

E.H.T. AVALANCHE VERY FAST SOFT-RECOVERY DIODES*

E.H.T. rectifier diodes in hermetically-sealed, axially-leaded glass envelope and designed for c.t.v. and monitor applications with frequencies up to 128 kHz. They are suitable for use in high-voltage application such as multipliers and especially in diode-split transformers.

Because of the small envelope, the diode should be used in a suitable insulating medium (resin, oil or SF6 gas).

Features:

- Non-snap-off characteristics;
- Capable of absorbing avalanche energy e.g. during flash-over in picture tubes.

QUICK REFERENCE DATA

		BY619	BY620	
Working reverse voltage	V_{RW} max.	12	12	kV
Repetitive peak reverse voltage	V_{RRM} max.	15	17	kV
Average forward current	$I_{F(AV)}$ max.	4		mA
Junction temperature	T_j max.	120		°C
Reverse recovery charge	Q_s <	0,4		nC
Reverse recovery time	t_{rr} typ.	100		ns

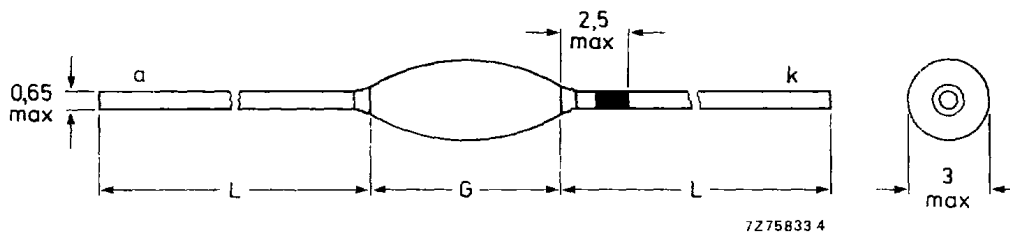
MECHANICAL DATA

Dimensions in mm

Fig. 1 SOD-61.

L = 28 min.

G = 11 max.



The BY619 cathode is indicated by a curry yellow band on the lead.
The BY620 cathode is indicated by a lilac band on the lead.

*See also "Custom made E.H.T. stacks" in section "General".

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			BY619	BY620	
Working reverse voltage	V_{RW}	max.	12	12	kV
Repetitive peak reverse voltage	V_{RRM}	max.	12	12	kV
Repetitive peak reverse voltage* $t = 1 \text{ min.}; T_{amb} = 25 \text{ }^\circ\text{C}$	V_{RRM}	max.	15	17	kV
Average forward current (averaged over any 20 ms period)	$I_{F(AV)}$	max.	4		mA
Repetitive peak forward current**	I_{FRM}	max.	500		mA
Storage temperature	T_{stg}		-65 to +120		$^\circ\text{C}$
Junction temperature	T_j	max.	120		$^\circ\text{C}$

CHARACTERISTICS

$T_j = 25 \text{ }^\circ\text{C}$ unless otherwise specified

Forward voltage ▲

$I_F = 100 \text{ mA}; T_j = 120 \text{ }^\circ\text{C}$

$V_F < 75 \text{ V}$

Reverse current

$V_R = V_{RW}; T_j = 120 \text{ }^\circ\text{C}$

$I_R < 3 \text{ } \mu\text{A}$

Reverse recovery when switched from

$I_F = 100 \text{ mA}$ to $V_R \geq 100 \text{ V}$ with
 $-dI_F/dt = 200 \text{ mA}/\mu\text{s}$

recovery charge

$Q_s < 0,4 \text{ nC}$

recovery time at $I_R = 1 \text{ mA}$

$t_{rr} \text{ typ. } 100 \text{ ns}$

fall time at $I_R = 1 \text{ mA}$

$t_f > 40 \text{ ns}$

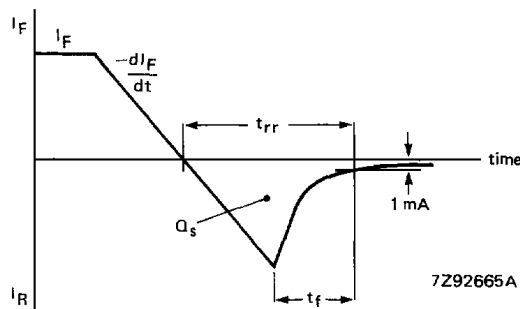


Fig. 2 Definitions of Q_s , t_{rr} and t_f .

- * Capable of withstanding the avalanche energy e.g. during flash-over in a picture tube.
- ** Capable of withstanding peak currents during flash-over in a picture tube.
- ▲ Measured under pulse conditions to avoid excessive dissipation.

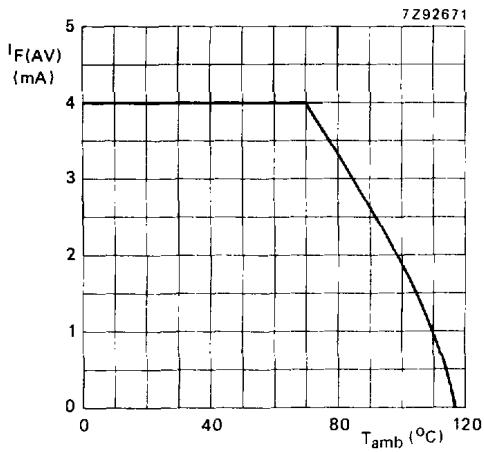


Fig. 3 Maximum permissible average forward current versus ambient temperature; the current includes losses due to reverse leakage. Diode to be mounted such that $R_{th\ j-a} < 120\ K/W$.

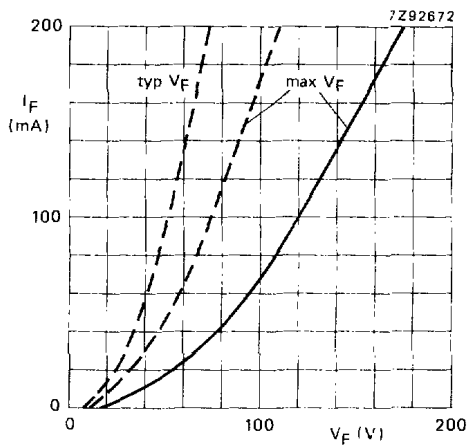


Fig. 4 — $T_j = 25\ ^\circ C$; - - - $T_j = 120\ ^\circ C$.

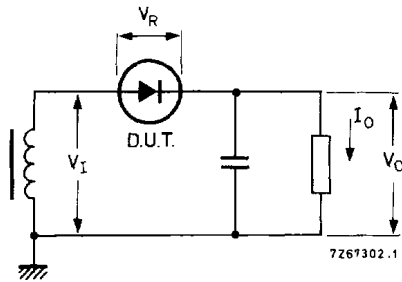


Fig. 5 Typical operation circuit.

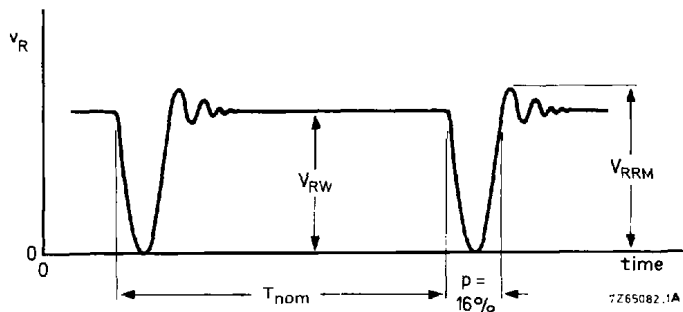


Fig. 6 Typical applied voltage.