BY712 BY713 BY714

PHILIPS INTERNATIONAL

56E D

T-03-15

0055 5500 (550)

SILICON E.H.T. SOFT-RECOVERY RECTIFIER DIODES*

E.H.T. rectifier diodes in glass envelopes intended for use in high-voltage applications such as the high-voltage supply of television receivers and monitors. The devices feature non-snap-off characteristics. Because of the small envelope, the diodes should be used in a suitable insulating medium (resin, oil or special arrangements in test-cases).

QUICK REFERENCE DATA

			BY712	713	714
Working reverse voltage	v_{RW}	max.	18	20	24 kV
Repetitive peak reverse voltage	v_{RRM}	max.	22	24	30 kV
Average forward current	I _{F(AV)}	max.		3	mA
Junction temperature	Тj	max.		120	oC
Reverse recovery charge	O_s	<		1	nC
Reverse recovery time	t _{rr}	typ.		0,2	μs

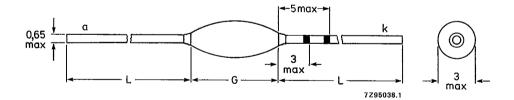
MECHANICAL DATA

Dimensions in mm

Fig. 1 SOD-61.

L = 27 min.

G = 12,5 max.



The cathode of the BY712 is indicated by two blue bands on the lead. The cathode of the BY713 is indicated by a blue band on the lead. The cathode of the BY714 is indicated by a light blue band on the lead.

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

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RATINGS

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

			BY712	713	714	_
Working reverse voltage	v_{RW}	max.	18	20	24	kV
Repetitive peak reverse voltage	v_{RRM}	max.	22	24	30 1	kV
Non-repetitive peak reverse voltage $t < 10 \text{ ms}$	V _{RSM}	max.	22	24	30	kV
Average forward current (averaged over any 20 ms period)	l _{F(AV)}	max.		3		mΑ
Repetitive peak forward current*	FRM	max.		500	ı	mΑ
Storage temperature	T_{stg}		-6	20	οС	
Junction temperature	Τj	max.		120	•	оС
CHARACTERISTICS						
Forward voltage**						
I _F = 50 mA; T _j = 120 °C	٧F	<		76	,	V
Reverse current $V_R = V_{RW}$; $T_j = 120 {}^{\circ}\text{C}$	IR	<		3	1	μΑ
Reverse recovery when switched from $I_F = 100 \text{ mA}$ to $V_R \ge 100 \text{ V}$ with $-dI_F/dt = 200 \text{ mA/}\mu\text{s}$; $T_j = 25 ^{\circ}\text{C}$						
recovery charge	$oldsymbol{o}_s$	•		1		nC
recovery time	t _{rr}	typ.		0,2	i	μs
fall time	t _f	>		0,1	i	μS

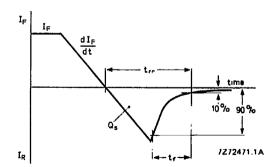
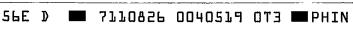


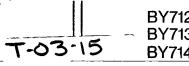
Fig. 2 Definitions of Q_s , t_{rr} and t_f .

^{*} The device can withstand peak currents occurring during flashover in a picture tube.

^{**} Measured under pulse conditions to avoid excessive dissipation.



Silicon E.H.T. soft-recovery rectifier diodes



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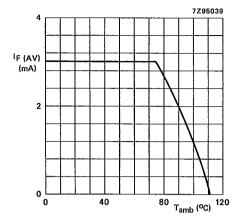


Fig. 3 Maximum permissible average forward current as a function of ambient temperature. $V_R = V_{RWmax}$. The diode should be mounted in such a way that $R_{th\,j-a} \leqslant$ 120 K/W.

Fig. 4 ---- $T_i = 25 \, {}^{\circ}\text{C}; ---- T_i = 120 \, {}^{\circ}\text{C}.$

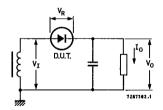


Fig. 5 Typical operation circuit.

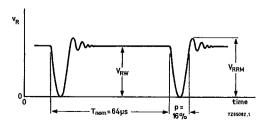


Fig. 6 Typical applied voltage.