

TMO7032 Series

Electrostatic Chuck Power Supply | $\pm 5\text{kV}$, 50W, 20ms polarity switching response



- +24V DC Input
- Independent two channels output, $\pm 5\text{kV}$ each channel
- Maximum 35mA for each channel
- Ripple <20ppm
- 20ms polarity switching time
- Polarity hot switch
- Analog and RS485 interface
- 100nF capacitance position detection

Introduction:

TMO7032 Series static chuck dedicated high voltage power supply provides precise output of $\pm 5\text{kV}/35\text{mA}$ ($\pm 1\%$, ripple <100mVp-p), and supports load capacitance detection for under 100nF load. It has the of 20ms fast zero-crossing switching, integrates multiple protection functions, and supports analog/RS485 control and LCD display. It has been applied in semiconductor implantation and etching equipment, with stable and reliable performance. Its compact and lightweight packaging design can be OEM.

Application:

E-Chuck.

Specification:

Input	+24VDC $\pm 5\%$. 5A
Input port	125 pins
Output	Independent 2 channels
Voltage range	-5kV to +5kV adjustable each channel
Output current	Setting range 0 ~35mA (load < 1 μF)
Voltage accuracy	$\pm 1\%$ of rated value
Ripple	Typical < 100mVp-p, (10nf, 0~1 MHz)
Pass 0	Yes
Over-shoot	Typical < 2V (Load capacitance 10nF, from -5kV, to +5kV)
Output delay	Less than 3ms
Switching period	Typical 20ms (Load capacitance 10nF, from -5kV, to +5kV)
Frequency	Typical 50Hz (Load capacitance 10nF, from -5kV, to +5kV)
Output Impedance	>20k Ω (single channel)
Voltage display	Resolution= 1V Accuracy = $\pm 50\text{V}$
Current display	Resolution= 10 μA Accuracy = Actual value $\pm 100\mu\text{A}$, bias $\pm 2\%$
Stability	2V/s
Line regulation	<0.1% when input change within 10%
Load regulation	<1.3% from 0 to full load
Protection	Arc and short-circuit protection. Input and output current limiting. Output current setting range between 0.1mA to 2mA
Local control	Voltage adjustment, current setting, d-chuck button, LCD display
Communication	DB25 analog, RS-485
Interface signal	0 to 10V corresponding to -5kV to +5kV
Typical Load capacitance	<10nF

Load detection	<100nF (need external detection module)
Temperature coefficient	<300ppm/°C for current and voltage. At full load<0.1%p-p
Dimensions	241 mm *88 mm *411mm (W*H*D)
Environmental	Operational: 0°C to 45°C; Storage: -20°C to 70°C
Humidity	0 to 85%RH, non condensing
Cooling	Convection

Description of Model Code

The model code represents the performance and parameters of the power supply, which are:

Maximum output voltage in kV;

Maximum output power in W;

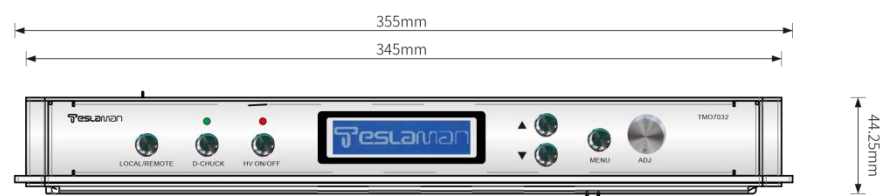
Output polarity, PN for bipolar;

TMO7032	PN	5	-	20
Model	Polarity	Maximum voltage		Maximum power

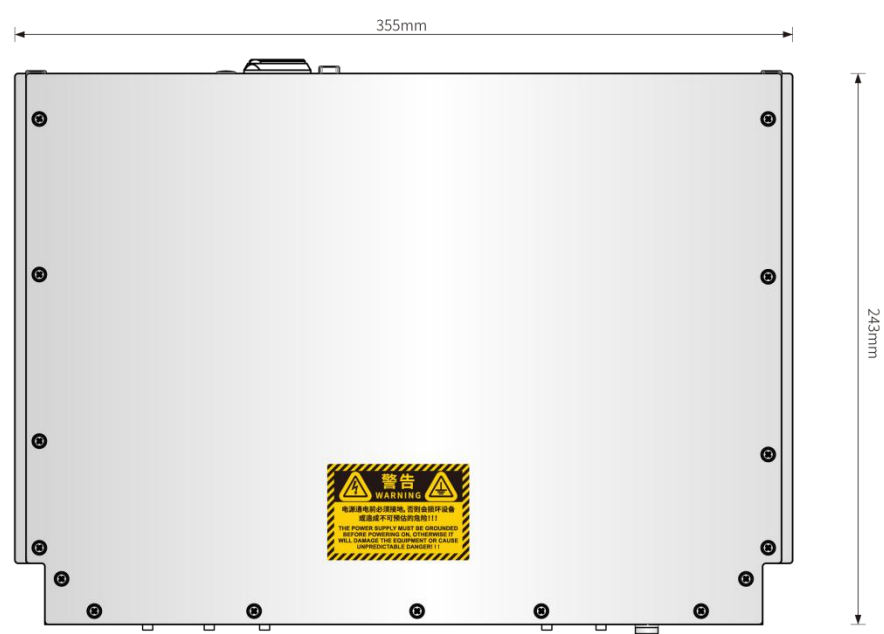
TMO7032 Model Selection Table

Rated Output		Model
kV	mA	
1	35	TMO7032PN1-35
3	35	TMO7032PN3-105
5	35	TMO7032PN5-175

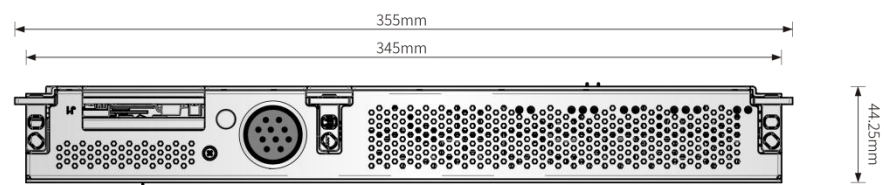
Dimensions: mm



Front View



Top View



Rear View