

GOLD BONDED DIODES

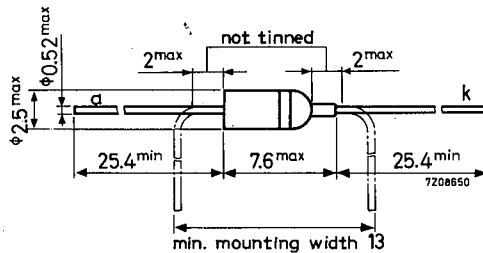
Gold bonded germanium diodes in subminiature all glass DO-7 envelope, intended for switching applications and general purposes.

		QUICK REFERENCE DATA	
		AA Y30	AA Y32
Continuous reverse voltage	V_R	max. 30	30 V
Repetitive peak reverse voltage	V_{RRM}	max. 50	30 V
Forward current (d.c.)	I_F	max. 110	110 mA
Repetitive peak forward current	I_{FRM}	max. 400	150 mA
Junction temperature	T_j	max. 75	85 °C
Forward voltage at $I_F = 150$ mA	V_F	< 1.0	1.0 V
Recovered charge when switched from $I_F = 10$ mA to $V_R = 10$ V	Q_s	< 500	150 pC

MECHANICAL DATA

Dimensions in mm

DO-7



The coloured band indicates the cathode

AA Y30 AA Y32

RATINGS (Limiting values) ¹⁾

Voltages

		AA Y30	AA Y32
Continuous reverse voltage	V_R	max. 30	30 V
Repetitive peak reverse voltage	V_{RRM}	max. 50	30 V
Non repetitive peak reverse voltage ($t < 1$ s)	V_{RSM}	max. 50	30 V

Currents

Forward current (d.c.)	I_F	max. 110	110 mA
Average rectified forward current (averaged over any 20 ms period)	I_{FAV}	max. 110	110 mA
Repetitive peak forward current	I_{FRM}	max. 400	150 mA
Non repetitive peak forward current ($t < 1$ s)	I_{FSM}	max. 500	200 mA

Temperatures

Storage temperature	AA Y30	T_{stg}	-65 to +75 °C
	AA Y32	T_{stg}	-65 to +85 °C
Junction temperature	AA Y30	T_j	max. 75 °C
	AA Y32	T_j	max. 85 °C

THERMAL RESISTANCE

From junction to ambient in free air $R_{th j-a} = 0.45$ °C/mW

¹⁾ Limiting values according to the Absolute Maximum System as defined in IEC publication 134.

CHARACTERISTICS

Forward voltage at $T_j = 25\text{ }^\circ\text{C}$

$I_F = 0.1\text{ mA}$	$V_F < 0.20\text{ V}$
$I_F = 1.0\text{ mA}$	$V_F < 0.31\text{ V}$
$I_F = 10\text{ mA}$	$V_F < 0.45\text{ V}$
$I_F = 30\text{ mA}$	$V_F < 0.60\text{ V}$
$I_F = 150\text{ mA}$	$V_F < 1.0\text{ V}$

Forward voltage at $T_j = 60\text{ }^\circ\text{C}$

$I_F = 0.1\text{ mA}$	$V_F < 0.14\text{ V}$
$I_F = 1.0\text{ mA}$	$V_F < 0.26\text{ V}$
$I_F = 10\text{ mA}$	$V_F < 0.41\text{ V}$
$I_F = 30\text{ mA}$	$V_F < 0.57\text{ V}$
$I_F = 150\text{ mA}$	$V_F < 0.99\text{ V}$

Reverse current at $T_j = 25\text{ }^\circ\text{C}$

	AA Y30	AA Y32
$V_R = 1.5\text{ V}$	$I_R < 9$	$2.5\text{ }\mu\text{A}$
$V_R = 10\text{ V}$	$I_R < 15$	$8\text{ }\mu\text{A}$
$V_R = 20\text{ V}$	$I_R < 25$	$25\text{ }\mu\text{A}$
$V_R = 25\text{ V}$	$I_R < 35$	$35\text{ }\mu\text{A}$
$V_R = 30\text{ V}$	$I_R < 50$	$70\text{ }\mu\text{A}$
$V_R = 50\text{ V}$	$I_R < 200$	$-\text{ }\mu\text{A}$

Reverse current at $T_j = 60\text{ }^\circ\text{C}$

$V_R = 1.5\text{ V}$	$I_R < 40$	$15\text{ }\mu\text{A}$
$V_R = 10\text{ V}$	$I_R < 60$	$30\text{ }\mu\text{A}$
$V_R = 20\text{ V}$	$I_R < 120$	$60\text{ }\mu\text{A}$
$V_R = 25\text{ V}$	$I_R < 150$	$100\text{ }\mu\text{A}$
$V_R = 30\text{ V}$	$I_R < 200$	$200\text{ }\mu\text{A}$
$V_R = 50\text{ V}$	$I_R < 500$	$-\text{ }\mu\text{A}$

Diode capacitance

$V_R = 1\text{ V}; f = 1\text{ MHz}$	$C_d < 1.0$	1.5 pF
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CHARACTERISTICS (continued)

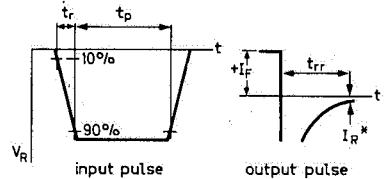
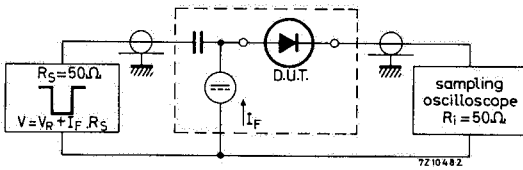
$T_j = 25\text{ }^\circ\text{C}$

Reverse recovery time when switched
from $I_F = 10\text{ mA}$ to $V_R = 1\text{ V}$; $R_L = 100\ \Omega$

Measured at $I_R = 10\%$ of $\frac{V_R}{R_L}$

AA Y30 $t_{rr} < 150\text{ ns}$
AA Y32 $t_{rr} < 50\text{ ns}$

Test circuit:



$I_{R^*} = 10\%$ of $\frac{V_R}{R_L}$

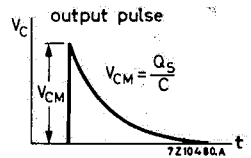
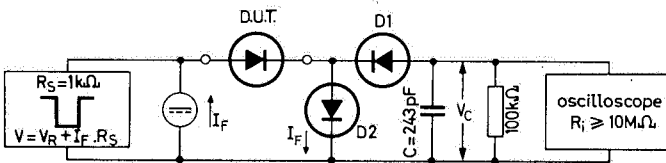
Reverse pulse: Rise time $t_r = 0.6\text{ ns}$
Pulse duration $t_p = 100\text{ ns}$
Duty cycle $\delta = 0.05$

Circuit capacitance $C < 1\text{ pF}$ ($C = \text{Oscilloscope} + \text{parasitical capacitance}$)

Recovered charge when switched
from $I_F = 10\text{ mA}$ to $V_R = 10\text{ V}$; $R_L = 1\text{ k}\Omega$

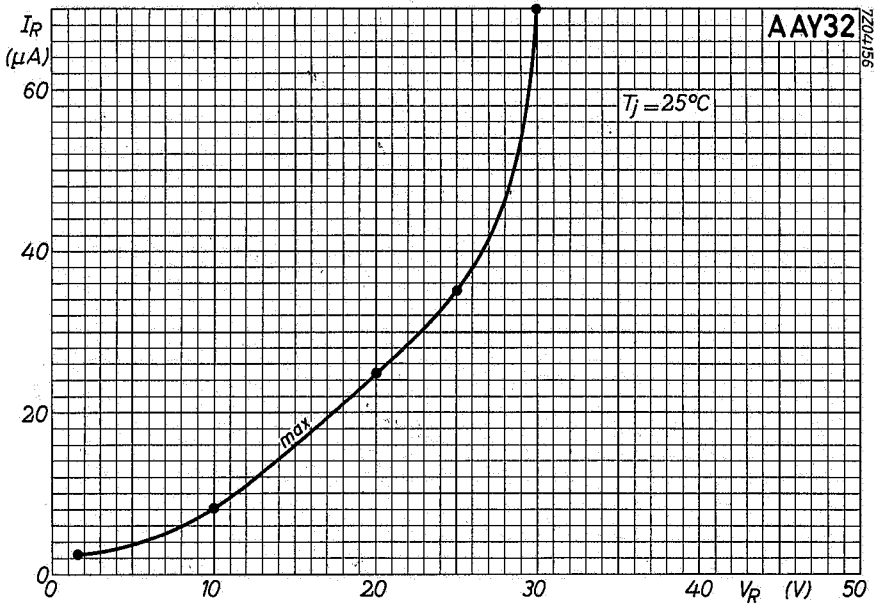
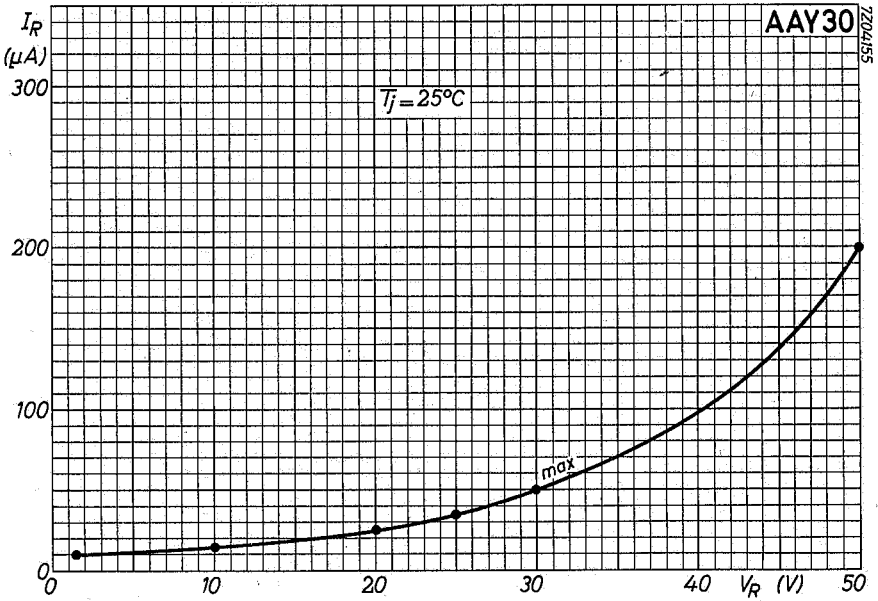
AA Y30 $Q_S < 500\text{ pC}$
AA Y32 $Q_S < 150\text{ pC}$

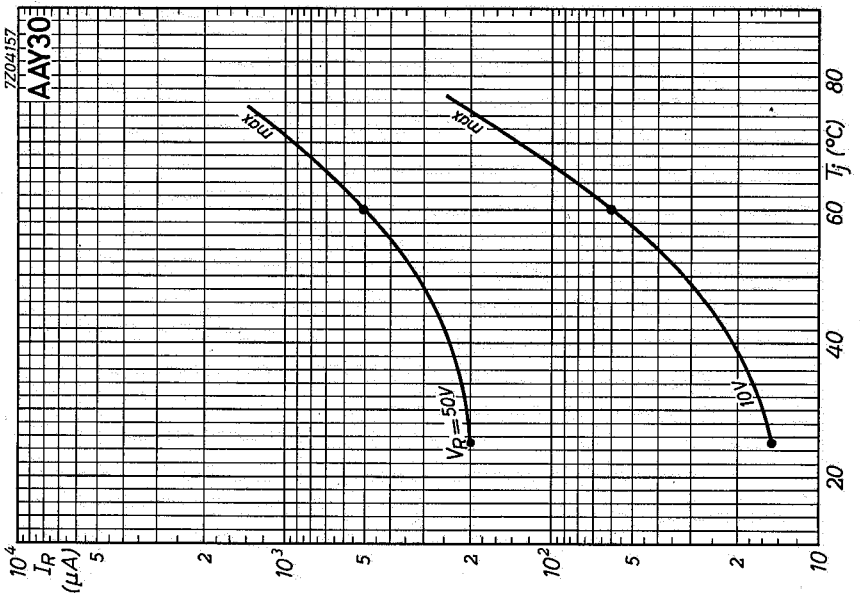
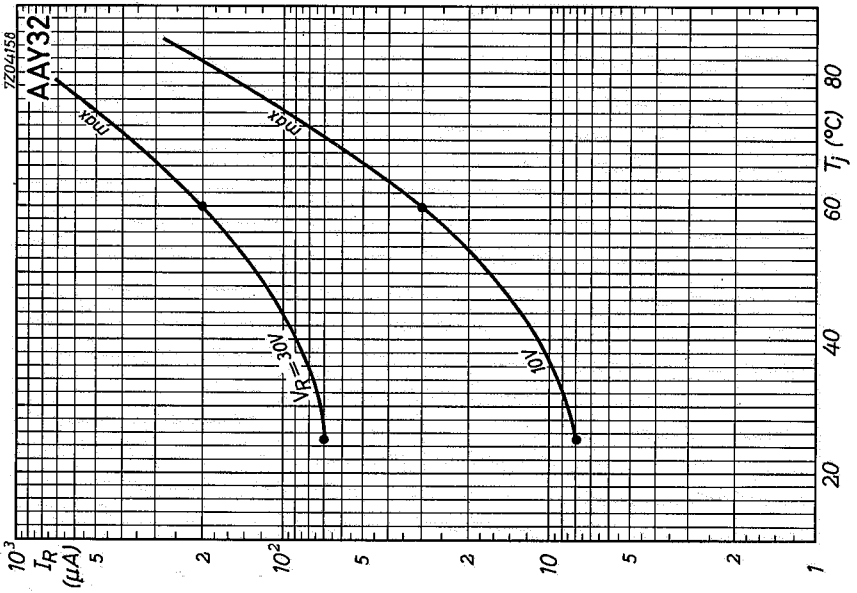
Test circuit:

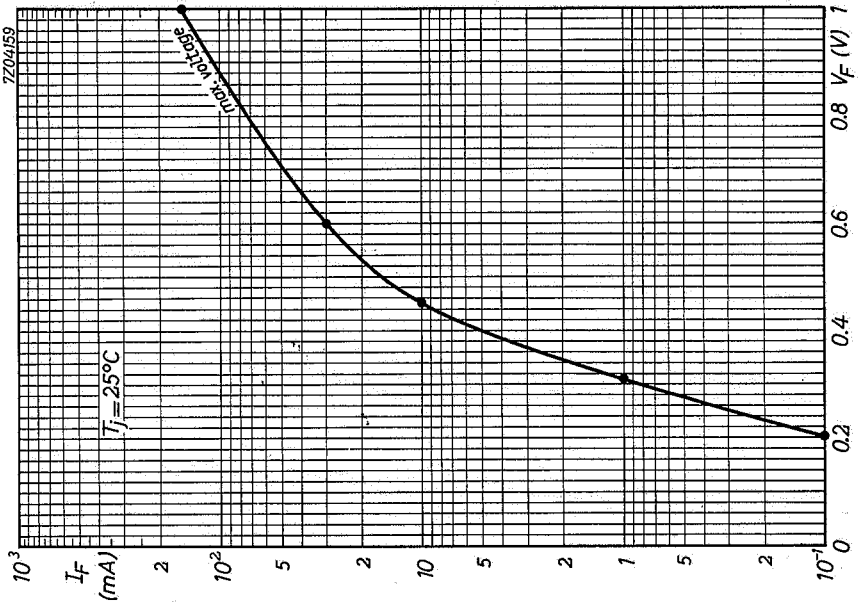


$D1 = D2 = \text{BAW62}$

Reverse pulse: Rise time $t_r = 2\text{ ns}$
Pulse duration $t_p = 0.4\ \mu\text{s}$
Duty cycle $\delta = 0.02$







AA30
AA32

