

Silicon Diode

BYM26E

1000V/2.3A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

Fast soft-recovery controlled avalanche rectifiers

BYM26 series

FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- Available in ammo-pack
- Also available with preformed leads for easy insertion.

DESCRIPTION

Rugged glass SOD64 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.

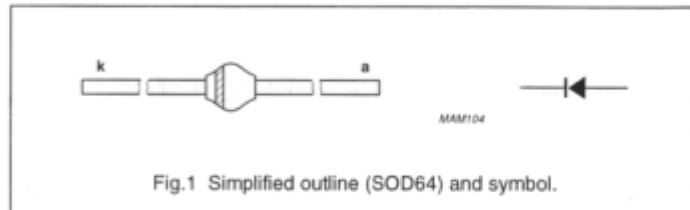


Fig.1 Simplified outline (SOD64) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage				
	BYM26A		–	200	V
	BYM26B		–	400	V
	BYM26C		–	600	V
	BYM26D		–	800	V
	BYM26E		–	1000	V
	BYM26F BYM26G		–	1200 1400	V
V_R	continuous reverse voltage				
	BYM26A		–	200	V
	BYM26B		–	400	V
	BYM26C		–	600	V
	BYM26D		–	800	V
	BYM26E		–	1000	V
	BYM26F BYM26G		–	1200 1400	V
$I_{F(AV)}$	average forward current	$T_{ip} = 55\text{ °C}$; lead length = 10 mm; see Figs 2 and 3; averaged over any 20 ms period; see also Figs 10 and 11			
	BYM26A to E BYM26F and G		–	2.30 2.40	A
$I_{F(AV)}$	average forward current	$T_{amb} = 65\text{ °C}$; PCB mounting (see Fig.19); see Figs 4 and 5; averaged over any 20 ms period; see also Figs 10 and 11			
	BYM26A to E BYM26F and G		–	1.05 1.00	A

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SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{FRM}	repetitive peak forward current	$T_{ip} = 55\text{ °C}$; see Figs 6 and 7	-	19	A
	BYM26A to E			21	A
I_{FRM}	repetitive peak forward current	$T_{amb} = 65\text{ °C}$; see Figs 8 and 9	-	8.0	A
	BYM26A to E			8.5	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sine wave; $T_j = T_{jmax}$ prior to surge; $V_R = V_{RRMmax}$	-	45	A
E_{RSM}	non-repetitive peak reverse avalanche energy	$L = 120\text{ mH}$; $T_j = T_{jmax}$ prior to surge; inductive load switched off	-	10	mJ
T_{stg}	storage temperature		-65	+175	°C
T_j	junction temperature	see Figs 12 and 13	-65	+175	°C

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT				
V_F	forward voltage	$I_F = 2\text{ A}$; $T_j = T_{jmax}$; see Figs 14 and 15	-	-	1.34	V				
	BYM26A to E				1.34	V				
V_F	forward voltage	$I_F = 2\text{ A}$; see Figs 14 and 15	-	-	2.65	V				
	BYM26A to E				2.30	V				
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$								
	BYM26A						300	-	-	V
	BYM26B						500	-	-	V
	BYM26C						700	-	-	V
	BYM26D						900	-	-	V
	BYM26E						1100	-	-	V
	BYM26F						1300	-	-	V
	BYM26G						1500	-	-	V
I_R	reverse current	$V_R = V_{RRMmax}$; see Fig.16	-	-	10	µA				
		$V_R = V_{RRMmax}$; $T_j = 165\text{ °C}$; see Fig.16	-	-	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.20	-	-	30	ns				
					BYM26A to C	75	ns			
					BYM26D and E	150	ns			
	BYM26F and G									

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
C_d	diode capacitance	$f = 1 \text{ MHz}$; $V_R = 0 \text{ V}$; see Figs 17 and 18	-	85	-	pF
	BYM26A to C					
	BYM26D and E					
	BYM26F and G		-	65	-	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.21	-	-	7	$\text{A}/\mu\text{s}$
	BYM26A to C					
	BYM26D and E					
	BYM26F and G		-	-	5	$\text{A}/\mu\text{s}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}tp}$	thermal resistance from junction to tie-point	lead length = 10 mm	25	K/W
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	75	K/W

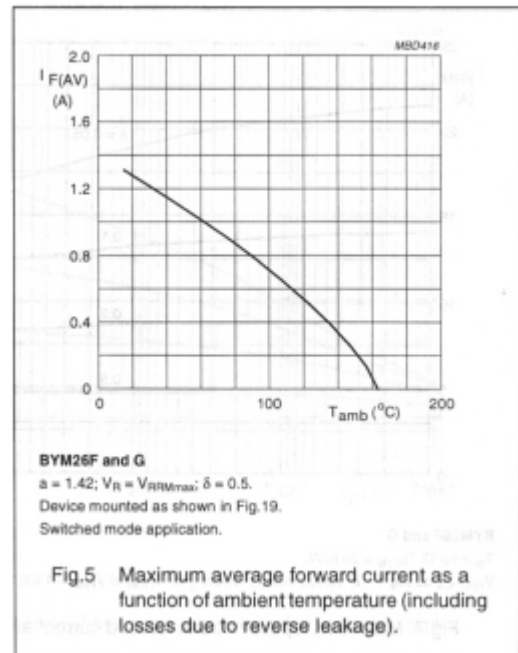
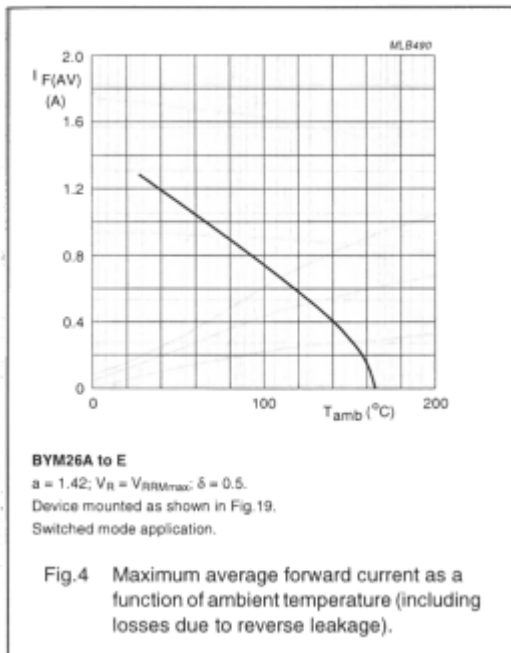
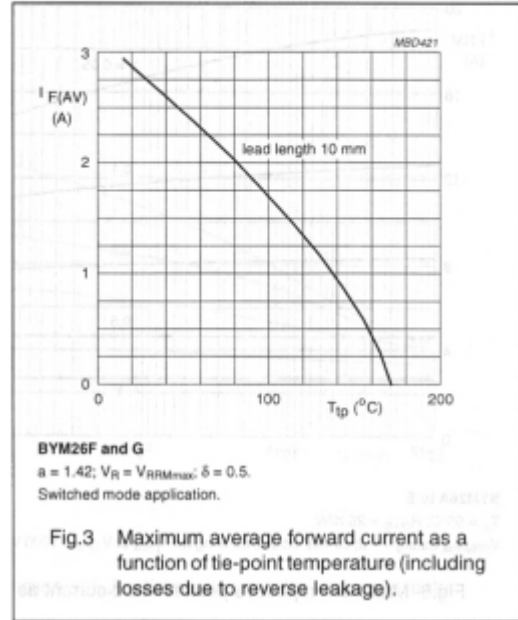
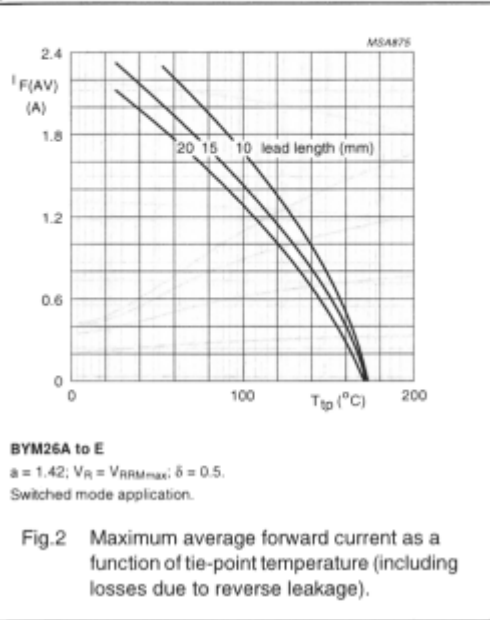
Note

1. Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer $\geq 40 \mu\text{m}$, see Fig.19. For more information please refer to the 'General Part of Handbook SC01'.

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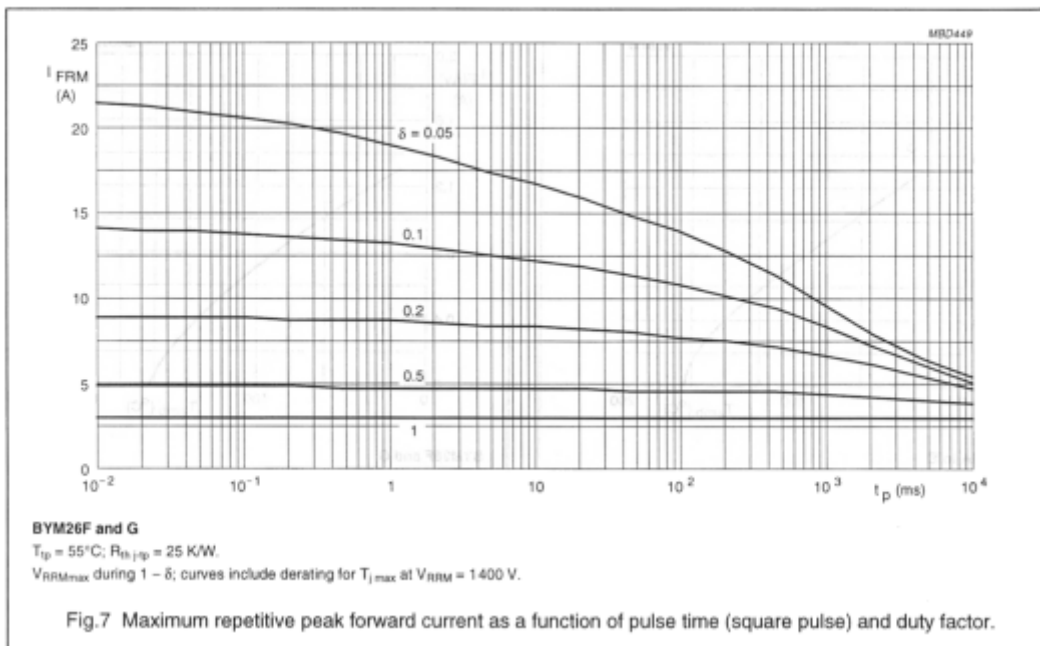
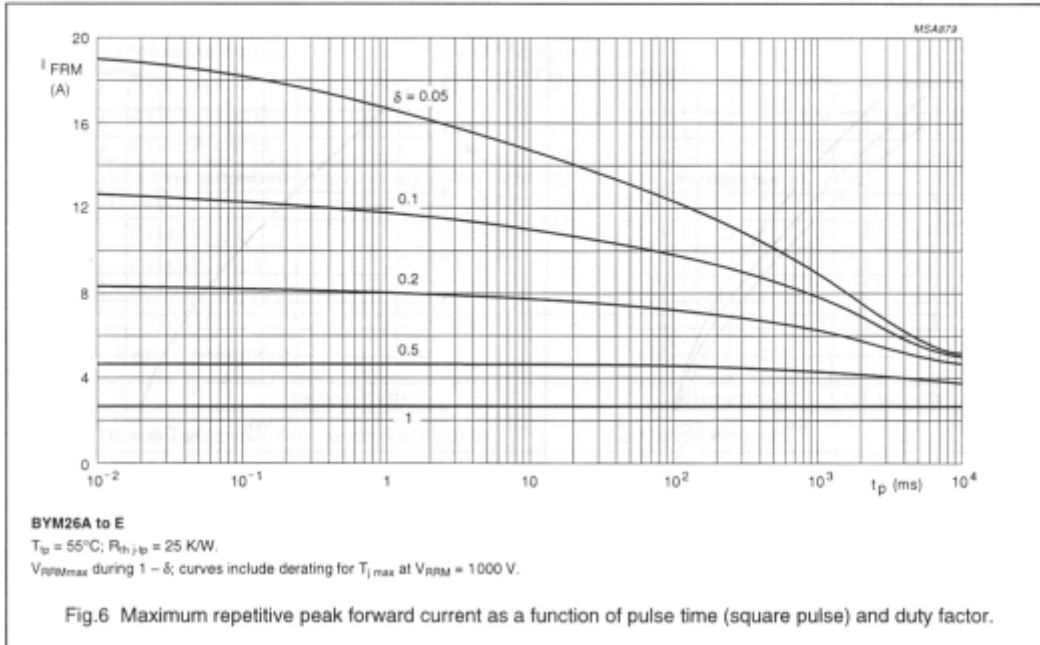
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GRAPHICAL DATA



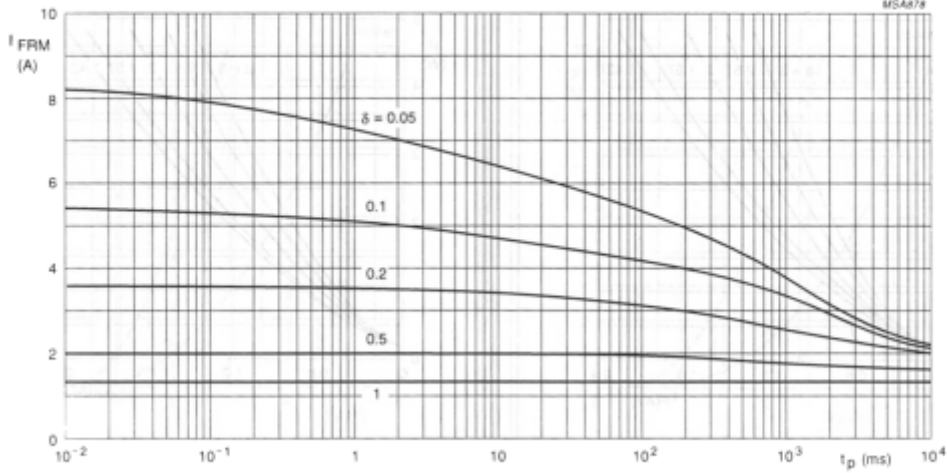
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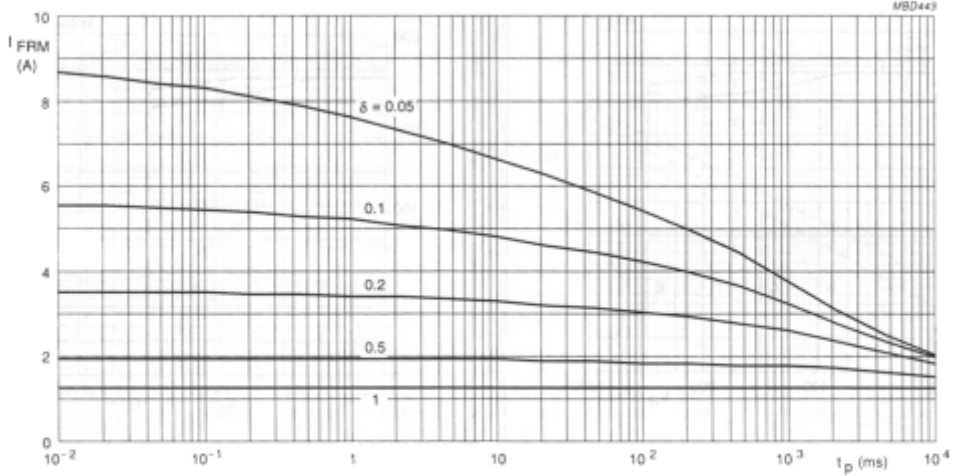


BYM26A to E

$T_{amb} = 65\text{ }^{\circ}\text{C}$; $R_{th(j-a)} = 75\text{ K/W}$.

V_{RRMmax} during $1 - \delta$; curves include derating for T_{jmax} at $V_{RRM} = 1000\text{ V}$.

Fig.8 Maximum repetitive peak forward current as a function of pulse time (square pulse) and duty factor.



BYM26F and G

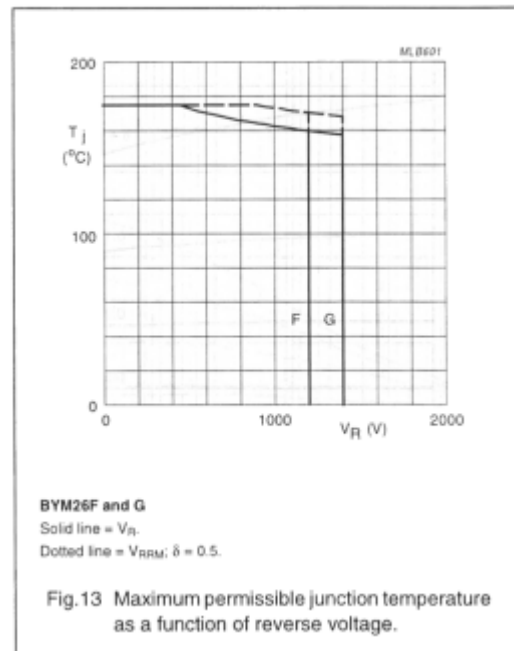
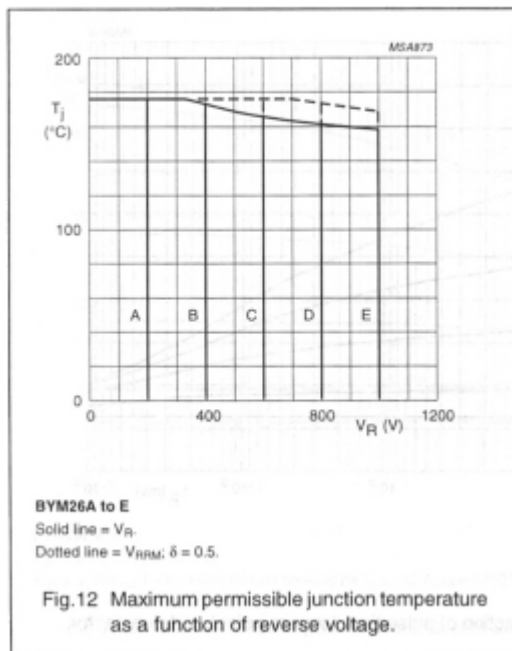
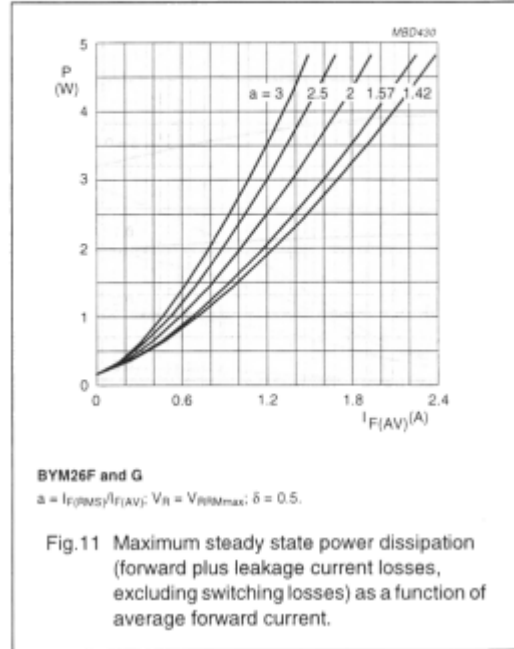
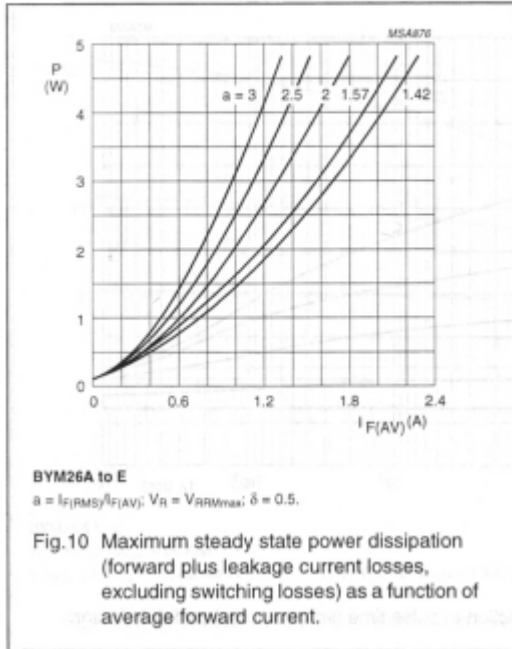
$T_{amb} = 65\text{ }^{\circ}\text{C}$; $R_{th(j-a)} = 75\text{ K/W}$.

V_{RRMmax} during $1 - \delta$; curves include derating for T_{jmax} at $V_{RRM} = 1400\text{ V}$.

Fig.9 Maximum repetitive peak forward current as a function of pulse time (square pulse) and duty factor.

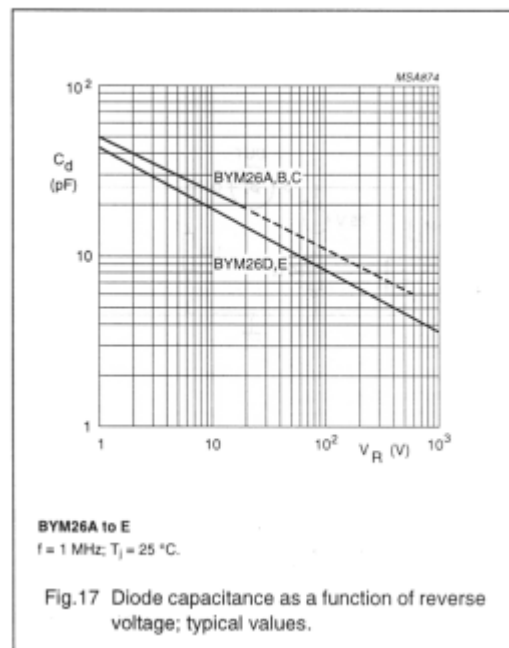
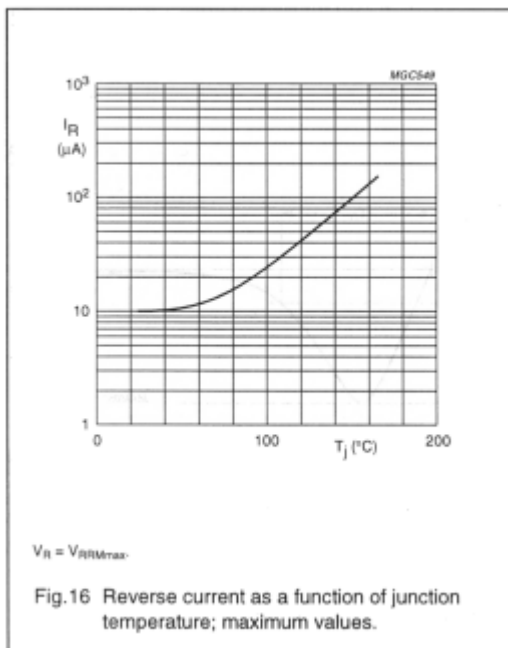
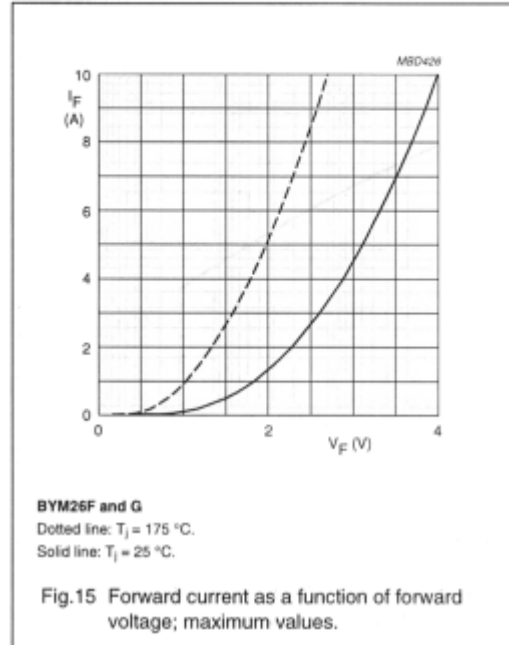
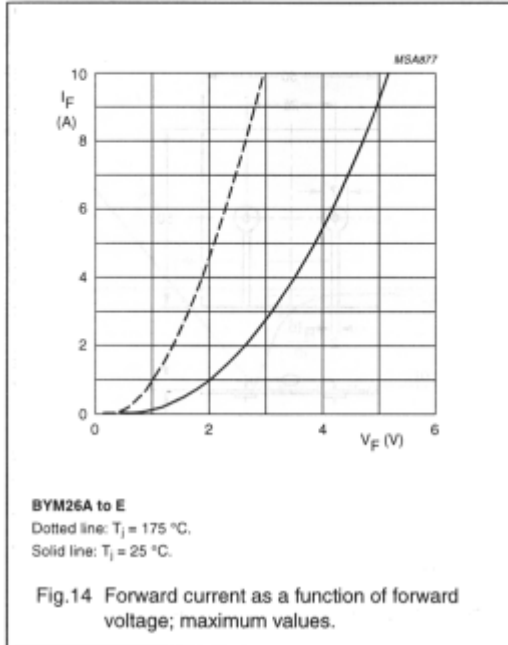
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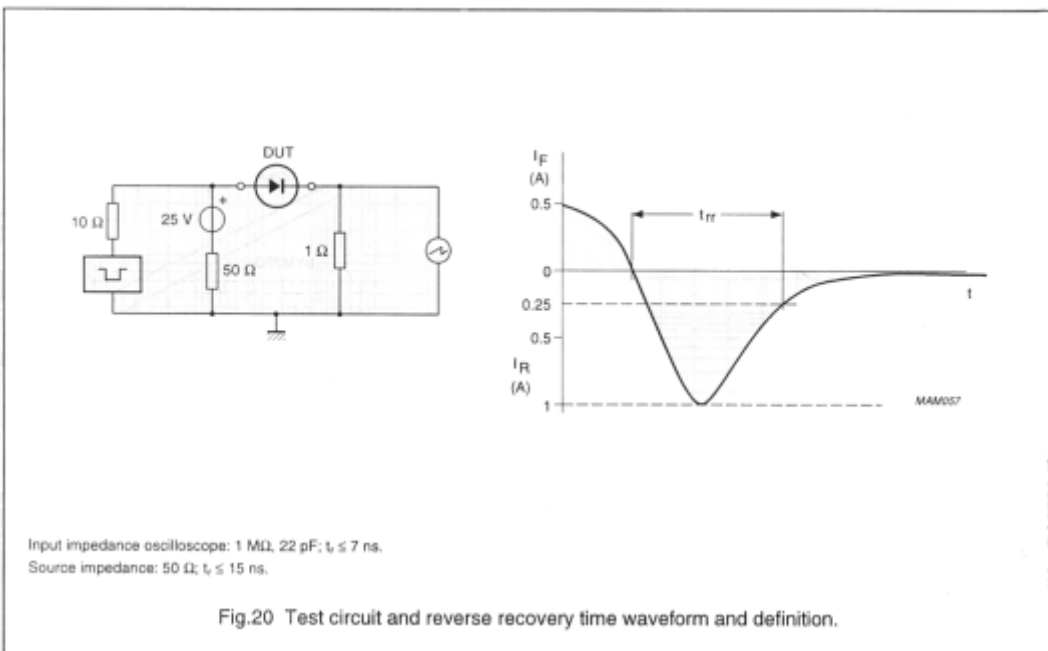
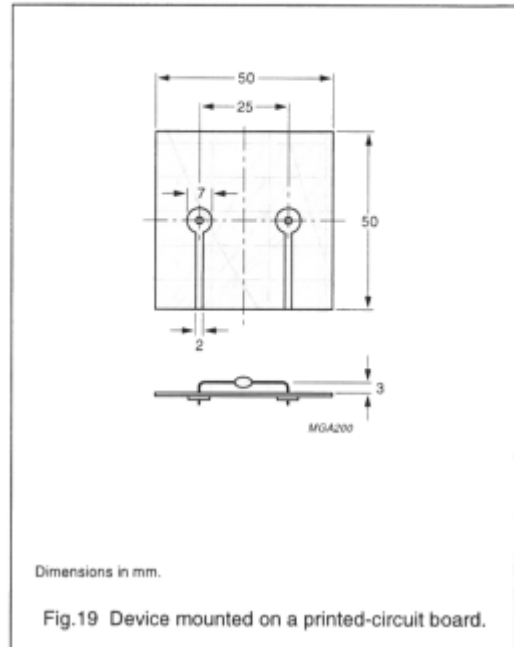
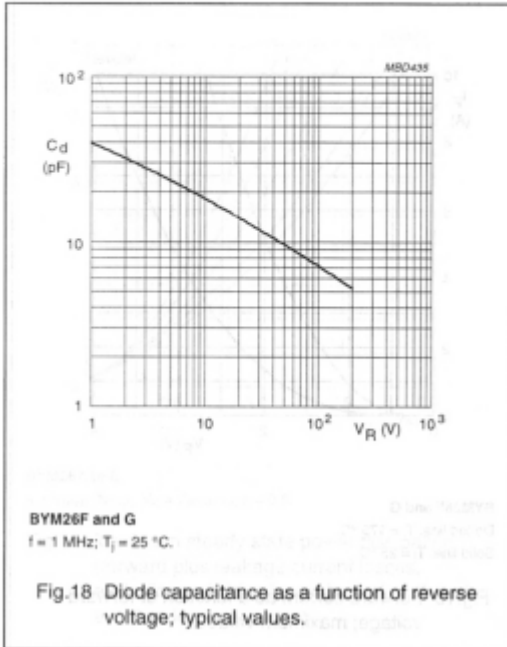
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