility (EMC) *3	Conforms to the requirements of the following directive and standard.*2 EMC Directive 2004/108/EC EN 61326-1 EN 61000-3-2 EN 61000-3-3 Under following conditions 1. Used HV test leadwires which is supplied. 2. No discharge in testing. 3. Used the shielded cable which length is less than three meters when the SIGNAL I/O is used.	

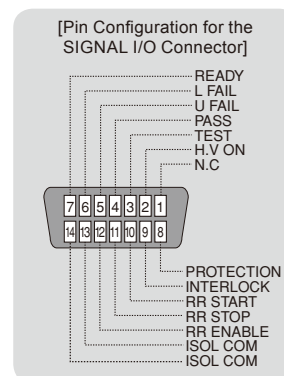
Safety *3	Conforms to the requirements of the following directive and standard.*2,*4 Low Voltage Directive 2006/95/EC EN 61010-1 Pollution degree 2 UL1244(The UL-approved products with input voltage of 120VAC satisfy the UL1244 standard.)	
Insulation resistance	30 MΩ or more (500 V DC)	
Hipot	1390 VAC, 2 seconds [between the AC LINE and chassis]	
	1200 VAC, 1 second [UL-approved products only]	
Environment	Specification range : 5 °C to 35°C / 20 %rh to 80 %rh	
	Operable range : 0 °C to 40°C / 20 %rh to 80 %rh	
	Storage range : -20 °C to 70 °C / 80 %rh or less	
Dimensions (maximum)	430[16.9 inch] W × 177[6.97 inch] (195[7.68 inch]) H × 370[14.6 inch] (450[17.7 inch]) D mm	
Weight		
for line voltage of 100 V	Approx. 21 kg (Approx. 46.30 lbs)	
for line voltage of 100 V to 120 V	Approx. 23 kg (Approx. 50.70 lbs)	
for line voltage of 220 V to 240 V	Approx. 24 kg (Approx. 52.91 lbs)	
Accessories		
High-voltage test lead	TL01-TOS (max.allowablevoltage: 5 kV /1.5m) TL03-TOS (max.allowablevoltage: 10 kV /1.5m)	
Others	14-pin amphenol plug (assembled)	

- *1: Continuous output time may be limited depending on current high limit reference value and ambient temperature.
*2: Only on models that have CE marking on the panel. Not applicable to custom order models.
*3: Not applicable to custom order models.
*4: This instrument is a Class I equipment. Be sure to ground the protective conductor terminal of the instrument. The safety of the instrument is not guaranteed unless the instrument is grounded properly.

— External dimensional diagrams —



Unit: mm



Test Lead

■ TL01-TOS

[cable length: 1.5 m/max. operating voltage: 5 kV]



■ TL02-TOS

[cable length: 3 m/max. operating voltage: 5 kV]



■ TL03-TOS

[cable length: 1.5 m/max. operating voltage: 10 kV]



■ TL04-TOS

[cable length: 1.5 m/max. operating voltage: 5 kV
(for TOS1200, RL01-TOS)]



■ TL05-TOS

[cable length: 1.5 m/max. operating voltage: 5 kV
(for 149-10A, RL01-TOS)]



■ TL06-TOS

[cable length: 0.5 m/max. operating voltage: 5 kV
(for parallel connection of TOS9220/9221)]



■ TL07-TOS

[cable length: 1.5 m/max. operating voltage: 5 kV
(for TOS9220/9221)]



■ TL08-TOS

[cable length: 1.5 m/max. operating voltage: 1 kV
(for TOS7200)]



■ TL11-TOS

[cable length: 1.5 m/max. operating current: 30 A
(for TOS6200A)]



■ TL12-TOS

[cable length: 1.5 m/max. operating current: 60 A
(for TOS6210)]



■ TL13-TOS

[cable length: 1.6 m/max. operating current: 40 A
(for TOS9302, 9303, 9303LC)]



■ TL21-TOS

[cable length: 1.5 m (for TOS3200)]



■ TL22-TOS

[cable length: 1.7 m/max. rated voltage: 1000 V
/max. rated current: 10 A (for TOS9303LC)]



■ TL31-TOS

[cable length: 1.5 m/max. operating voltage: 5 kV
(for TOS5300 Series)]



■ TL32-TOS

[cable length: 3 m/max. operating voltage: 5 kV
(for TOS5300 Series)]



■ TL33-TOS

[cable length: 0.5 m/max. operating voltage: 5 kV
(for TOS9320)]



■ TL51-TOS

[cable length: 1.5 m (for TOS7210S)]



■ HTL-2.5DH

[cable length: 1.5 m/max. operating voltage: 10 kV
(for 149-10A)]



Test Probe

■ HP01A-TOS*

[cable length: 1.8 m/max. operating voltage: 4 kV
AC(RMS), 5kV DC]

■ HP02A-TOS*

[cable length: 3.5 m/max. operating voltage: 4 kV
AC(RMS), 5kV DC]

* The optional Adaptor DD-5P/9P is required for the connection.



■ HP11-TOS

[cable length: 1.8 m/max. operating voltage: 1 kV DC/
max. operating current: 100 mA]



■ HP21-TOS

[cable length: 1.8 m/max. operating voltage: 250 Vrms/
max. operating current: 100 mA]



■ LP01-TOS

[cable length: 2 m/max. operating current: 30 A]



■ LP02-TOS

[cable length: 2 m/max. operating current: 60 A]



■ FP01-TOS

(flat probe for TOS3200, TOS9303LC)



Option

Remote Control Box

RC01-TOS*

[one-hand operation/dimensions: 200W×70H×39D mm]
Accessory cable length: 1.5 m

RC02-TOS*

[both-hands operation/dimensions: 330W×70H×39D mm]
Accessory cable length: 1.5 m



* The optional Adaptor DD-5P/6P is required for the connection.

Warning Light Unit

PL01-TOS (for 100 V AC)



PL02-TOS (for 24 V DC)



Buzzer Unit

BZ01-TOS (for 100 V AC)

* This can not be used with TOS9200/9201, TOS7200



DIN Cable

DD-3 5P

[cable length: 3 m/DIN plug to DIN plug]



Conversion Cable

DD-5P/6P

[Adapter /DIN to Mini DIN]



DD-5P/9P

[Adapter /DIN to Mini DIN]



The DD-5P/9P DIN adapter cable (5 pin to 9 pin) is for connecting the following option products to the TOS9300/TOS5300/TOS5200 series.

- Remote control box (RC01-TOS/RC02-TOS)
- High voltage test probe (HP01A-TOS/HP02A-TOS)
- Test probe for touch current test (HP21-TOS)

Multi Outlet

OT01-TOS (multi outlet for TOS3200)



Terminal Unit

TU01-TOS (for TOS5300/TOS5200 Series)



This is a terminal unit for converting a 25-pin SIGNAL I/O connector of TOS5300/5301/5302/5200 to a 14-pin SIGNAL I/O connector of TOS5050A/5051A.

By connecting via this product, the external control performed with TOS5050A/5051A can be performed with TOS5300/5301/5302/5200 at the same time.

Cross Reference of options for Electrical Safety Testers

Model	Remote Control		Warning Light Unit, Buzzer Unit, Terminal Unit				Test Probe					Test Lead															
	RC01/02-TOS	DD-3 5P	PL01-TOS	PL02-TOS	BZ01-TOS	TU01-TOS	HP01A/02A-TOS	HP11-TOS	HP21-TOS	LP01-TOS	LP02-TOS	FP01-TOS	TL01/02/03-TOS	TL04-TOS	TL05-TOS	TL06-TOS	TL07-TOS	TL08-TOS	TL11/12-TOS	TL13-TOS	TL21-TOS	TL22-TOS	TL31/32-TOS	TL33-TOS	TL51-TOS	HTL2.5-DH	
TOS9300	○			○			○																	○	○		
TOS9301	○			○			○																	○	○		
TOS9301PD	○			○			○																	○	○		
TOS9302	○			○			○													○				○	○		
TOS9303	○			○			○													○				○	○		
TOS9303LC	○			○			○		○		○									○		○		○	○		
TOS9320																	○							○	○		
TOS9213AS	○	○		○			○						○	○		○											
TOS5101	○	○	○		○																						
TOS5302	○			○			○																	○			
TOS5301	○			○			○																	○			
TOS5300	○			○			○																	○			
TOS5200	○			○			○																	○			
TOS6200A	○	○								○	○									○							
TOS6210	○	○								○	○									○							
TOS7200	○							○												○							
TOS7210S	○	○																								○	
TOS3200									○			○										○					
TOS8030	○	○		○			○						○														
TOS1200														○													
149-10A															○												○
RL01-TOS														○	○	○											

○ : Required the converting adapter "DD-5p/6p" ○ : Allows to use within the cable rating ○ : Required the converting adapter "DD-5p/9p"