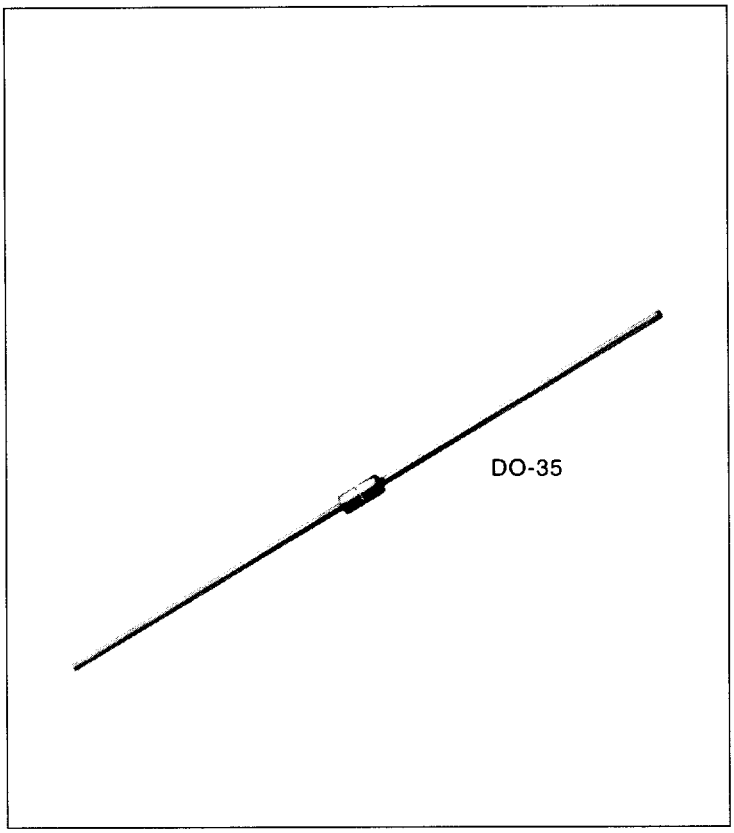

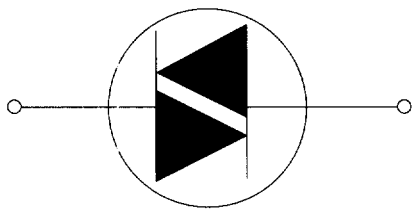

Bilateral Trigger Diacs

HT Series

General Description

Teccor's "HT" Series of bilateral trigger diacs offers a range of voltage characteristics from 27 to 70 volts.

The diac semiconductor is a full-wave or bidirectional thyristor. It is triggered from a blocking-to-conduction state for either polarity of applied voltage whenever the amplitude of applied voltage exceeds the breakover voltage rating of the diac.

The Teccor line of diacs features glass-passivated junctions to ensure long term device reliability and parameter stability. Teccor's glass offers a rugged, reliable barrier against junction contamination.

The diac specifications listed in this data sheet are for standard products. Special parameter selections such as close tolerance voltage symmetry are available. Please consult the factory for more information for custom design applications. Suffix RP signifies tape-and-reel packing. Example: HT32RP.

Features

- **Glass-chip passivation**
- **DO-35 trigger package**
- **Pre-tinned leads**
- **Wide voltage range selections**

Electrical Specifications

ELECTRICAL CHARACTERISTICS T_C = 25°C						
	V_{BO}		ΔV_{BO}	V_{BB}	I_{BO}	I_{TRM}
Part Number	Breakover Voltage (Forward and Reverse) Volts		Breakover Voltage Symmetry $\Delta V_{BO} = [\,\lvert +V_{BO} \rvert - \lvert -V_{BO} \rvert\,]$ Volts	Dynamic Breakback Voltage (3) $\lvert \Delta V \pm \rvert$ Volts	Peak Breakover Current at Breakover Voltage µAmps	Peak Pulse Current for 10µs 120 PPS $T_A \leq 40°C$ Amps
	MIN	MAX	MAX	MIN	MAX	MAX
HT-32	27	37	3 (1)	10 (2)	25	2.0
HT-32A / HT-5761	28	36	2 (1)	7 at 10mA (4)	25	2.0
HT-32B / HT-5761A	30	34	2 (1)	7 at 10mA (4)	25	2.0
HT-34B	32	36	2 (1)	10 (2)	25	2.0
HT-35	30	40	3 (1)	10 (2)	25	2.0
HT-36A / HT-5762	32	40	2 (1)	7 at 10mA (4)	25	2.0
HT-36B	34	38	2 (1)	10 (2)	25	2.0
HT-40	35	45	3 (1)	10 (2)	25	2.0
HT-60	56	70	4	20 (2)	25	1.5

General Notes

- Lead solder temperature is +230°C max. for 10 seconds max.; ≥ 1/16" (1.59mm) from case.
- See "Package Dimensions" section of this catalog.

Electrical Specification Notes

(1) Breakover Voltage symmetry as close as 1.0V is available from factory on these products.
(2) See Figures 8.4 and 8.5 for Test Circuit and waveforms.
(3) Typical switching time is 900 nano-seconds measured at I_{PK} (see Figure 8.4) across a 20Ω resistor (see Figure 8.5). Switching time defined as rise time of I_{PK} between the 10% to 90% points.
(4) See Figure 8.7.

Bilateral Trigger DIAC Specifications

- Maximum Ratings, Absolute-Maximum Values

  Maximum Trigger Firing Capacitance: 0.1µF
  Device Dissipation (at T_A = -40° to +40°C): 250mW
  Derate Above +40°C: 3.6mW/°C

- Temperature Ranges

  Storage: -40°C to +125°C
  Operating (Junction): -40°C to +125°C

- Thermal Resistance
  Junction to Ambient ($R_{\theta JA}$): 278°C/W
  Junction to Lead ($R_{\theta JL}$): 100°C/W
  (based on maximum lead temperature of 85°C at ≤250mW)

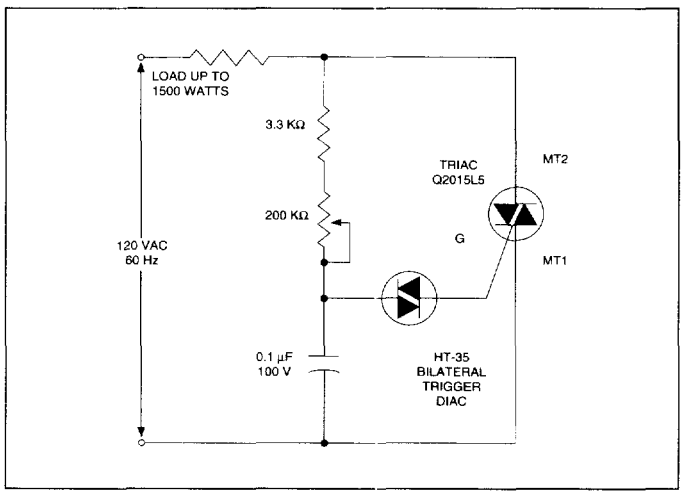

Figure 8.1 Typical Diac-Triac Full-Wave Phase Control Circuit using Lower Voltage Diacs

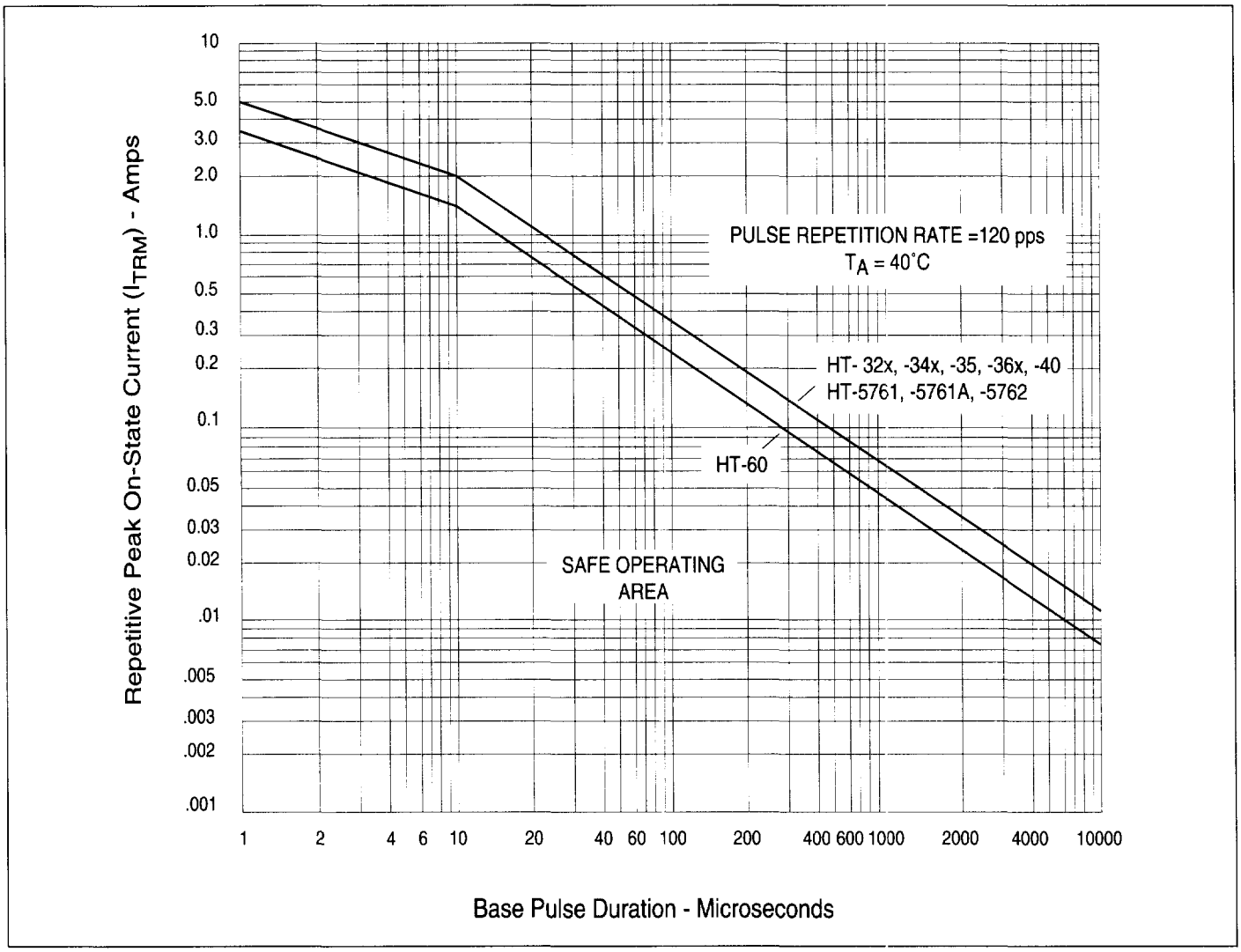

Figure 8.2 Repetitive Peak On-State Current vs Pulse Duration

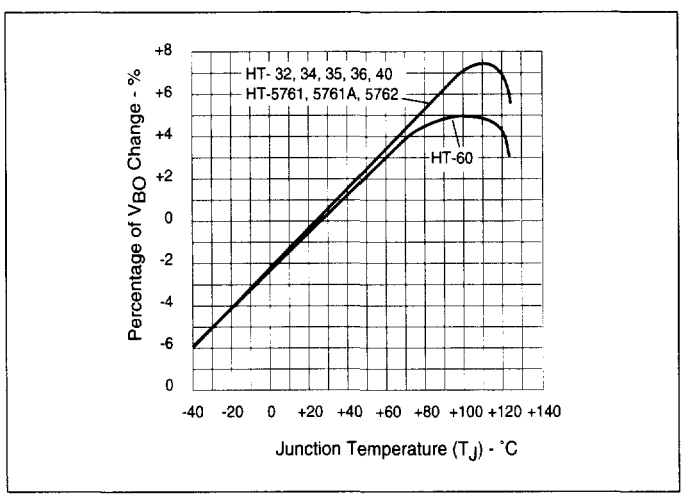

Figure 8.3 Normalized V_{BO} Change vs Junction Temperature

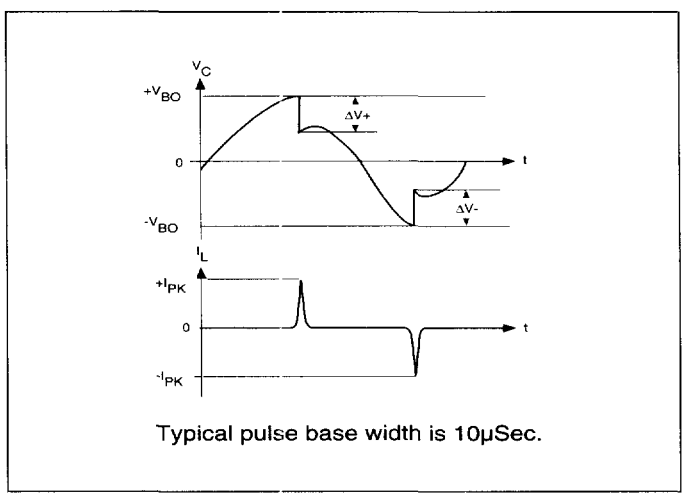

Figure 8.4 Test Circuit Waveforms (See Figure 8.5.)

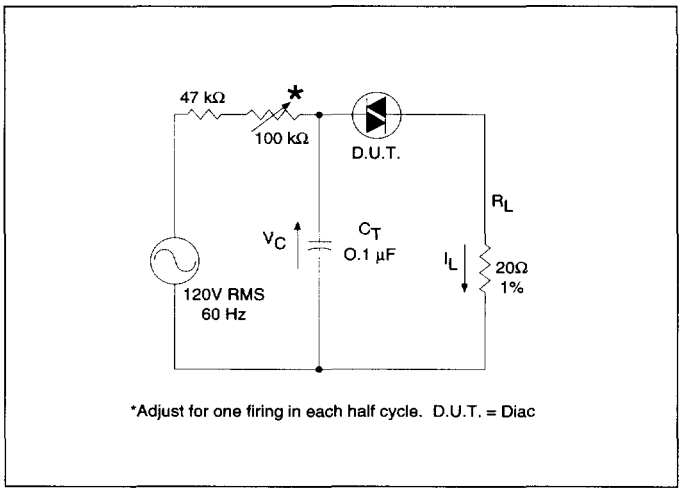

Figure 8.5 Circuit Used to Measure Diac Characteristics (See Figure 8.4.)

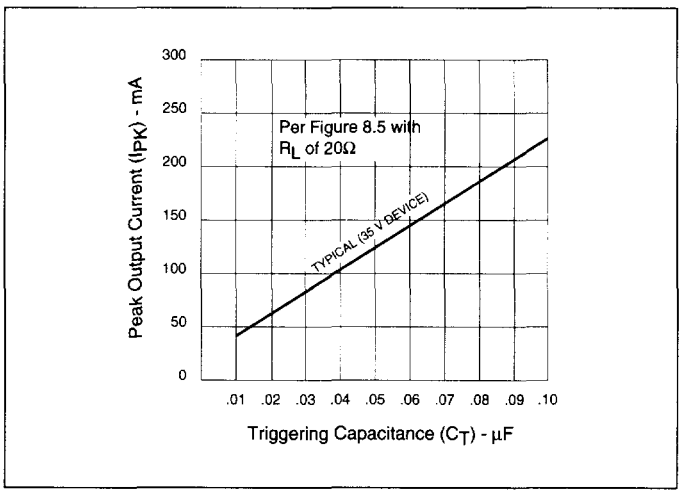

Figure 8.6 Peak Output Current vs Triggering Capacitance

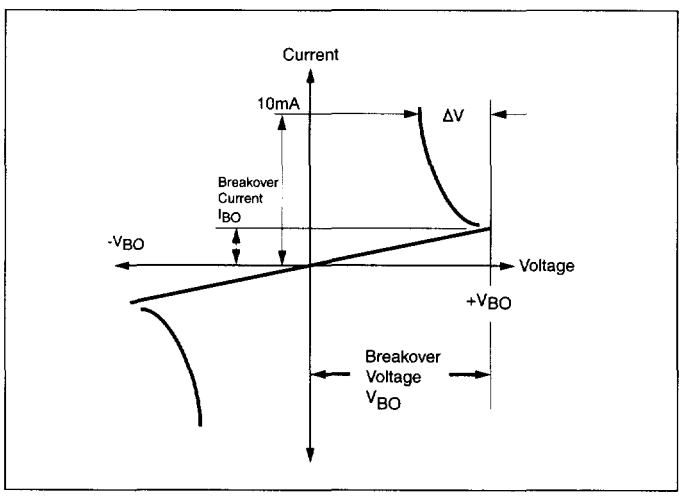

Figure 8.7 V-I Characteristics