



# MODEL 7054-1 SPIKE GENERATOR 600 volts

for conducted transient susceptibility testing up to 600 volts peak



For those who have graduated from the 50 volt and 100 volt spike susceptibility category, we offer this high-power 600 volt transient generator. The **Model 7054-1** delivers over 300 kw into low resistance loads. It has the flexibility and capability of the previous models, including the ability to shift the transient in phase to any position on the sine wave of the a.c. line feeding the test sample. The amplitude and the repetition rate are adjustable.

## APPLICATION

The **Model 7054-1 Spike Generator** was especially designed for screen room use in applying high voltage transients at power line inputs to electronic equipment. The adjustable amplitude makes it possible to determine the threshold of susceptibility to spikes appearing on the power line.

The **Model 7054-1** may be used for performing tests per Method CS06 of MIL-STD-462, Method

5006.1 of MIL-STD-826A, RTCA D0160D (with impedance matching transformer) various missile specifications and others.

## DESCRIPTION

The peak amplitude of the **Model 7054-1 Spike Generator** is adjustable from 10 volts to over 600 volts into 5 ohms. The source impedance is less than 0.5 ohm. The transient shape approximates the curve given in Figure 19 of MIL-STD-462. Less than one microsecond rise time and approximately 10 microseconds fall time.

On 50, 60 or 400 Hz power lines the transient can be applied in a periodic manner to the negative or the positive half-cycle of the power frequency. The transient's relation to the sine wave may be adjusted in phase from 0° to 360°. For non-synchronous injection on either a.c. or d.c. lines, the repetition rate can be adjusted from 0.8 p.p.s. to 10 p.p.s. Single transients can be applied with the pushbutton on the panel.

Two sets of output terminals allow either parallel or series injection into the power line. Series injection may be used on d.c. and a.c. lines. Parallel injection is used on d.c. lines **only**. The output winding used for series injection can carry 25 amperes of power current. The output terminals are isolated from the chassis and the power cord.



## SPECIAL MODELS

### Model 7054-1A.

Waveshape falls to zero in approximately 50 microseconds. Provides 400 volts peak into 5 ohm load. Handles 15 amperes power current.

### Model 7054-1B.

Waveshape falls to zero in approximately 120 microseconds. Provides 400 volts peak into 5 ohm load. Handles 10 amperes power current.

## FEATURES

- Provides output levels from 10 volts to more than 600 volts into 5 ohms or less. Delivers more than 300 kw peak into 0.5 ohm load.
- Adjustable pulse position on a.c. lines relates the transient susceptibility to real time aspects of digital systems.
- Single pulse feature for controlled isolation of transient effects.
- Output terminals for series or parallel injection.
- Standard rack panel construction: 7" high, 19" wide, 12.75" deep. (17.78 cm wide, 48.26 cm high, 32.38 cm deep.)



**SOLAR ELECTRONICS COMPANY**

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e-mail: sales@solar-emc.com

www.solar-emc.com

A division of A.T. Parker, Inc.

(800) 952-5302

(818) 755-1700

FAX (818) 755-0078

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## SPECIFICATIONS

**Spike Amplitude:** Continuously adjustable from 10 volts to over 600 volts peak.

**Repetition Rate:** Continuously adjustable from 0.8 to 10 p.p.s.

**Rise Time:** Less than 1.0 microsecond, into 5 ohm resistive load.

**Spike Duration:** Output falls to zero in approximately 10 microseconds.

**Spike Shape:** See curve. Similar to Figure 19 of MIL-STD-462.

**Phase Adjustment:** Spike position adjustable from 0° to 360° periodically on 50, 60 or 400 Hz sine wave.

**Internal Impedance:** Less than 0.5 ohm.

**Output Power:** More than 300 kw peak into 0.5 ohm load.

**Power Current in Series Injection Mode:** Handles up to 25 amperes of current at power frequencies.

**Power Requirements:** 115 volts 60 Hz, 1.6 amperes. (230 volts 50 Hz, 0.8 ampere available.)

**Size: Standard rack panel:** 7" high, 19" wide, 12.75" deep. (17.78 cm x 48.26 cm x 32.38 cm.)

## AVAILABLE ACCESSORIES

**Type 7332-1 Transient Pulse Transformer.** Plugs into SERIES output terminals of **7054-1A** to provide spike levels up to 600 volts, peak, into 6 ohm load.

**Type 7406-1 Transient Pulse Transformer.** Plugs into SERIES output terminals of **7054-1** to provide spike levels up to 1200 volts, peak, into 50 ohm load.

**Type 8525-1 Noninductive Five Ohm Load.**

**Type 8527-1 Transient Pulse Transformer.** Plugs into SERIES output terminals of **7054-1** to provide spike levels up to 2 KV, peak, into 50 ohm load.

