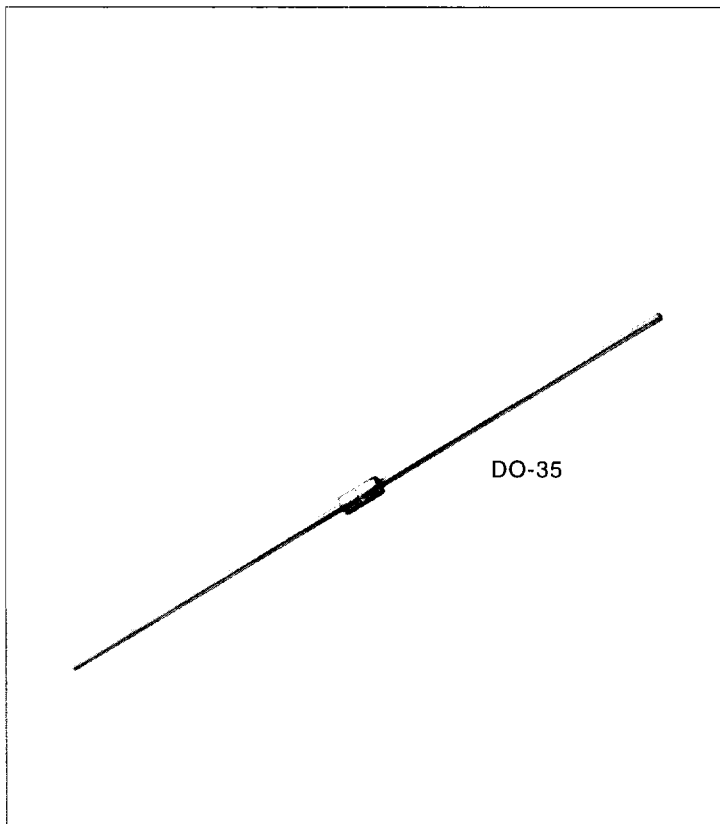


Bilateral Trigger Diacs

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 $T_C = 25^\circ\text{C}$						
Part Number	V_{BO}		ΔV_{BO}	V_{BB}	I_{BO}	I_{TRM}
	Breakover Voltage (Forward and Reverse)		Breakover Voltage Symmetry	Dynamic Breakback Voltage (3)	Peak Breakover Current at Breakover Voltage	Peak Pulse Current for 10 μs 120 PPS $T_A \leq 40^\circ\text{C}$
	Volts		$\Delta V_{BO} = [+V_{BO} - -V_{BO}]$	Volts	μAmps	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 $+230^\circ\text{C}$ max. for 10 seconds max.; $\geq 1/16"$ (1.59mm) from case.
- See "Package Dimensions" section of this catalog.

Electrical Specification Notes

- Breakover Voltage symmetry as close as 1.0V is available from factory on these products.
- See Figures 8.4 and 8.5 for Test Circuit and waveforms.
- 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.
- See Figure 8.7.

Bilateral Trigger DIAC Specifications

- Maximum Ratings, Absolute-Maximum Values
Maximum Trigger Firing Capacitance: 0.1 μF
Device Dissipation (at $T_A = -40^\circ$ to $+40^\circ\text{C}$): 250mW
Derate Above $+40^\circ\text{C}$: 3.6mW/ $^\circ\text{C}$
- Temperature Ranges
Storage: -40°C to $+125^\circ\text{C}$
Operating (Junction): -40°C to $+125^\circ\text{C}$
- 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 $\leq 250\text{mW}$)

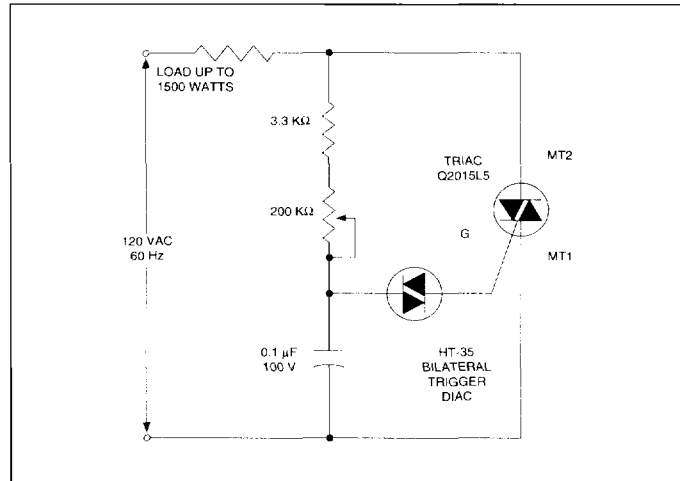


Figure 8.1 Typical Diac-Triac Full-Wave Phase Control Circuit using Lower Voltage Diacs

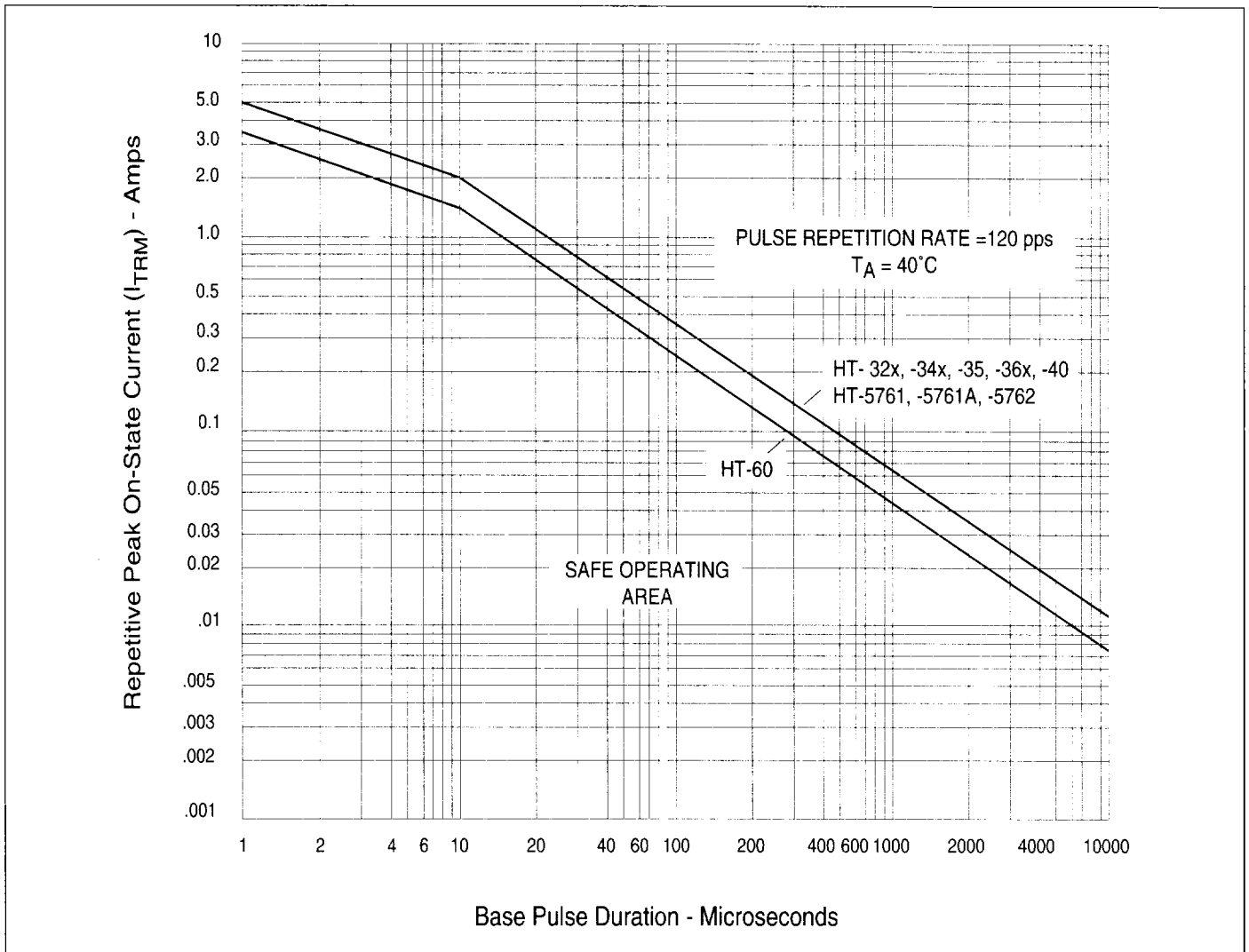


Figure 8.2 Repetitive Peak On-State Current vs Pulse Duration

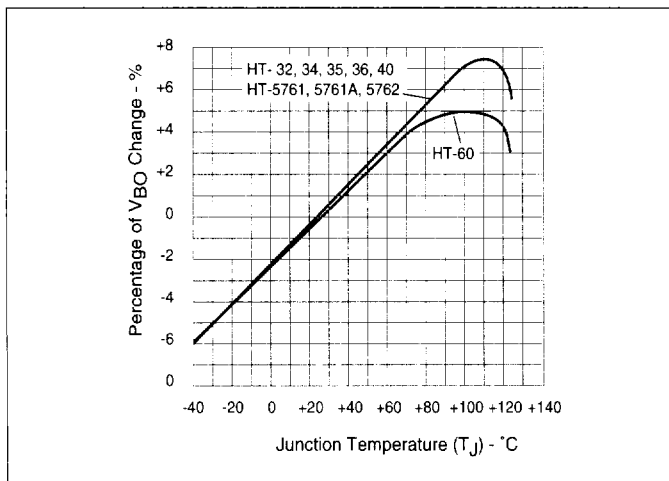


Figure 8.3 Normalized V_{BO} Change vs Junction Temperature

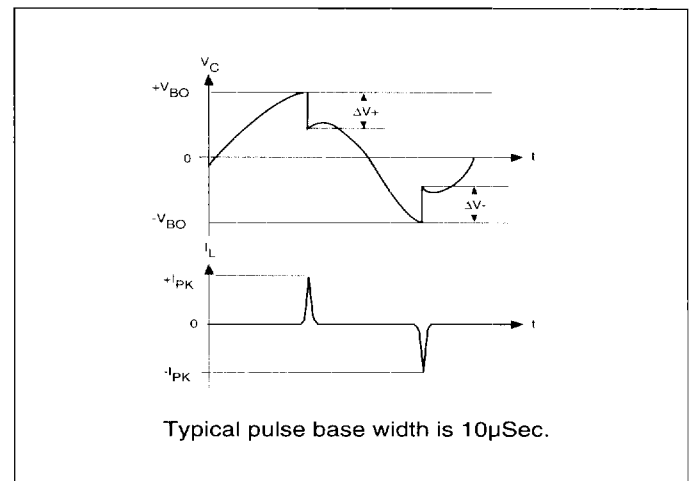


Figure 8.4 Test Circuit Waveforms (See Figure 8.5.)

Electrical Specifications

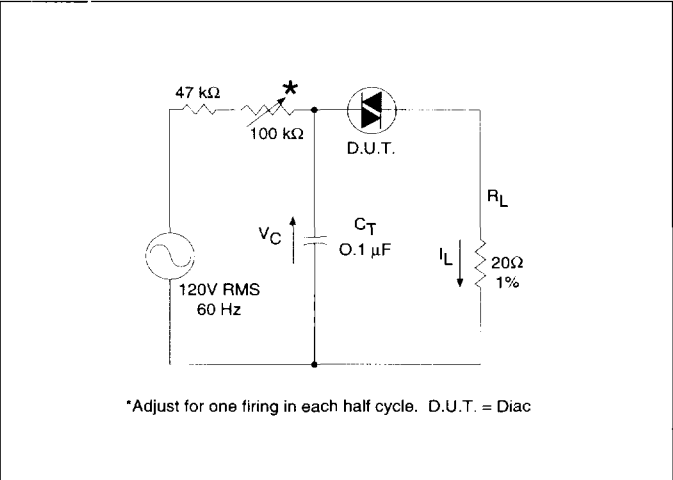


Figure 8.5 Circuit Used to Measure Diac Characteristics (See Figure 8.4.)

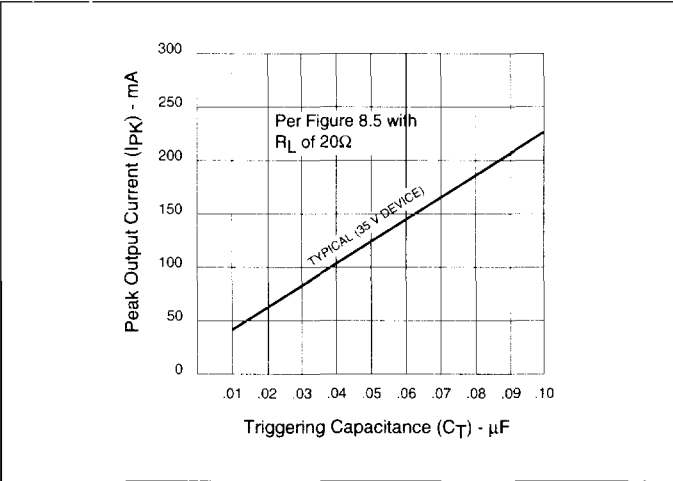


Figure 8.6 Peak Output Current vs Triggering Capacitance

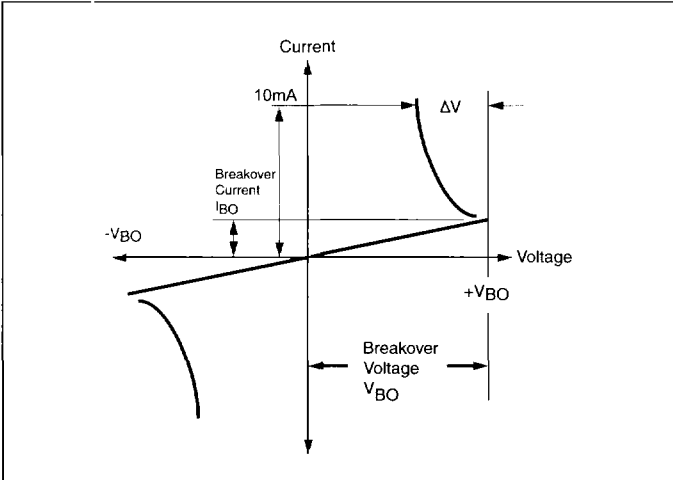


Figure 8.7 V-I Characteristics