

# The Vehicle Power Supply Circuit Positive Surge Simulator TIS 60T3

## Datasheet



### In Compliance with

- > Toyota TSC0502G
- > Toyota TSC3500G
- > Toyota TSC3590G
- > Toyota TSC7001G
- > Toyota TSC7203G
- > Toyota TSC7306G

### Introduction

The vehicle power supply circuit positive surge simulator TIS 60T3 is designed according to Toyota TSC0502G, which can be used to evaluate the resistance of the devices to the positive surge voltage that is produced when the battery terminals become disconnected.

It is capable of generating high-frequency pulse (Fig. 15), giant pulse (Fig. 17) and positive pole surge (Fig.19) specified in TSC0502G, featuring easy and intuitive setting design.

### Features

- > 5.7" color touch screen;
- > Satisfy the test requirement of positive surge test specified in Toyota TSC0502G;
- > Built-in DC switch for spark test;
- > Ethernet and RJ45 interface for PC remote control and test report printing;

### Application Areas

- > Automotive

Test 1: Technical Parameters for High-frequency Pulse Voltage Waveform	
Output Voltage ( $V_{ip}$ )	73 V $\pm$ 2 V (connected to 25 $\Omega$ $\pm$ 0.5 $\Omega$ load) 80 V $\pm$ 2 V (connected to 1 k $\Omega$ $\pm$ 0.02 k $\Omega$ load)
Rise Time ( $t_r$ )	$\leq$ 10 $\mu$ s
Time Constant ( $\tau$ )	52 $\mu$ s $\pm$ 5 $\mu$ s
Pulse Repetition ( $t$ )	5 ms
Test Time	10 min

Test 2: Technical Parameters for Giant Pulse Voltage Waveform	
Output Voltage ( $V_{GP}$ )	100 V $\pm$ 2 V (connected to 25 $\Omega$ $\pm$ 0.5 $\Omega$ load) 110 V $\pm$ 2 V (connected to 1 k $\Omega$ $\pm$ 0.02 k $\Omega$ load)
Rise Time $t_r$	$\leq$ 1 ms
Time Constant ( $\tau$ )	0.188 s $\pm$ 0.004 s
Pulse Repetition	1 min
Counter	1-99

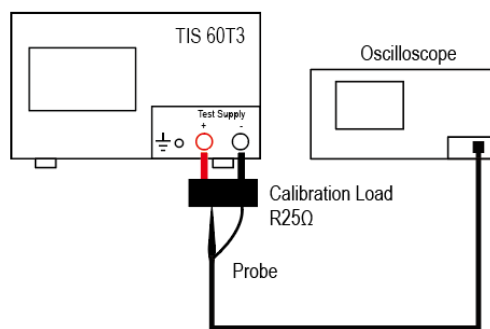
Test 3: Technical Parameters for High-frequency Pulse + Surge Voltage	
<b>High-frequency Pulse</b>	
Pulse Voltage Peak Value ( $V_{ip}$ )	73 V $\pm$ 2 V (connected to 25 $\Omega$ $\pm$ 0.5 $\Omega$ load) 80 V $\pm$ 2 V (connected to 1 k $\Omega$ $\pm$ 0.02 k $\Omega$ load)
Rise Time ( $t_r$ )	$\leq$ 10 $\mu$ s
Time Constant ( $\tau$ )	52 $\mu$ s $\pm$ 5 $\mu$ s
Pulse Repetition ( $t$ )	5 ms
<b>Surge Voltage</b>	
Output Voltage Peak	30 V (+0,-1V)
Pulse Duration	300 ms
Pulse Repetition	1 min
Counter	10 s
Calibration Resistor	25 $\Omega$ $\pm$ 0.5 $\Omega$ , 1 k $\Omega$ $\pm$ 0.02 k $\Omega$
DUT Load(optional)	30 A, 50 A, 75 A, 100 A

General Parameters	
Working Power Supply	AC 110V/220V $\pm$ 10%, 50/60Hz $\pm$ 5% (AC 220V 50Hz in mainland China by default)
Ambient Temperature	5°C ~ 23°C
Relative Humidity	25% ~ 70%
Atmospheric Pressure	86 kPa ~ 106 kPa
Dimension	6U
Weight	Approx. 50 kg

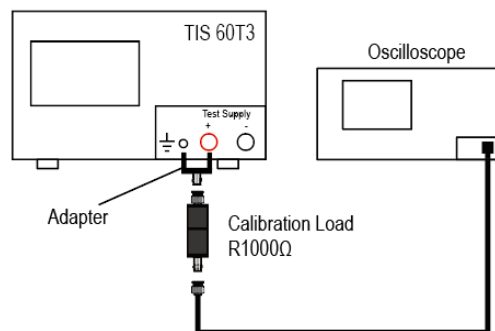
Accessories
Test Line, Power Line, Fuses (spare parts), User Manual

Options
Calibration Load R25 $\Omega$ : 25 $\Omega$ $\pm$ 0.5 $\Omega$ R1000 $\Omega$ : 1 k $\Omega$ $\pm$ 0.02 $\Omega$
Autolab Control Software

Calibration Setup:



When connected to 25 ohm load



When connected to 1000 ohm load



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