

Silicon Diode

BYG85B

100V/980mA

DATASHEET

OEM – Philips

Source: Philips Databook 1999

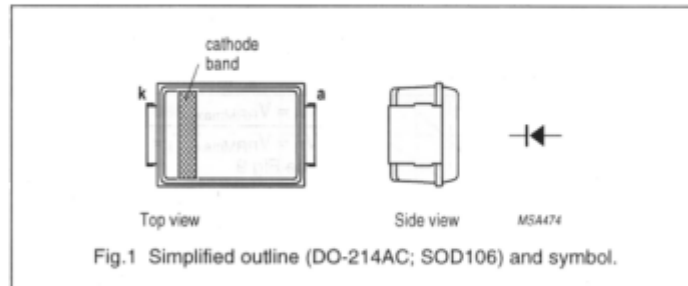
Fast soft-recovery rectifier**BYG85B****FEATURES**

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- UL 94V-O classified plastic package
- Shipped in 12 mm embossed tape.

DESCRIPTION

DO-214AC surface mountable package with glass passivated chip.

The well-defined void-free case is of a transfer-moulded thermo-setting plastic.

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage		–	100	V
V_R	continuous reverse voltage		–	100	V
$I_{F(AV)}$	average forward current	$T_{tp} = 100\text{ }^{\circ}\text{C}$; averaged over any 20 ms period; see Figs 2 and 7	–	2.5	A
$I_{F(AV)}$	average forward current	$T_{amb} = 60\text{ }^{\circ}\text{C}$; Al_2O_3 PCB mounting (see Fig.11); averaged over any 20 ms period; see Fig.3	–	1.3	A
$I_{F(AV)}$	average forward current	$T_{amb} = 60\text{ }^{\circ}\text{C}$; epoxy PCB mounting (see Fig.11); averaged over any 20 ms period; see Fig.3	–	0.98	A
I_{FRM}	repetitive peak forward current	$T_{tp} = 100\text{ }^{\circ}\text{C}$; see Fig.3	–	23	A
I_{FRM}	repetitive peak forward current	$T_{amb} = 60\text{ }^{\circ}\text{C}$; Al_2O_3 PCB mounting; see Fig.5	–	12	A
I_{FRM}	repetitive peak forward current	$T_{amb} = 60\text{ }^{\circ}\text{C}$; epoxy PCB mounting; see Fig.6	–	8.5	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sine wave; $T_j = T_{j\text{max}}$ prior to surge; $V_R = V_{RRM\text{max}}$	–	35	A
T_{stg}	storage temperature		–65	+175	$^{\circ}\text{C}$
T_j	junction temperature		–65	+175	$^{\circ}\text{C}$

Fast soft-recovery rectifier

BYG85B

ELECTRICAL CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 2\text{ A}; T_j = T_{j,max}$; see Fig.8	–	–	0.78	V
		$I_F = 2\text{ A}$; see Fig.8	–	–	0.98	V
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$	120	–	–	V
I_R	reverse current	$V_R = V_{RRMmax}$; see Fig.9	–	–	5	μA
		$V_R = V_{RRMmax}; T_j = 165\text{ °C}$; see Fig.9	–	–	150	μA
t_{rr}	reverse recovery time	when switched from $I_F = 0.5\text{ A}$ to $I_R = 1\text{ A}$; measured at $I_R = 0.25\text{ A}$; see Fig.13	–	–	12.5	ns
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.10	–	110	–	pF
$\left \frac{dI_R}{dt} \right $	maximum slope of reverse recovery current	when switched from $I_F = 1\text{ A}$ to $V_R \geq 30\text{ V}$ and $dI_F/dt = -1\text{ A}/\mu\text{s}$; see Fig.12	–	–	2	$\text{A}/\mu\text{s}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		25	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W
		note 2	150	K/W

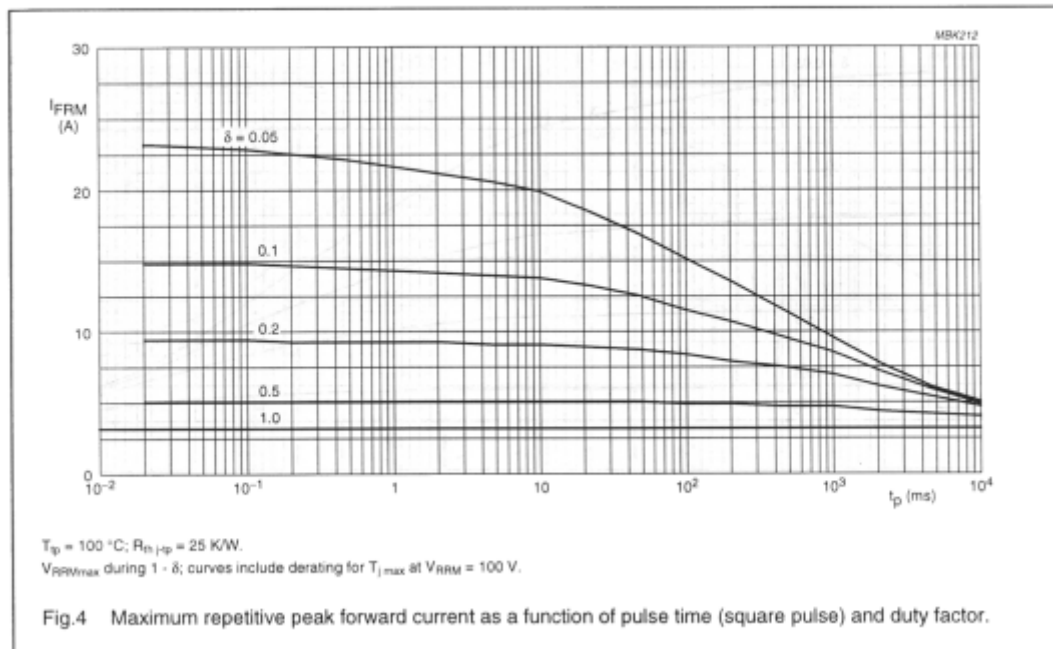
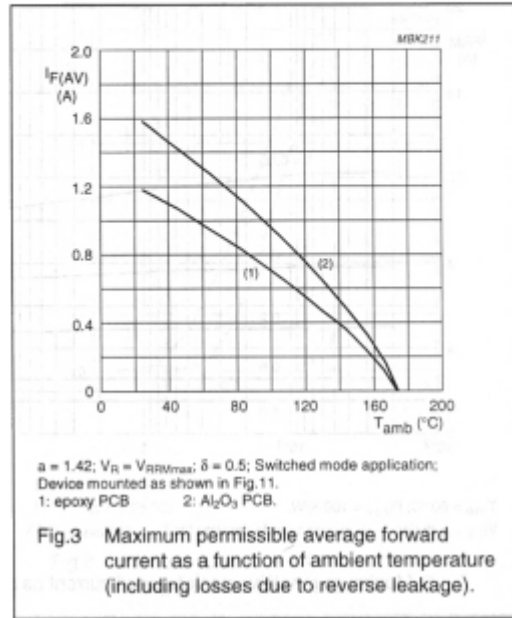
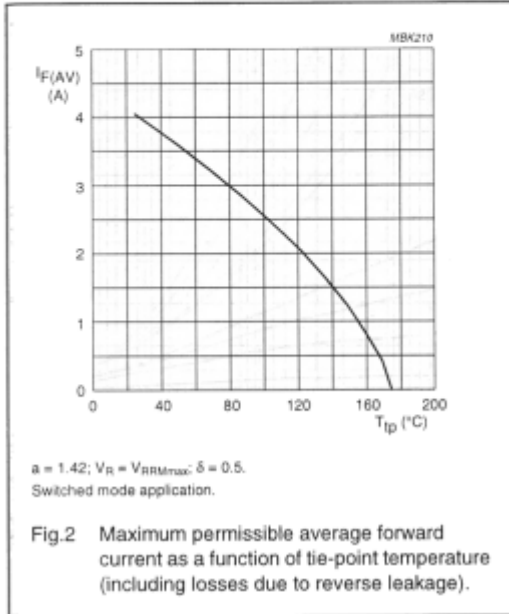
Notes

1. Device mounted on Al_2O_3 printed-circuit board, 0.7 mm thick; thickness of copper $\geq 35\ \mu\text{m}$, see Fig.11.
2. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper $\geq 40\ \mu\text{m}$, see Fig.11.
For more information please refer to the 'General Part of associated Handbook'.

Fast soft-recovery rectifier

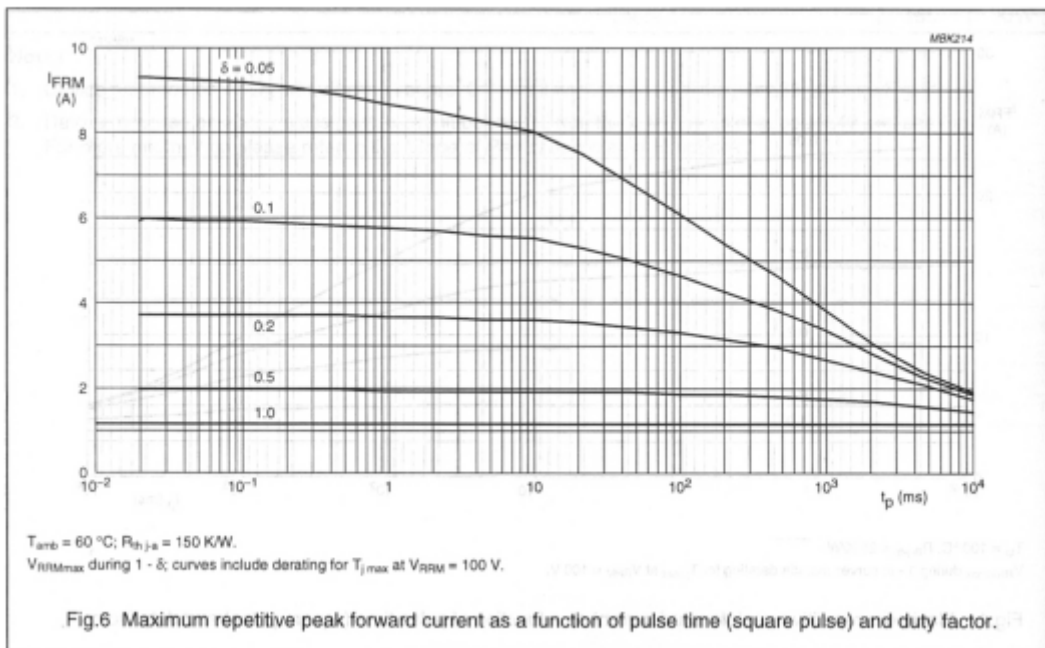
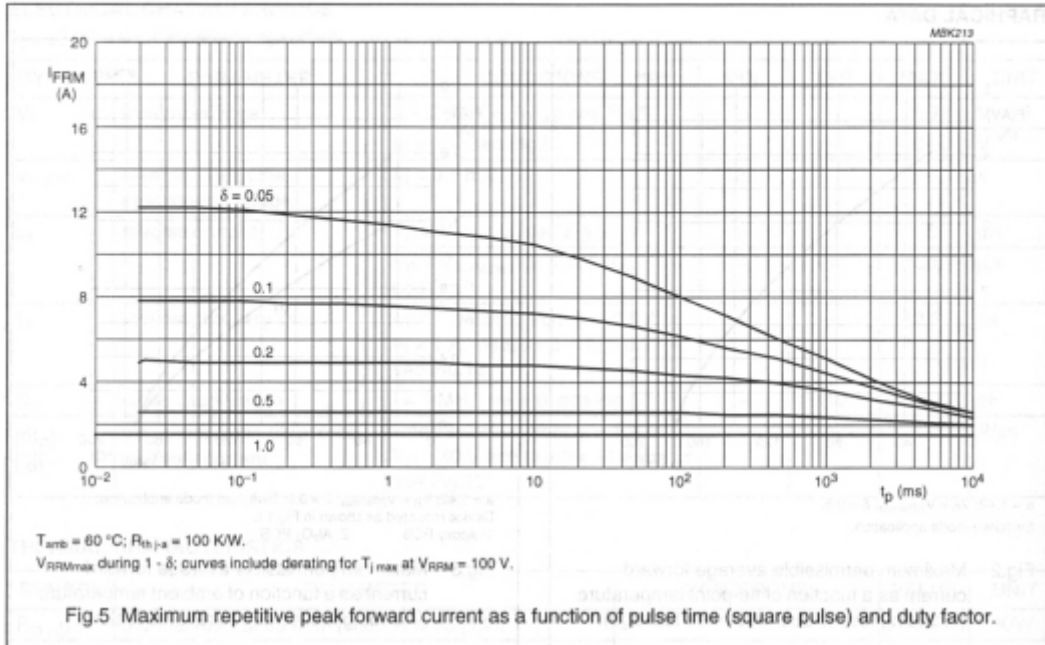
BYG85B

GRAPHICAL DATA



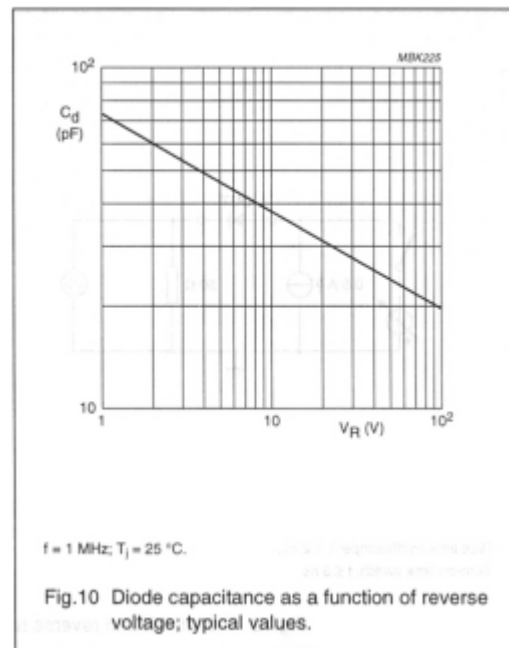
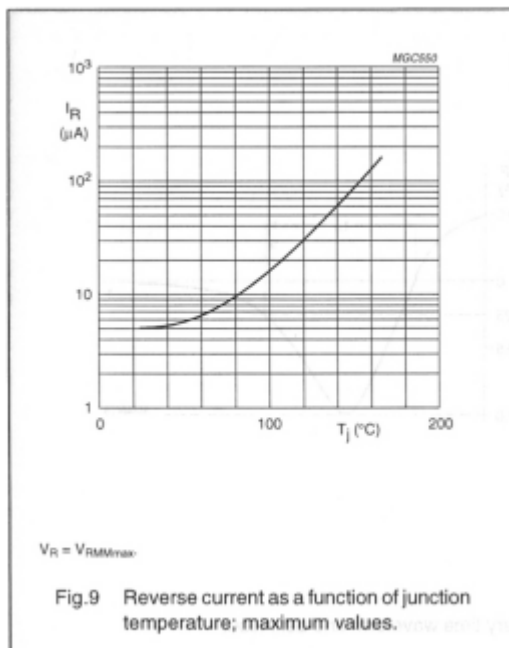
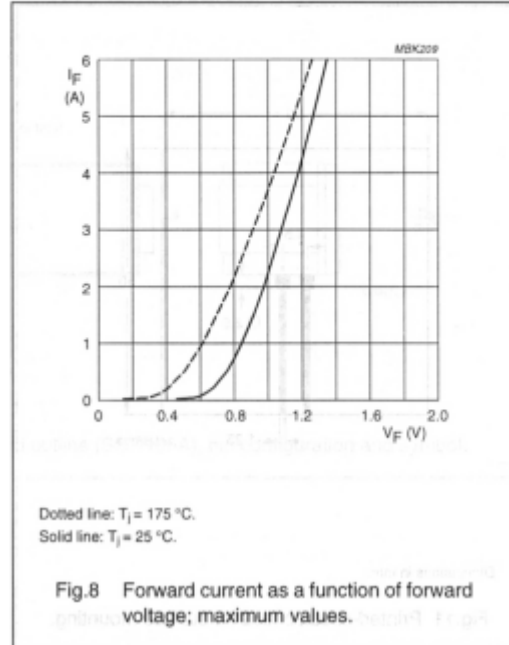
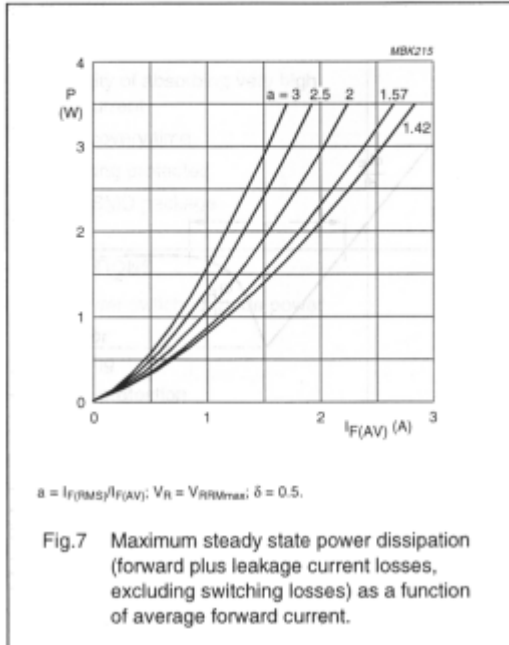
Fast soft-recovery rectifier

BYG85B



Fast soft-recovery rectifier

BYG85B



Fast soft-recovery rectifier

Fast soft-recovery rectifier BYG85B

