



Model 7054-1 Spike Generator 600 V for conducted transient susceptibility testing up to 600 V peak



DESCRIPTION



For those who have graduated from the 50 V and 100 V spike susceptibility category, we offer this high-power 600 V transient generator. The **Solar Model 7054-1 Spike Generator** 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 AC line feeding the test sample. The amplitude and the repetition rate are adjustable.

APPLICATION

The **Model 7054-1** 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, various missile specifications and others. The **Model 7054-1** also may be used to perform Section 17 testing of RTCA/DO-160G when used in conjunction with **Solar Type 2201-1** or **2201-2 Impedance Matching Transformers**.

DESCRIPTION

The peak amplitude of the **Solar Model 7054-1** is adjustable from 10 V to over 600 V into 5 Ω . The source impedance is less than 0.5 Ω . The transient shape approximates the curve given in Figure 19 of MIL-STD-462 with less than or equal to 2.0 μ S rise time and approximately 10 μ S 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 AC or DC lines, the repetition rate can be adjusted from 0.8 pulse per second to 10 pulse per second. 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 DC and AC lines. Parallel injection is used on DC lines **only**. The output winding used for series injection can carry 25 A of power current. The output terminals are isolated from the chassis and the power cord.

FEATURES

- Provides output levels from 10 V to more than 600 V into 5 Ω or less. Delivers more than 300 kW peak into 0.5 Ω load
- Adjustable pulse position on AC 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: 19" wide x 7" high x 12.75" deep (48.26 cm x 17.78 cm x 32.38 cm)



SPECIFICATIONS



Spike amplitude: Continuously adjustable from less than 10 V to more than 250

V peak

Repetition rate: Continuously adjustable from 0.8 to 10 pulse per second

Rise time: Less than or equal to 2.0 μ S into 5 Ω resistive load

Spike duration: Output falls to zero in approximately 10 μ S

Spike shape: See Figure 3. 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 Ω

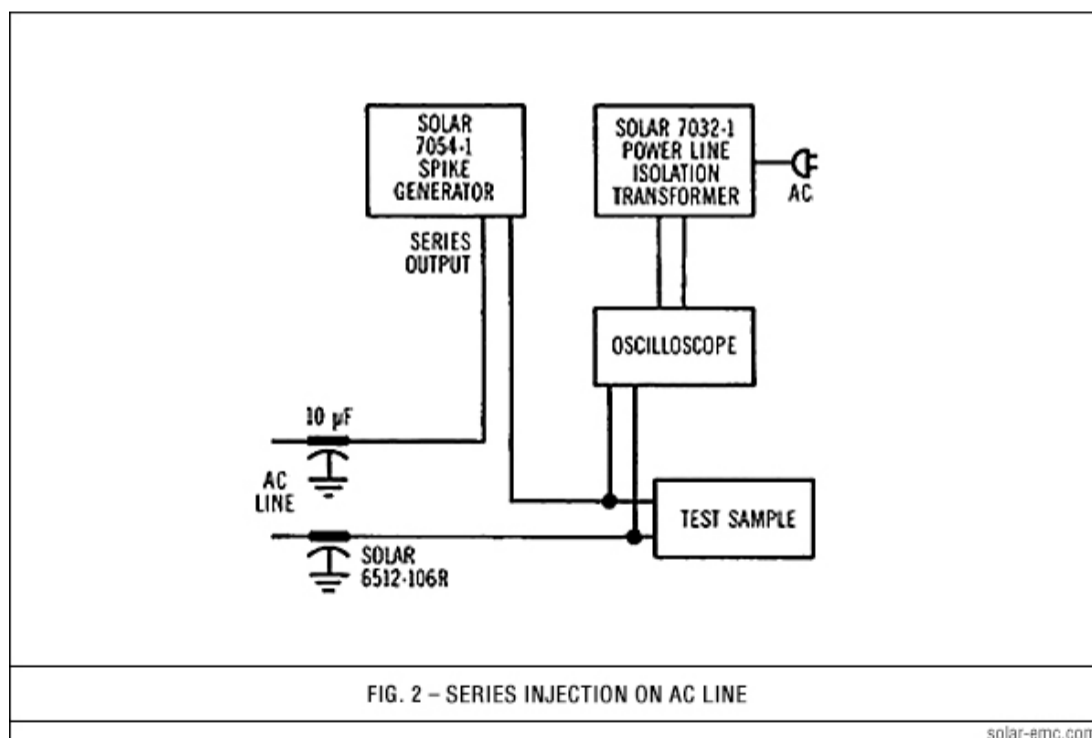
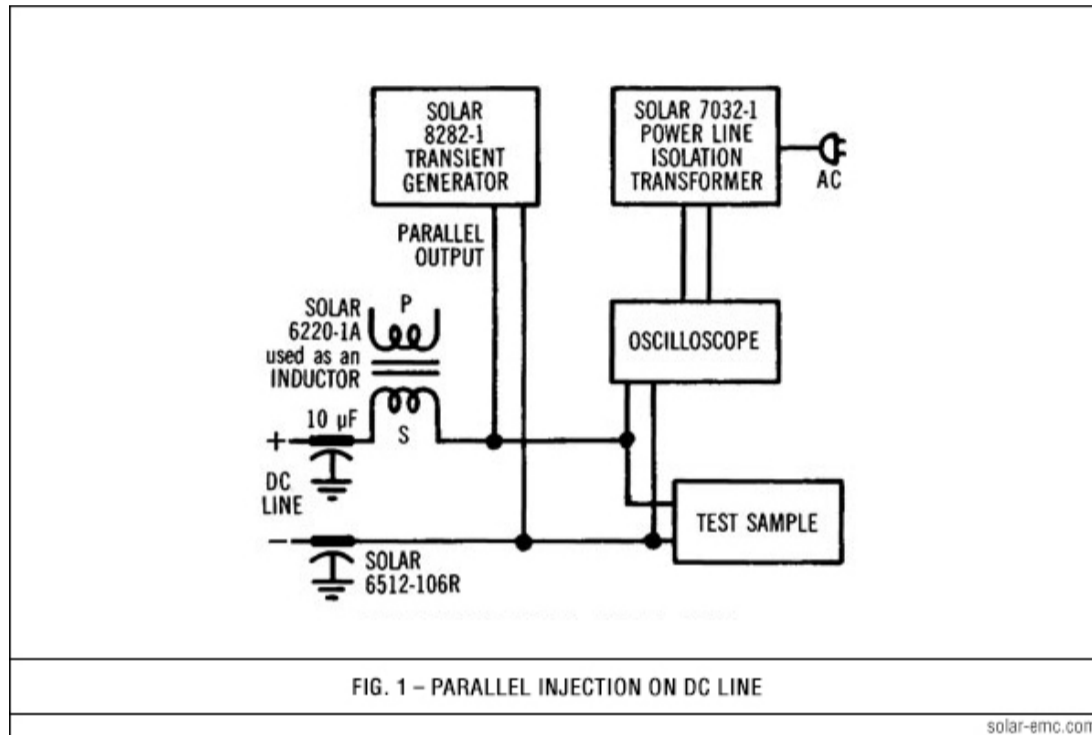
Output power: More than 300 kW peak into 0.5 Ω load

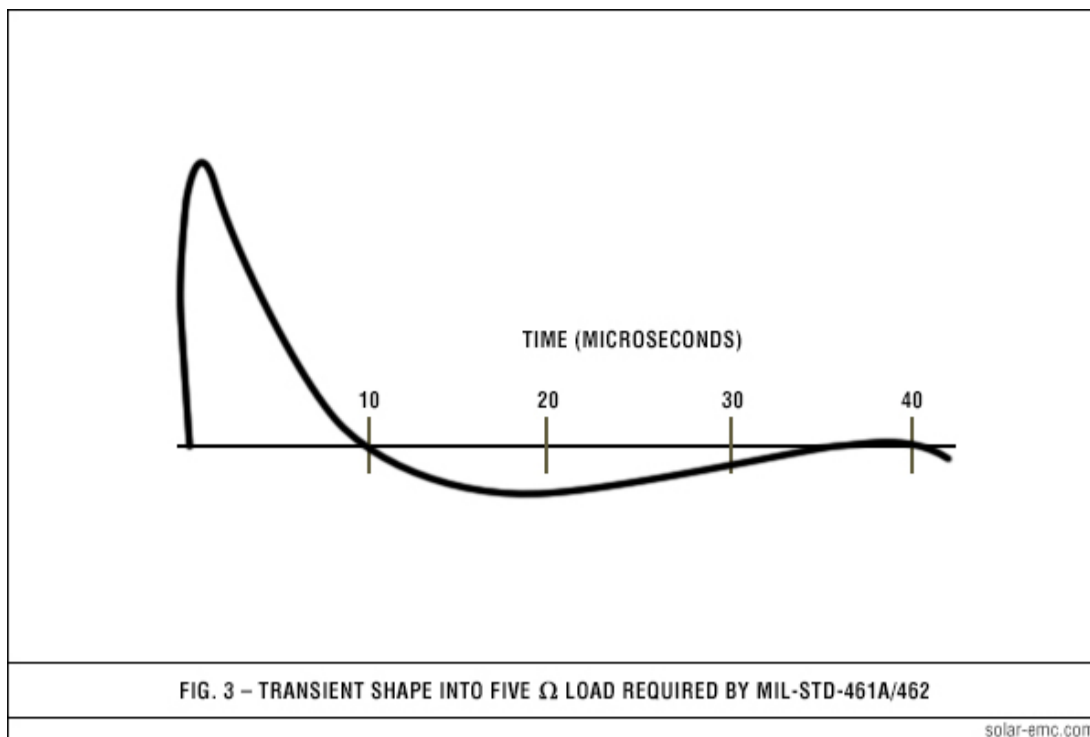
Power current in series injection mode: Handles up to 25 A of current at power frequencies

Power requirements: 115 V 60 Hz, 1.6 A (230 V 50 Hz, 0.8 A available)

Dimensions, standard rack panel: 19" wide x 7" high x 12.75" deep
(48.26 cm x 17.78 cm x 32.38 cm)

FIGURES





USEFUL ACCESSORIES



Solar Type 7332-1 Transient Pulse Transformer

Plugs into SERIES output terminals of **Model 7054-1A** to provide spike levels up to 600 V, peak, into 6 Ω load

Solar Type 2201-1 Impedance Matching Transformer

Plugs into SERIES output terminals of **Model 7054-1** to provide 600 V spikes into 50 Ω per RTCA/DO-160G, Section 17

Solar Type 2201-2 Impedance Matching Transformer

Plugs into SERIES output terminals of **Model 7054-1** to provide 1000 V spikes into 50 Ω

SPECIAL MODELS



Solar Model 7054-1A

Waveshape falls to zero in approximately 50 μ S. Provides 400 V peak into 5 Ω load. Handles 15 A power current.

Solar Model 7054-1B

Waveshape falls to zero in approximately 120 μ S. Provides 400 V peak into 5 Ω load. Handles 10 A power current.

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