

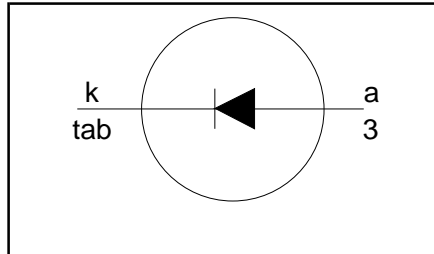
**Rectifier diodes
ultrafast, rugged**

BYV79EB series

FEATURES

- Low forward volt drop
- Fast switching
- Soft recovery characteristic
- Reverse surge capability
- High thermal cycling performance
- Low thermal resistance

SYMBOL



QUICK REFERENCE DATA

$V_R = 150\text{ V} / 200\text{ V}$
$V_F \leq 0.9\text{ V}$
$I_{F(AV)} = 14\text{ A}$
$I_{RRM} = 0.2\text{ A}$
$t_{tr} \leq 30\text{ ns}$

GENERAL DESCRIPTION

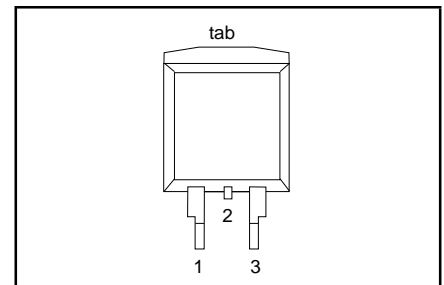
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

The BYV79EB series is supplied in the surface mounting SOT404 package.

PINNING

PIN	DESCRIPTION
1	no connection
2	cathode ¹
3	anode
tab	cathode

SOT404



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				BYV79EB		
V_{RRM}	Peak repetitive reverse voltage	$T_{mb} \leq 145^\circ\text{C}$	-	-150	-200	V
V_{RWM}	Crest working reverse voltage		-	150	200	V
V_R	Continuous reverse voltage		-	150	200	V
$I_{F(AV)}$	Average rectified forward current ²	square wave $\delta = 0.5; T_{mb} \leq 120^\circ\text{C}$	-	14		A
I_{FRM}	Repetitive peak forward current per diode	$t = 25\ \mu\text{s}; \delta = 0.5;$ $T_{mb} \leq 120^\circ\text{C}$	-	28		A
I_{FSM}	Non-repetitive peak forward current	$t = 10\text{ ms}$	-	150		A
		$t = 8.3\text{ ms}$ sinusoidal; with reapplied $V_{RRM(max)}$	-	160		A
I_{RRM}	Repetitive peak reverse current	$t_p = 2\ \mu\text{s}; \delta = 0.001$	-	0.2		A
I_{RSM}	Non-repetitive peak reverse current	$t_p = 100\ \mu\text{s}$	-	0.2		A
T_{stg}	Storage temperature		-40	150		$^\circ\text{C}$
T_j	Operating junction temperature		-	150		$^\circ\text{C}$

1. It is not possible to make connection to pin 2 of the SOT404 package
2. Neglecting switching and reverse current losses.

ESD LIMITING VALUE

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_C	Electrostatic discharge capacitor voltage	Human body model; $C = 250\text{ pF}; R = 1.5\text{ k}\Omega$	-	8	kV

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BYV79EB series**THERMAL RESISTANCES**

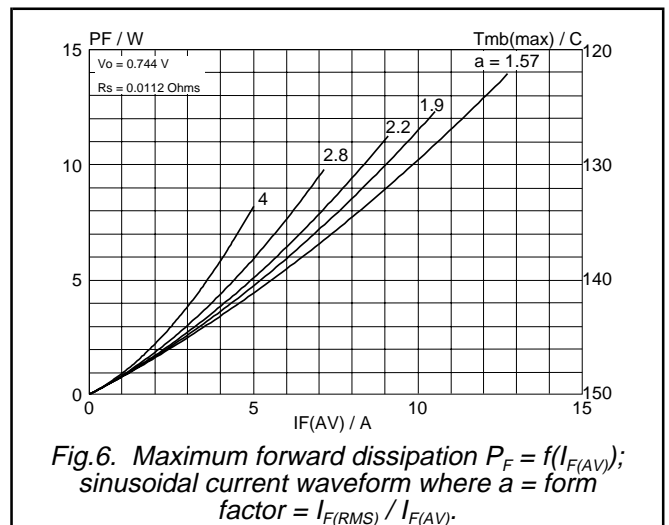
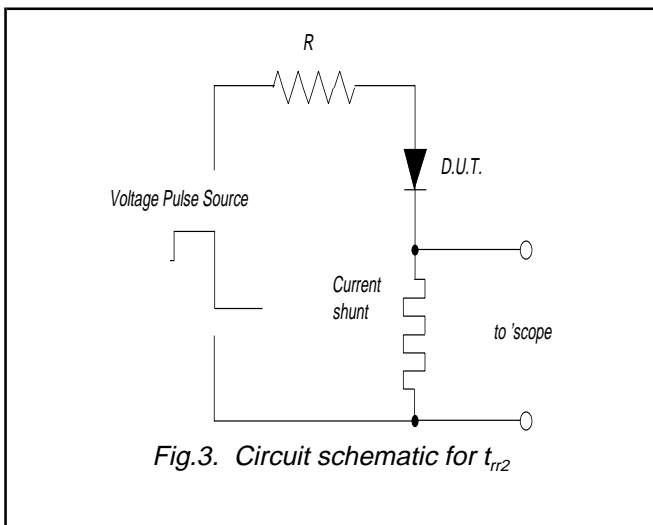
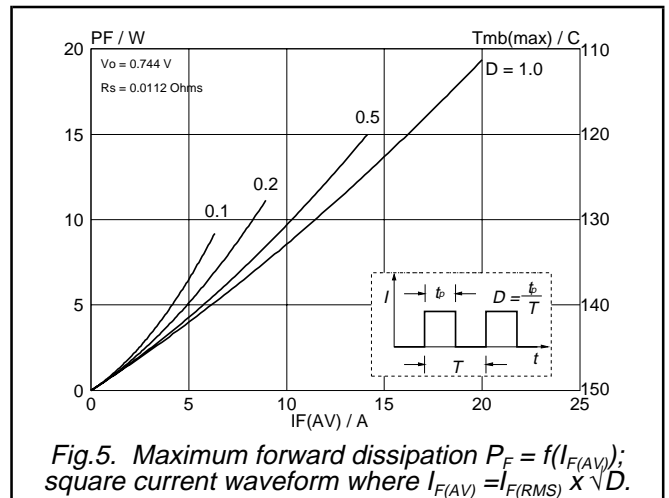
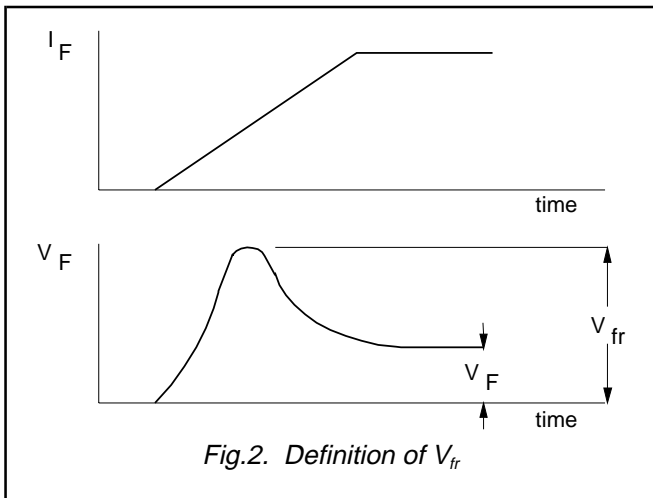
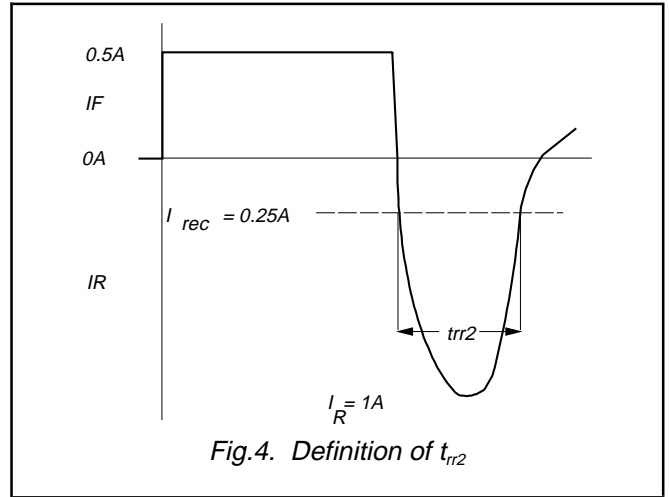
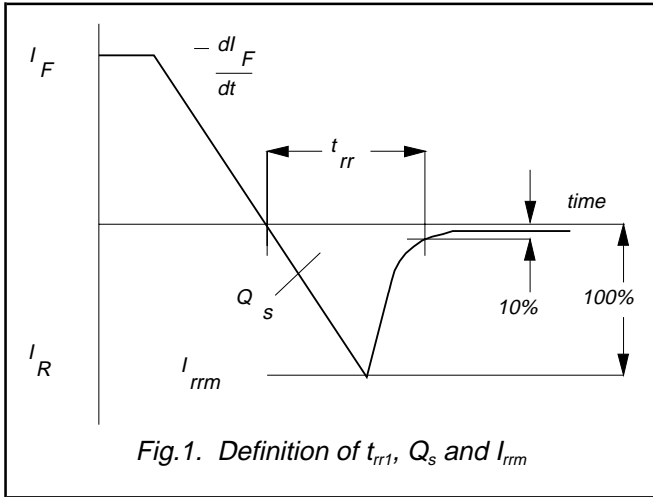
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base		-	-	2	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	minimum footprint, FR4 board	-	50	-	K/W

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 14\text{ A}; T_j = 150\text{ °C}$	-	0.83	0.90	V
		$I_F = 14\text{ A}$	-	0.95	1.05	V
		$I_F = 50\text{ A}$	-	1.2	1.4	V
I_R	Reverse current	$V_R = V_{RRM}; T_j = 100\text{ °C}$	-	0.5	1.3	mA
		$V_R = V_{RRM}$	-	5	50	μA
Q_s	Reverse recovery charge	$I_F = 2\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 20\text{ A}/\mu\text{s}$	-	6	15	nC
t_{rr1}	Reverse recovery time	$I_F = 1\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 100\text{ A}/\mu\text{s}$	-	20	30	ns
t_{rr2}	Reverse recovery time	$I_F = 0.5\text{ A to } I_R = 1\text{ A}; I_{rec} = 0.25\text{ A}$	-	13	22	ns
V_{fr}	Forward recovery voltage	$I_F = 1\text{ A}; di_F/dt = 10\text{ A}/\mu\text{s}$	-	1	-	V

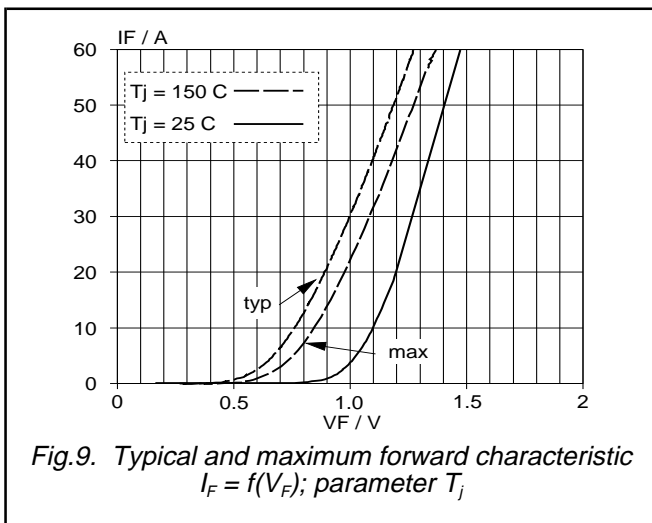
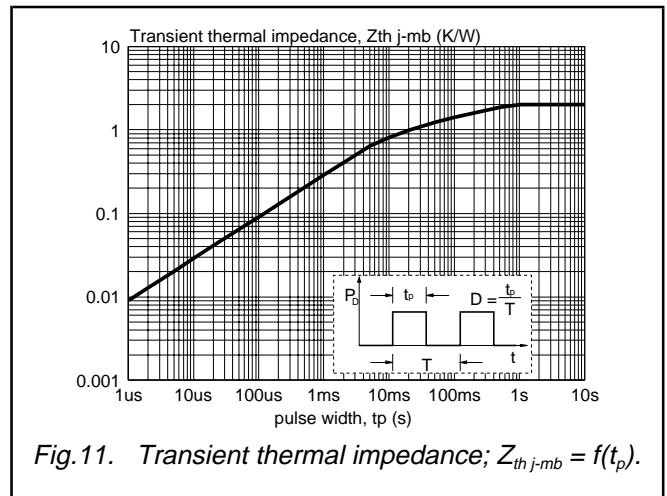
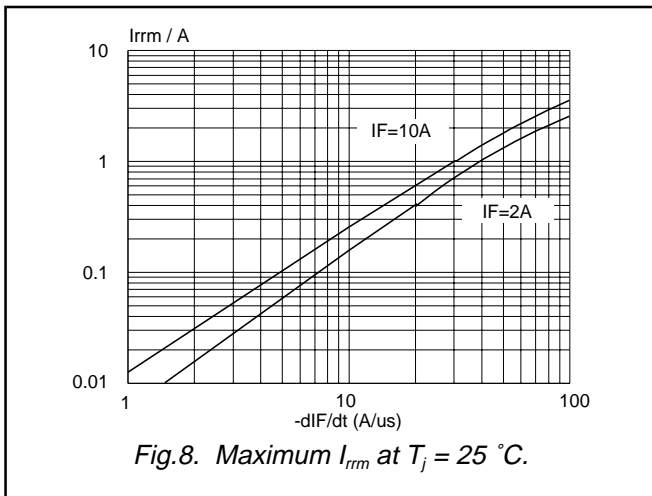
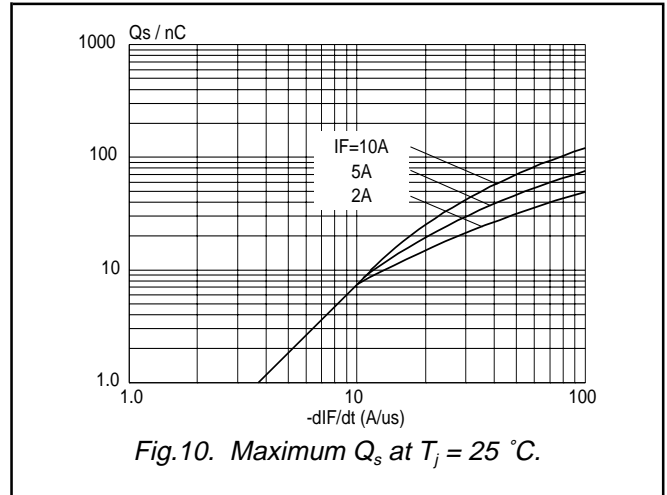
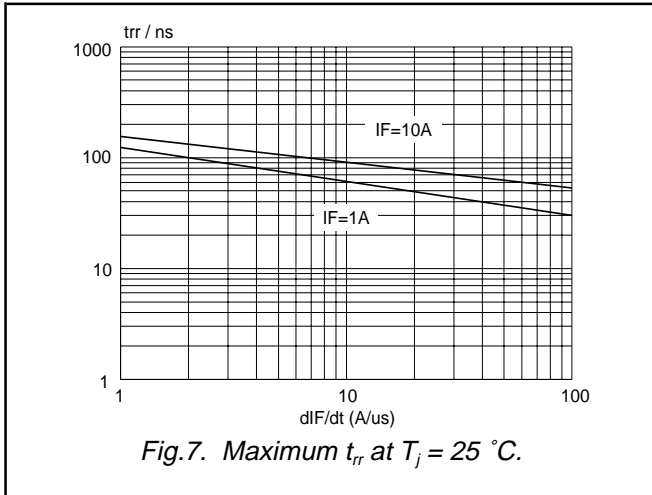
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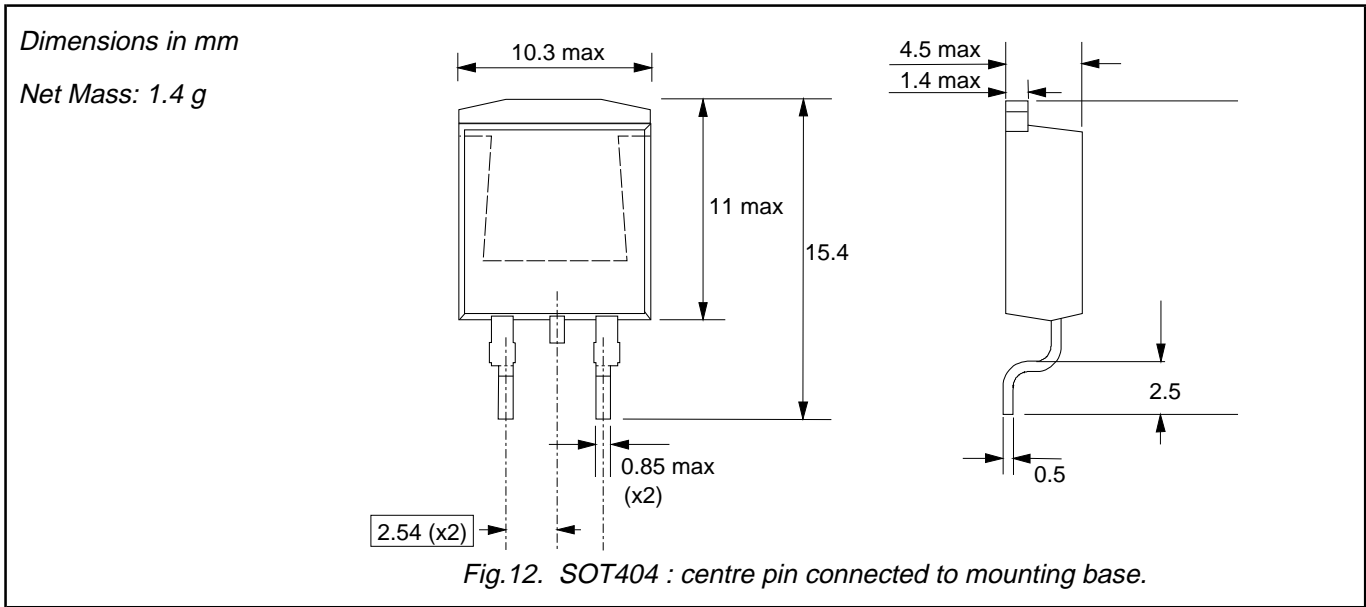
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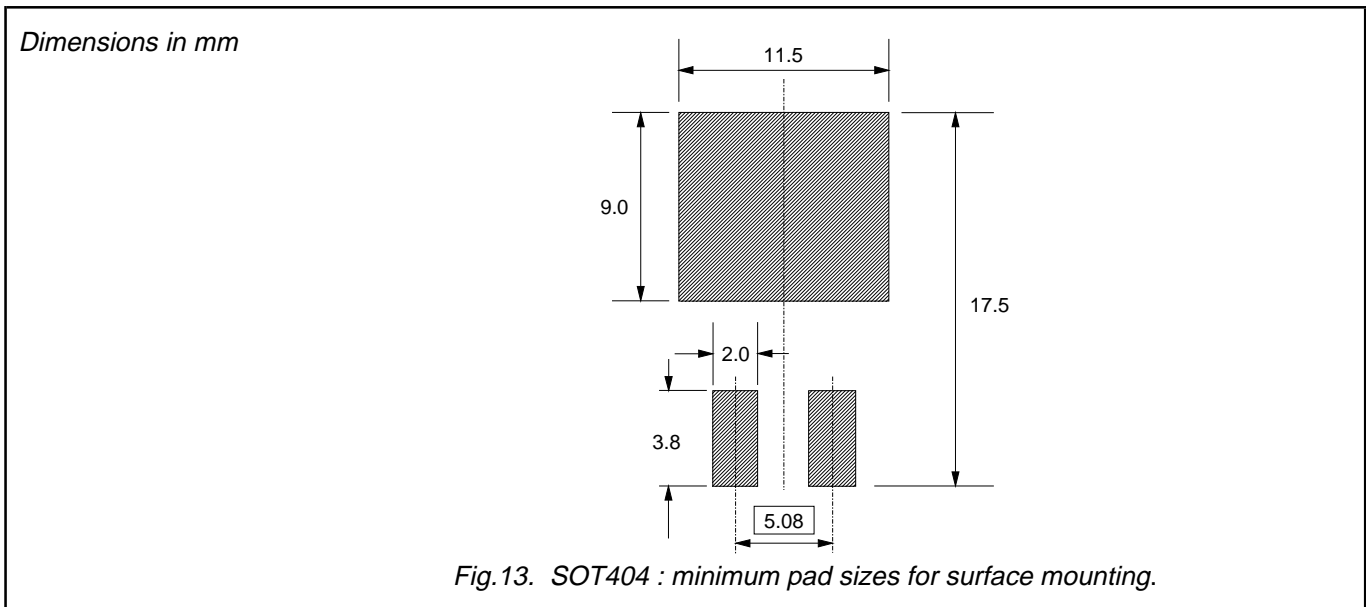
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MECHANICAL DATA



MOUNTING INSTRUCTIONS



Notes

1. Plastic meets UL94 V0 at 1/8".

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DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
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