

**E8** 

# HT and ST Series INS

#### **General Description**

Teccor's HT and ST Series of bilateral trigger diacs offer a range of voltage characteristics from 27 V to 70 V.

A diac semiconductor is a full-wave or bidirectional thyristor. It is triggered from a blocking state to a 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 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. Consult the factory for more information about custom design applications.

## Features

- RoHS Compliant
- Bilateral triggering device
- 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

©2004 Littelfuse, Inc. Thyristor Product Catalog

Electrical Characteristics T <sub>C</sub> = 25°C							
Part No.		V <sub>BO</sub>		ΔV <sub>BO</sub>	V <sub>BB</sub>	I <sub>BO</sub>	I <sub>TRM</sub>
		Breakover Voltage (Forward and Reverse)		Breakover Voltage Symmetry ΔV <sub>BO</sub> = [ +V <sub>BO</sub>  - -V <sub>BO</sub>  ]	Dynamic Breakback Voltage (3)   ∆V±	Peak Breakover Current at Breakover Voltage	Peak Pulse Current for 10 µs 120 PPS T <sub>A</sub> ≤40 °C
/		Volts		Volts	Volts	µAmps	Amps
DO-35	DO-214	MIN	MAX	MAX	MIN	MAX	MAX
HT-32	ST-32	27	37	3 (1)	10 (2)	25	2
HT-32A / HT-5761		28	36	2 (1)	7 at 10 mA (4)	25	2
HT-32B / HT-5761A	ST-32B	30	34	2 (1)	7 at 10 mA (4)	25	2
HT-34B	ST-34B	32	36	2 (1)	10 (2)	25	2
HT-35	ST-35	30	40	3 (1)	10 (2)	25	2
HT-36A / HT-5762	ST-36A	32	40	2 (1)	7 at 10 mA (4)	25	2
HT-36B	ST-36B	34	38	2 (1)	10 (2)	25	2
HT-40	ST-40	35	45	3 (1)	10 (2)	25	2
HT-60		56	70	4	20 (2)	25	1.5

#### **General Notes**

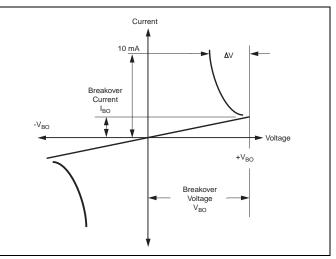
- Lead solder temperature is +230 °C for 10-second maximum; ≥1/16" (1.59 mm) from case.
- · See "Package Dimensions" section of this catalog.

### **Electrical Specification Notes**

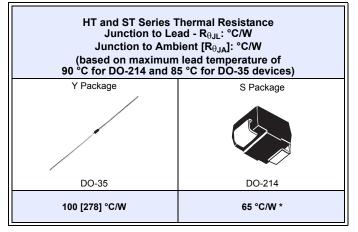
- (1) Breakover voltage symmetry as close as 1 V is available from the factory on these products.
- (2) See Figure E8.4 and Figure E8.5 for test circuit and waveforms.
- (4) See V-I Characteristics.

## **Bilateral Trigger DIAC Specifications**

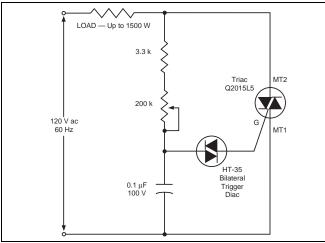
- Maximum Ratings, Absolute-Maximum Values
  - Maximum Trigger Firing Capacitance: 0.1 µF
  - Device dissipation (at  $T_A = -40$  °C to +40 °C): 250 mW for DO-35 and 300 mW for DO-214 - Derate above +40 °C:
  - 3.6 mW/°C for DO-35 and 3 mW/°C for DO-214
- Temperature Ranges
  - Storage: -40 °C to +125 °C Operating (Junction): -40 °C to +125 °C

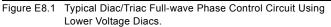






\* Mounted on 1 cm<sup>2</sup> copper foil surface; two-ounce copper foil





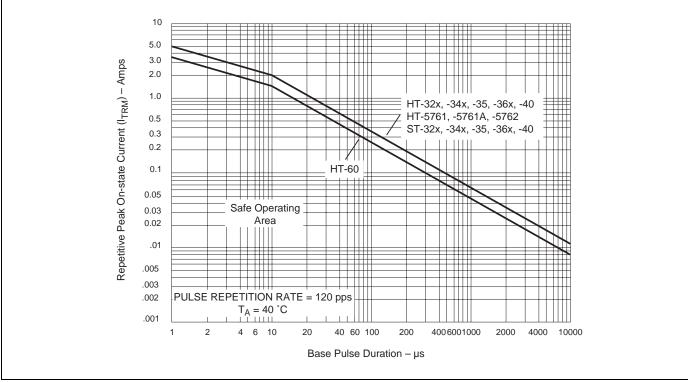
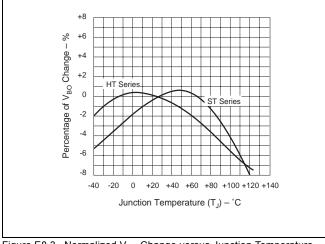
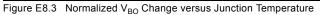


Figure E8.2 Repetitive Peak On-state Current versus Pulse Duration





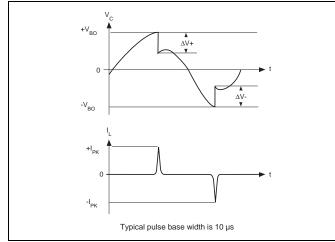


Figure E8.4 Test Circuit Waveforms (Refer to Figure E8.5.)

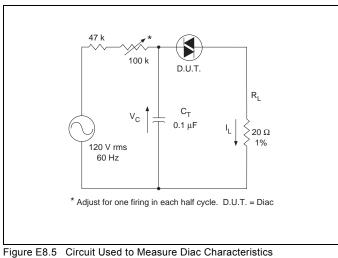


Figure E8.5 Circuit Used to Measure Diac Characteristics (Refer to Figure E8.4.)

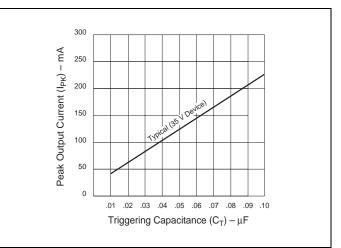


Figure E8.6 Peak Output Current versus Triggering Capacitance (Per Figure E8.5 with R<sub>L</sub> of 20  $\Omega$ )