

# Silicon Diode

## **BY527**

800V/2A

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Controlled avalanche rectifier****BY527****FEATURES**

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- Available in ammo-pack.

**DESCRIPTION**

Rugged glass package, using a high temperature alloyed construction.

This package is hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

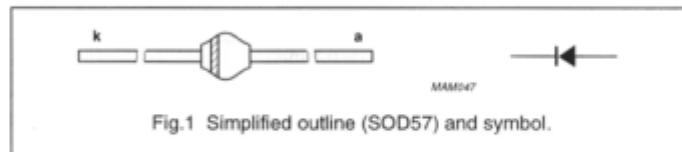


Fig.1 Simplified outline (SOD57) and symbol.

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	1250	V
$V_{RWM}$	crest working reverse voltage		–	800	V
$V_R$	continuous reverse voltage		–	800	V
$I_{F(AV)}$	average forward current	$T_{ip} = 45\text{ °C}$ ; lead length = 10 mm; averaged over any 20 ms period; see Figs 2 and 4	–	2.0	A
		$T_{amb} = 80\text{ °C}$ ; PCB mounting (see Fig.9); averaged over any 20 ms period; see Figs 3 and 4	–	0.8	A
$I_{FSM}$	non-repetitive peak forward current	$t = 10\text{ ms}$ half sinewave	–	50	A
$E_{RSM}$	non-repetitive peak reverse avalanche energy	$L = 120\text{ mH}$ ; $T_j = T_{jmax}$ prior to surge; inductive load switched off	–	20	mJ
$T_{stg}$	storage temperature		–65	+175	°C
$T_j$	junction temperature	see Fig.5	–65	+175	°C

## Controlled avalanche rectifier

BY527

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 1\text{ A}$ ; $T_j = T_{j\text{max}}$ ; see Fig.6	–	–	0.8	V
		$I_F = 1\text{ A}$ ; see Fig.6	–	–	1.0	V
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$	1250	–	–	V
$I_R$	reverse current	$V_R = V_{RWM\text{max}}$ ; see Fig.7	–	–	1	$\mu\text{A}$
		$V_R = V_{RWM\text{max}}$ ; $T_j = 165\text{ °C}$ ; see Fig.7	–	–	150	$\mu\text{A}$
$t_{rr}$	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.10	–	3	–	$\mu\text{s}$
$C_d$	diode capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.8	–	50	–	pF

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-tp}}$	thermal resistance from junction to tie-point	lead length = 10 mm	46	K/W
$R_{th\ j\text{-a}}$	thermal resistance from junction to ambient	note 1	100	K/W

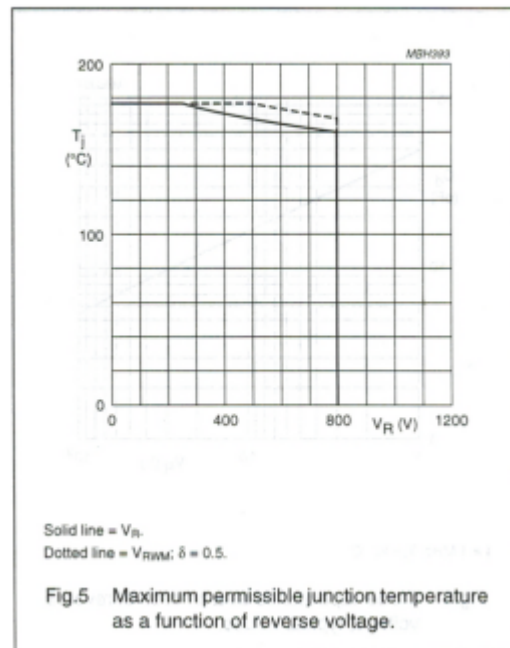
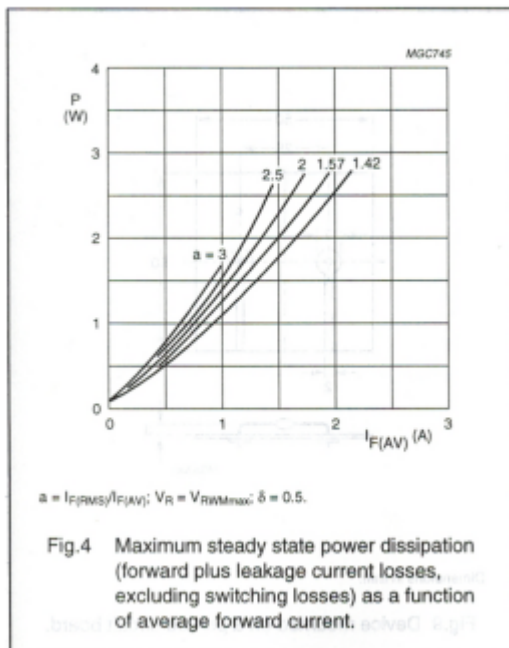
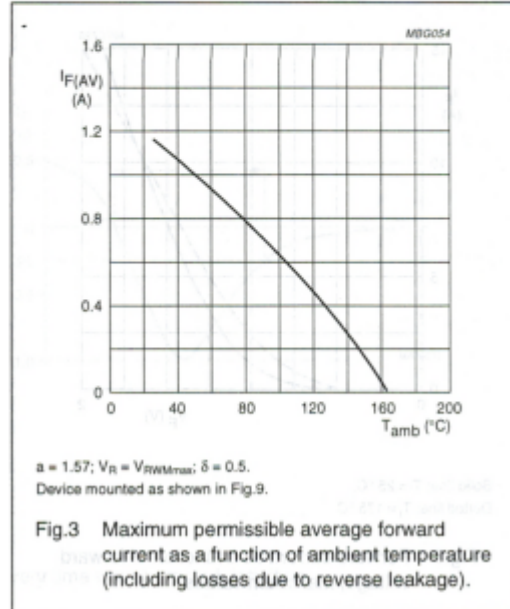
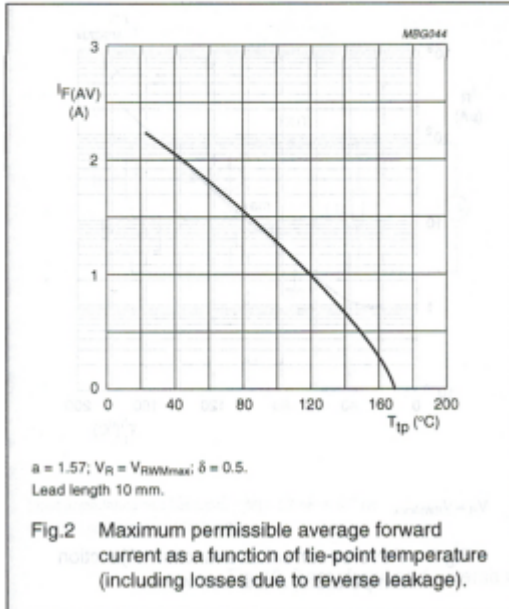
**Note**

1. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper  $\geq 40\ \mu\text{m}$ , see Fig.9. For more information please refer to the "General Part of Handbook SC01".

Controlled avalanche rectifier

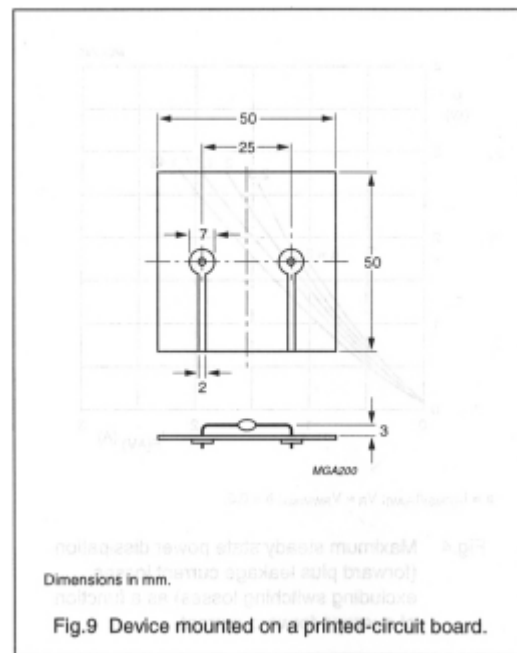
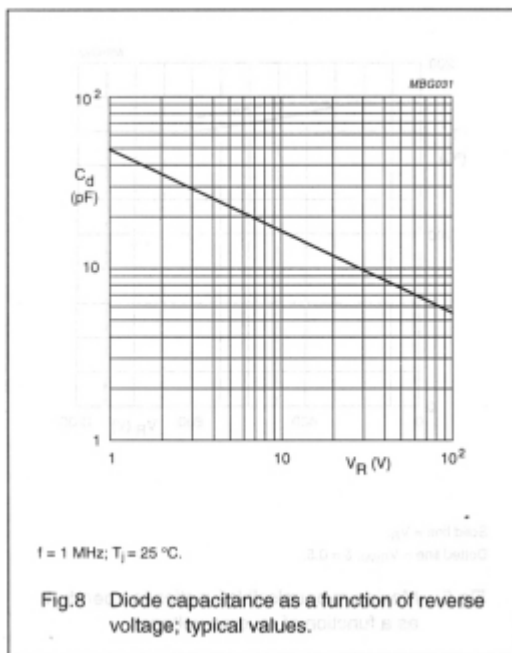
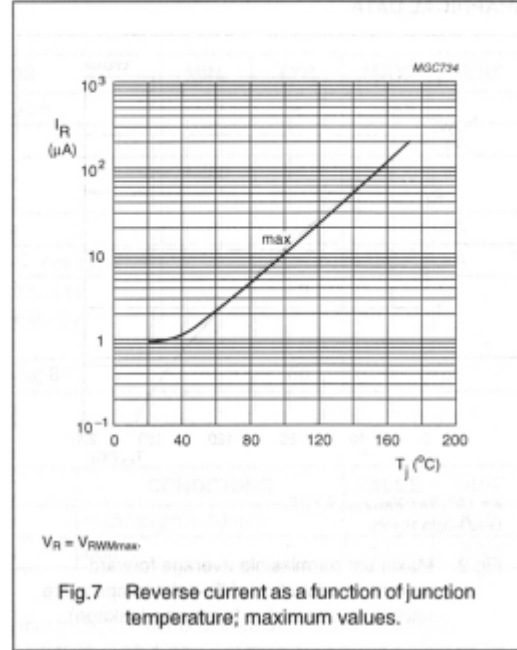
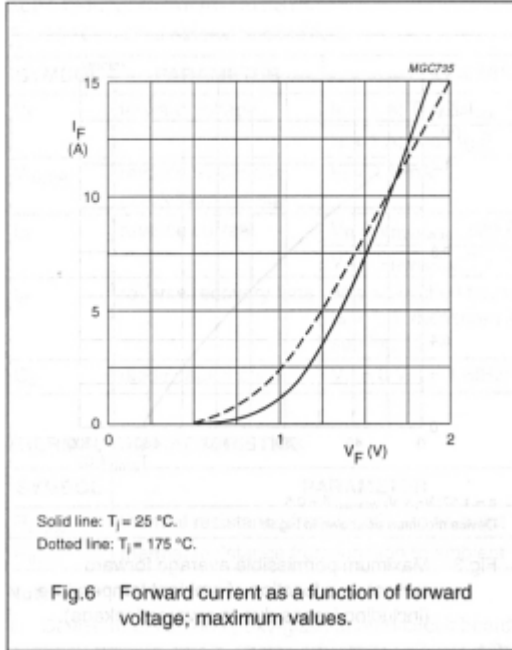
BY527

GRAPHICAL DATA



Controlled avalanche rectifier

BY527



## Controlled avalanche rectifier

BY527

