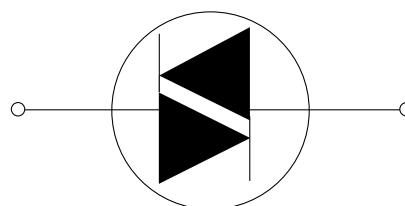


DO-35



DO-214AA



Bilateral Trigger Diacs

HT and ST Series

General Description

Teccor's "HT" and "ST" 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

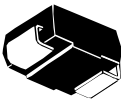
- Glass passivated junctions
- Wide voltage range selections

"ST" Series

- Epoxy SMT package
- High temperature solder bonded die attachment

"HT" Series

- DO-35 trigger package
- Pre-tinned leads

ELECTRICAL CHARACTERISTICS $T_C = 25^\circ\text{C}$							
Part No.		V_{BO}		ΔV_{BO}	V_{BB}	I_{BO}	I_{TRM}
 DO-35	 DO-214AA	Breakover Voltage (Forward and Reverse)		Breakover Voltage Symmetry $\Delta V_{BO} = [+V_{BO} - -V_{BO}]$	Dynamic Breakback Voltage (3) $ \Delta V_{\pm} $	Peak Breakover Current at Breakover Voltage μAmps	Peak Pulse Current for 10 μs 120 PPS $T_A \leq 40^\circ\text{C}$ Amps
		Volts		Volts	Volts		
		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	ST-34B	32	36	2 (1)	10 (2)	25	2.0
HT-35	ST-35	30	40	3 (1)	10 (2)	25	2.0
HT-36A / HT-5762	ST-36A	32	40	2 (1)	7 at 10mA (4)	25	2.0
HT-36B	ST-36B	34	38	2 (1)	10 (2)	25	2.0
HT-40	ST-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 for DO-35 and 300mW for DO-214AA
Derate Above $+40^\circ\text{C}$: 3.6mW/ $^\circ\text{C}$ for DO-35 and 3mW/ $^\circ\text{C}$ for DO-214AA
- Temperature Ranges
Storage: -40°C to $+125^\circ\text{C}$
Operating (Junction): -40°C to $+125^\circ\text{C}$

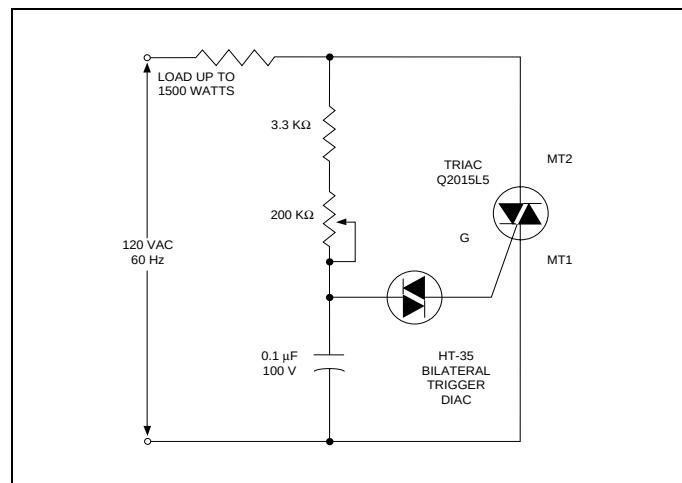
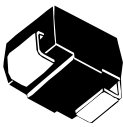


Figure 8.1 Typical Diac-Triac Full-Wave Phase Control Circuit using Lower Voltage Diacs

HT and ST Series Thermal Resistance	
Junction to Lead - $R_{\theta JL}$: $^\circ\text{C/W}$	
Junction to Ambient [$R_{\theta JA}$]: $^\circ\text{C/W}$	
(based on maximum lead temperature of 90°C for DO-214AA and 85°C for DO-35 devices)	
Y  DO-35	S  DO-214AA
100 [278] $^\circ\text{C/W}$	65 [200] $^\circ\text{C/W}$

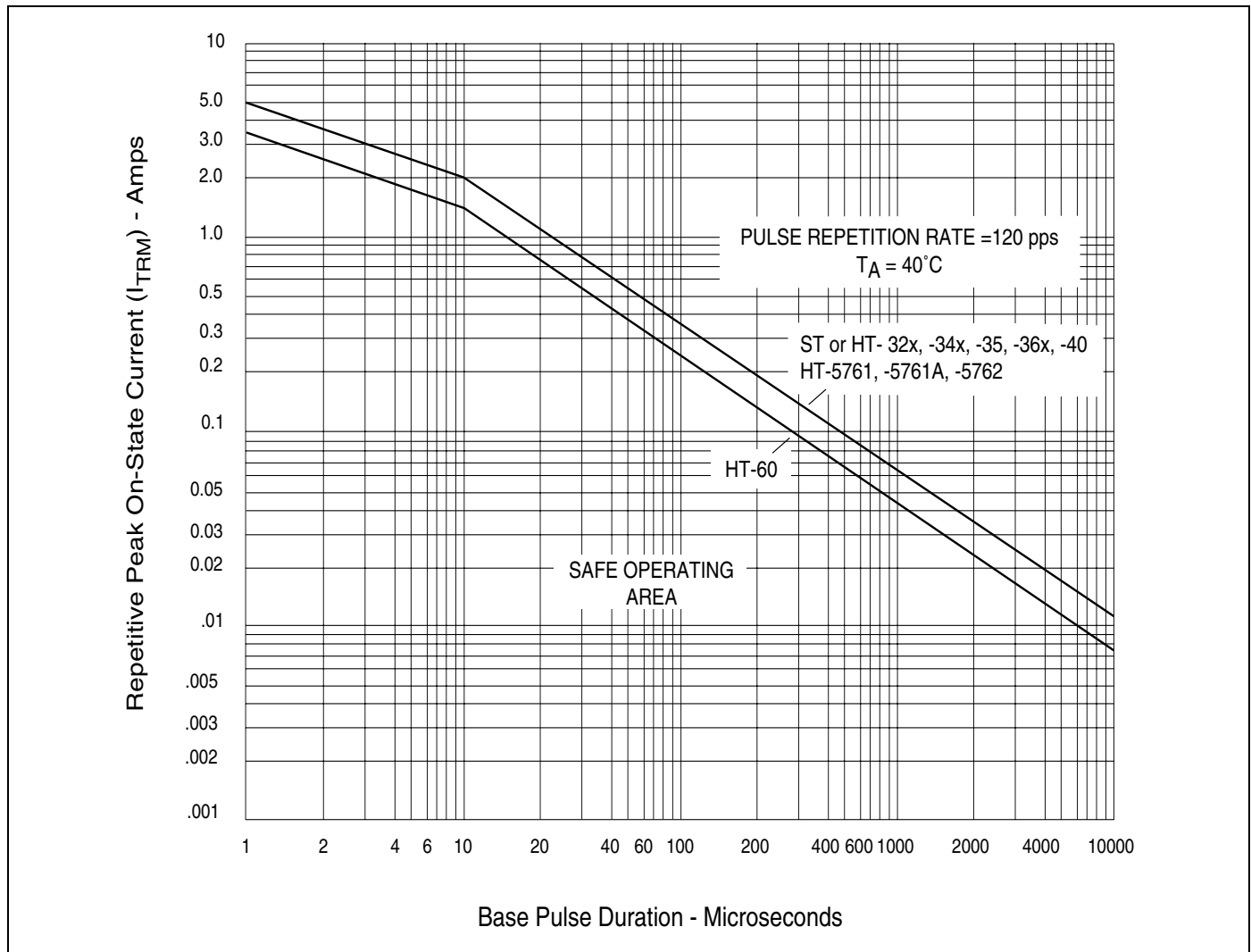


Figure 8.2 Repetitive Peak On-State Current vs Pulse Duration

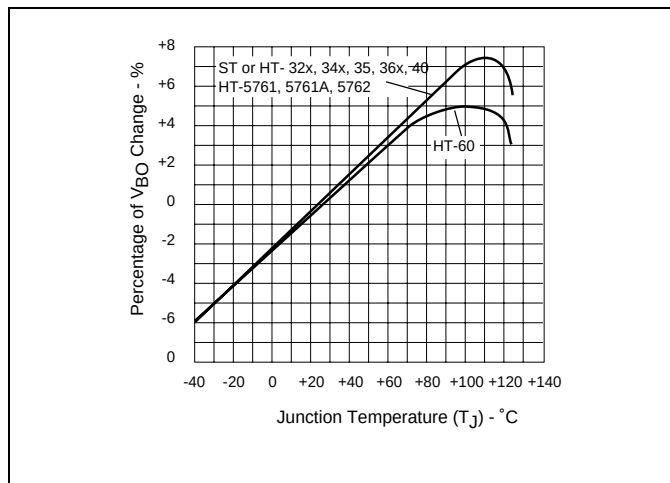
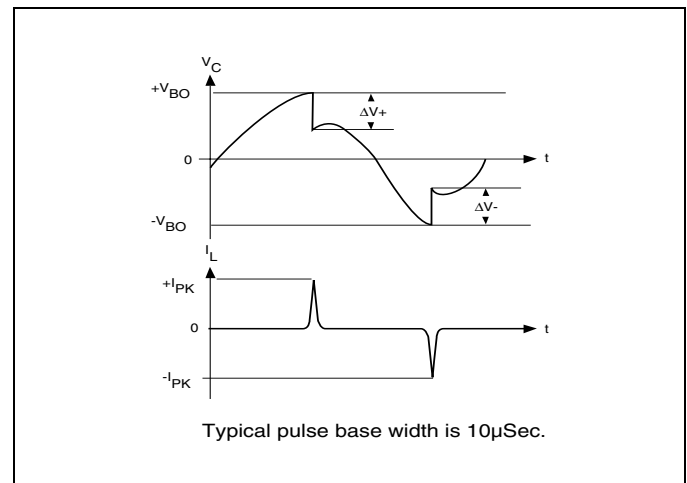
Figure 8.3 Normalized V_{BO} Change vs Junction Temperature

Figure 8.4 Test Circuit Waveforms (See Figure 8.5.)

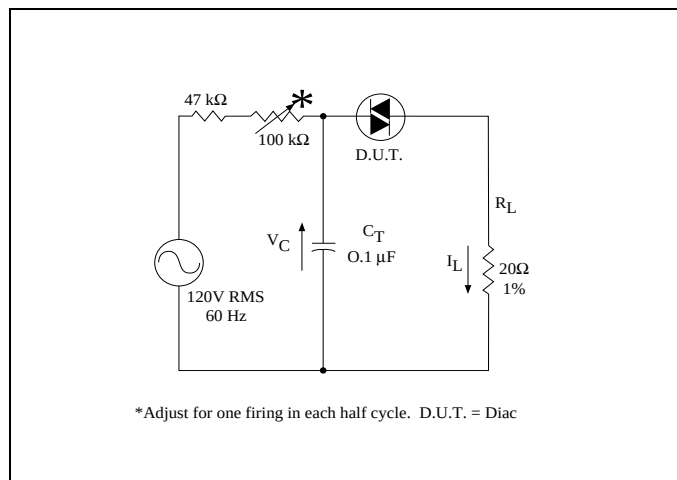


Figure 8.5 Circuit Used to Measure Diac Characteristics (See Figure 8.4.)

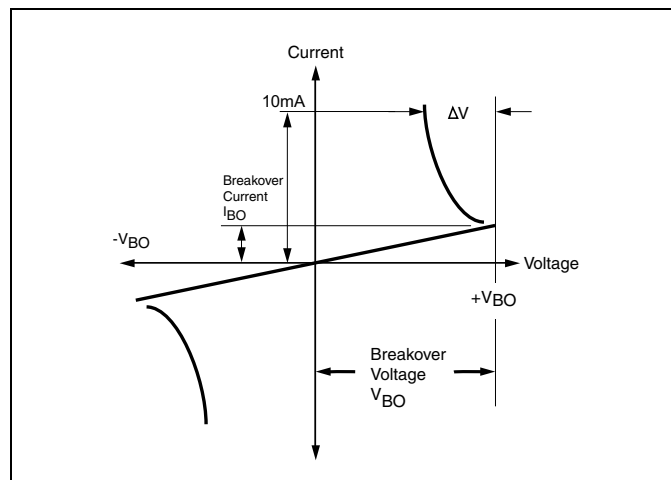


Figure 8.7 V-I Characteristics

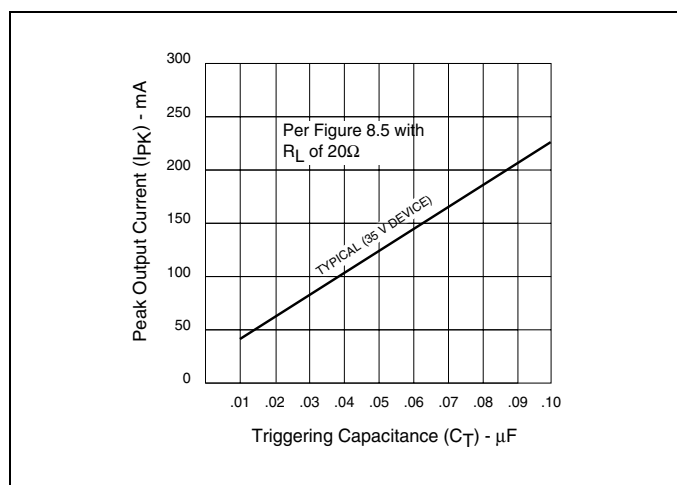


Figure 8.6 Peak Output Current vs Triggering Capacitance