

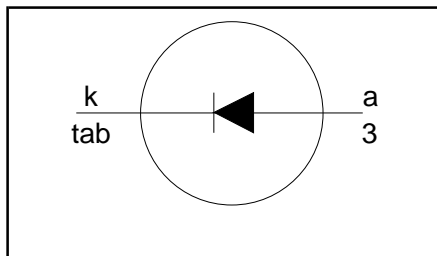
**Rectifier diodes  
ultrafast, rugged**

**BYW29EB, BYW29ED 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**

$V_R = 150\text{ V} / 200\text{ V}$
$V_F \leq 0.895\text{ V}$
$I_{F(AV)} = 8\text{ A}$
$I_{RRM} = 0.2\text{ A}$
$t_{tr} \leq 25\text{ ns}$

**GENERAL DESCRIPTION**

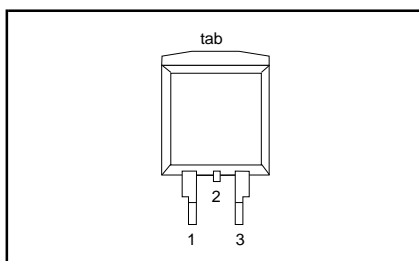
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

The BYW29EB series is supplied in the SOT404 surface mounting package.  
The BYW29ED series is supplied in the SOT428 surface mounting package.

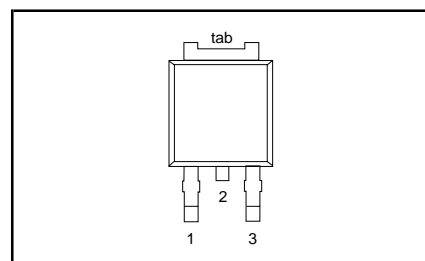
**PINNING**

PIN	DESCRIPTION
1	no connection
2	cathode <sup>1</sup>
3	anode
tab	cathode

**SOT404**



**SOT428**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
$V_{RRM}$	Peak repetitive reverse voltage	<b>BYW29EB/ BYW29ED</b>	-	-150	-200	V
$V_{RWM}$	Working peak reverse voltage		-	150	200	V
$V_R$	Continuous reverse voltage		-	150	200	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 128\text{ }^\circ\text{C}$	-	8		A
$I_{FRM}$	Repetitive peak forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 128\text{ }^\circ\text{C}$	-	16		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10\text{ ms}$	-	80		A
		$t = 8.3\text{ ms}$	-	88		A
$I_{RRM}$	Peak repetitive reverse surge current	sinusoidal; with reapplied $V_{RRM(max)}$ $t_p = 2\text{ }\mu\text{s}$ ; $\delta = 0.001$	-	0.2		A
$I_{RSM}$	Peak non-repetitive reverse surge current	$t_p = 100\text{ }\mu\text{s}$	-	0.2		A
$T_j$	Operating junction temperature		-	150		$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40	150		$^\circ\text{C}$

1. It is not possible to make connection to pin 2 of the SOT428 or SOT404 packages.

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## 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

## THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	SOT404 and SOT428 packages, pcb mounted, minimum footprint, FR4 board	-	-	2.7	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient		-	50	-	K/W

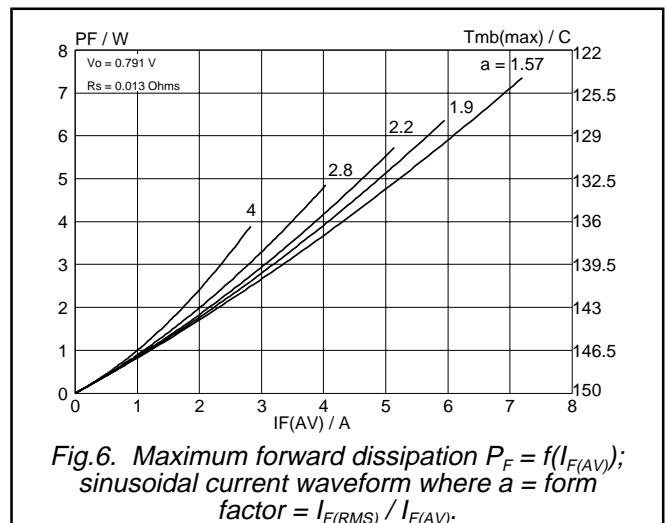
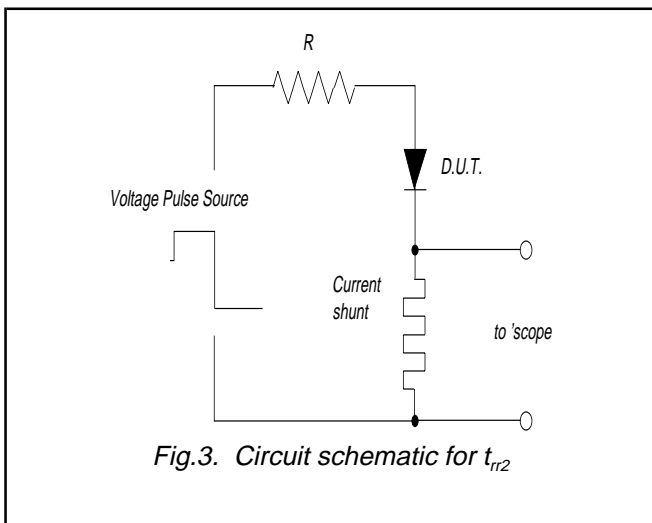
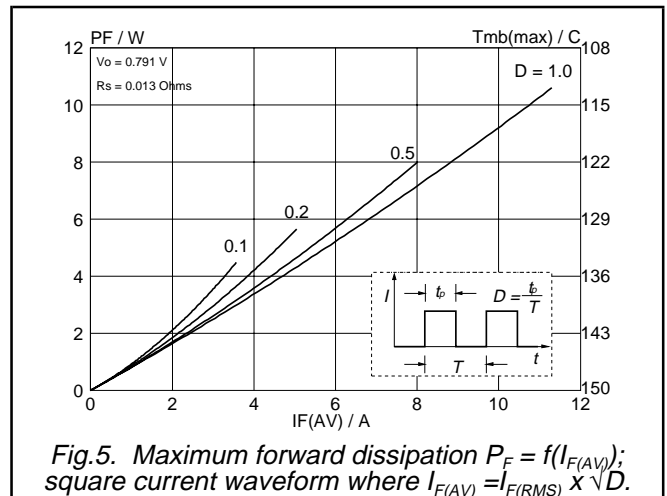
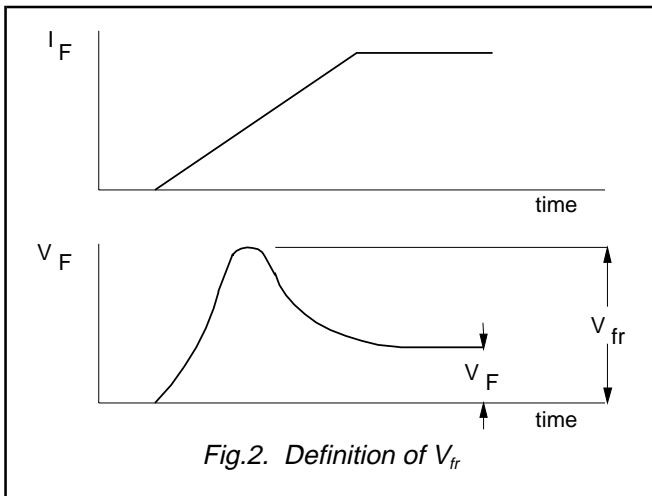
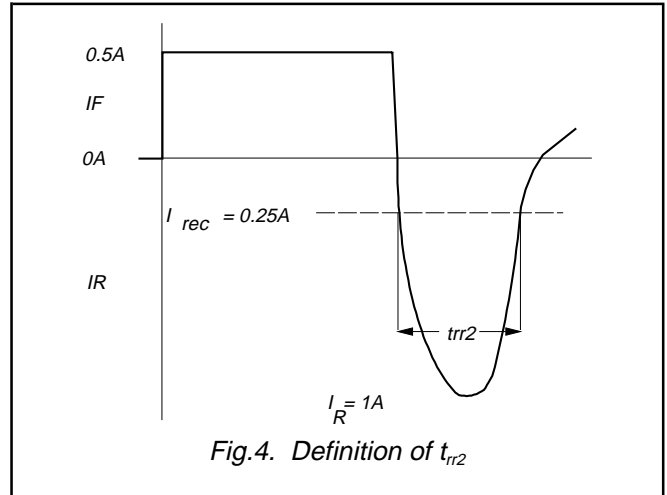
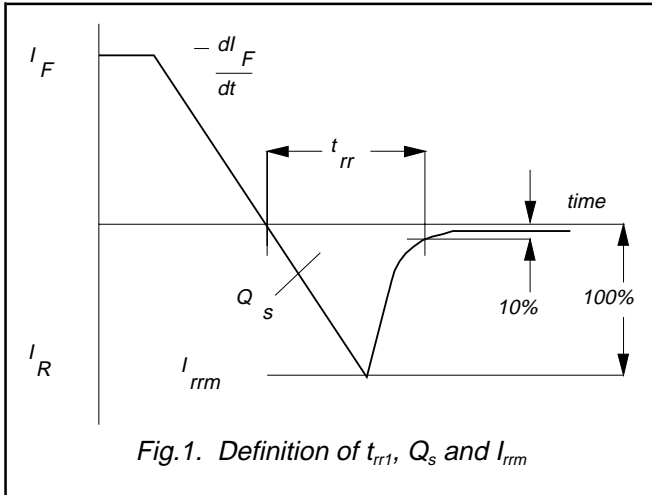
## ELECTRICAL CHARACTERISTICS

$T_j = 25 \text{ }^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 8 \text{ A}$ ; $T_j = 150^\circ\text{C}$	-	0.8	0.895	V
		$I_F = 8 \text{ A}$	-	0.92	1.05	V
		$I_F = 20 \text{ A}$	-	1.1	1.3	V
$I_R$	Reverse current	$V_R = V_{RWM}$	-	2	10	$\mu\text{A}$
		$V_R = V_{RWM}$ ; $T_j = 100^\circ\text{C}$	-	0.2	0.6	mA
$Q_{rr}$	Reverse recovered charge	$I_F = 2 \text{ A}$ ; $V_R \geq 30 \text{ V}$ ; $-di_F/dt = 20 \text{ A}/\mu\text{s}$	-	4	11	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	25	ns
$t_{rr2}$	Reverse recovery time	$I_F = 0.5 \text{ A}$ to $I_R = 1 \text{ A}$ ; $I_{rec} = 0.25 \text{ A}$	-	15	20	ns
$V_{fr}$	Forward recovery voltage	$I_F = 1 \text{ A}$ ; $di_F/dt = 10 \text{ A}/\mu\text{s}$	-	1	-	V

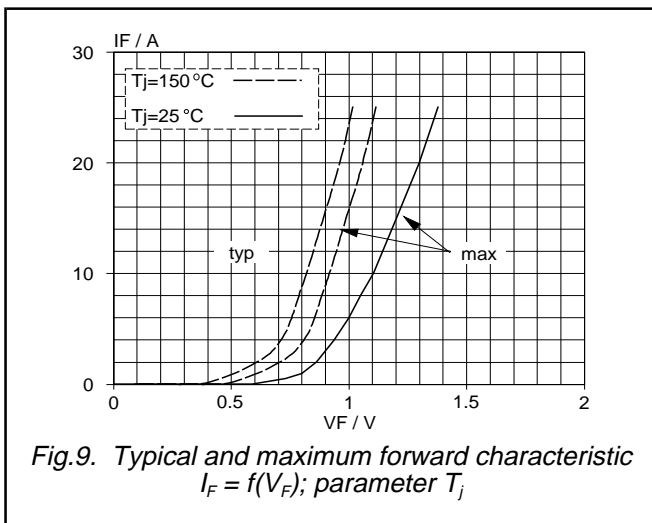
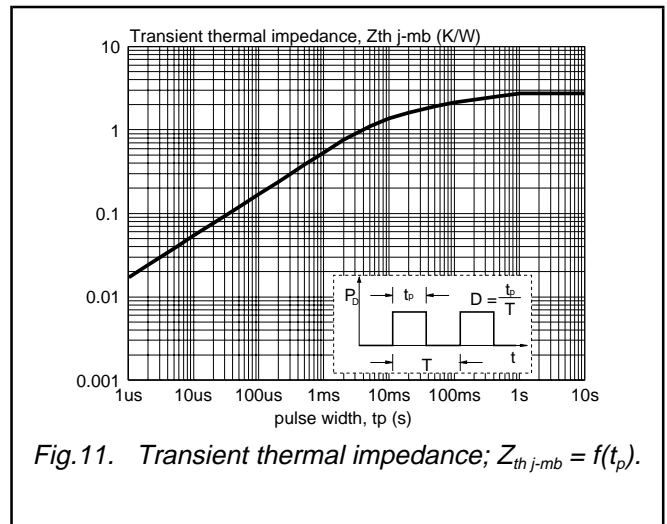
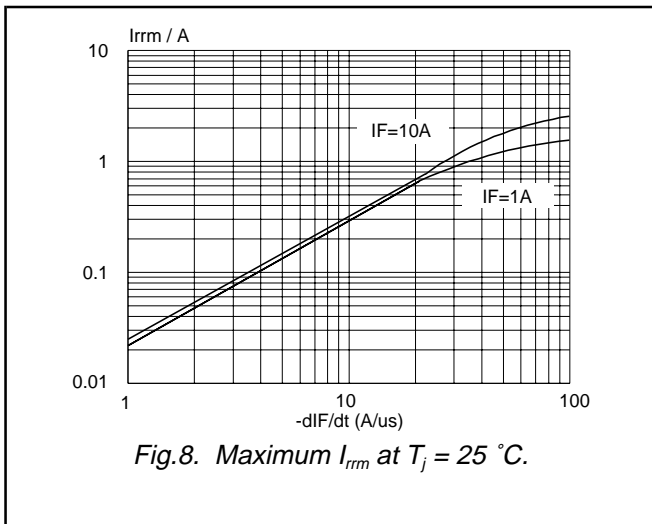
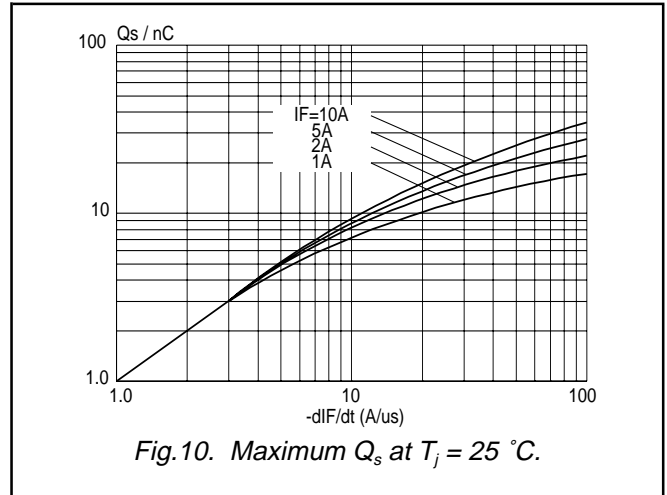
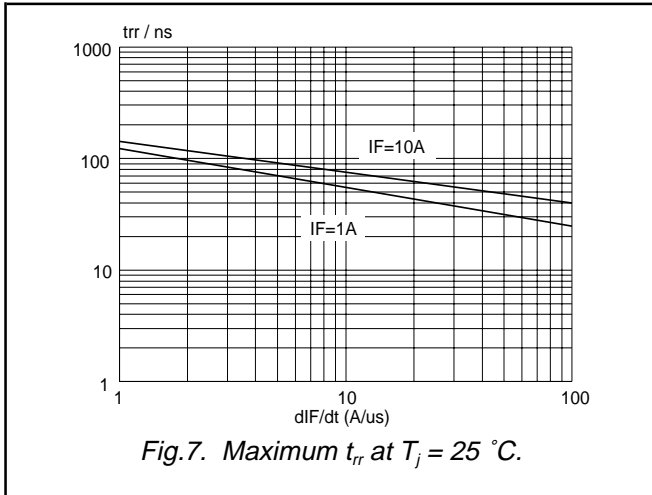
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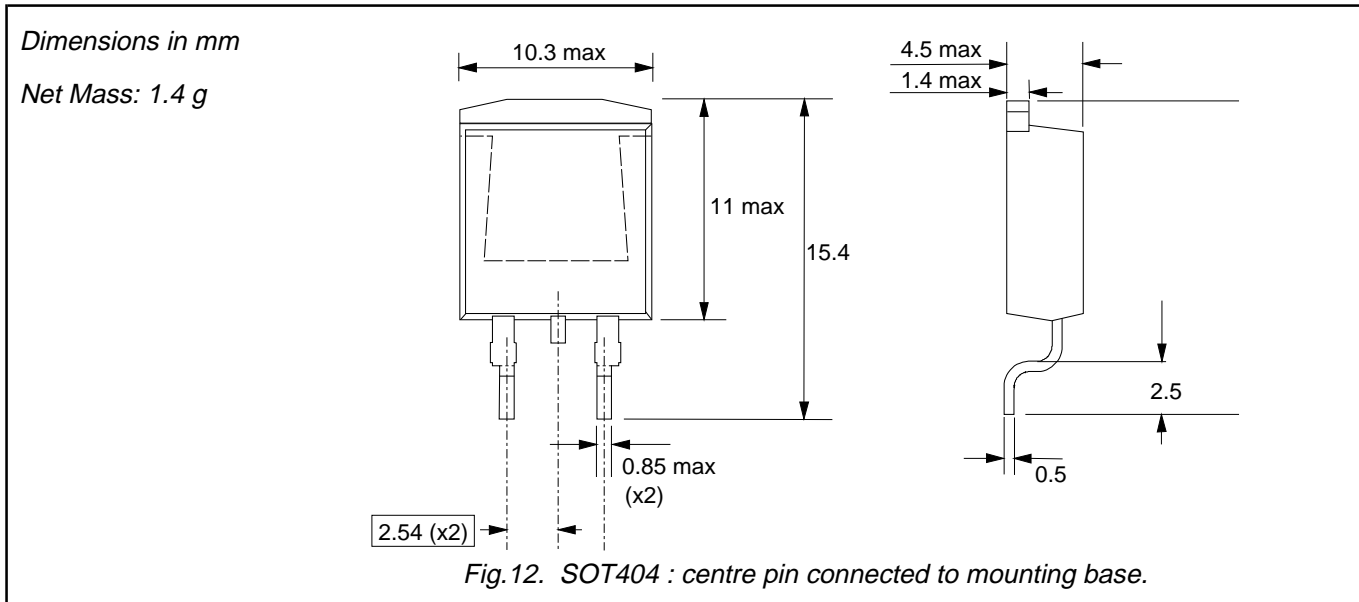
BYW29EB, BYW29ED series



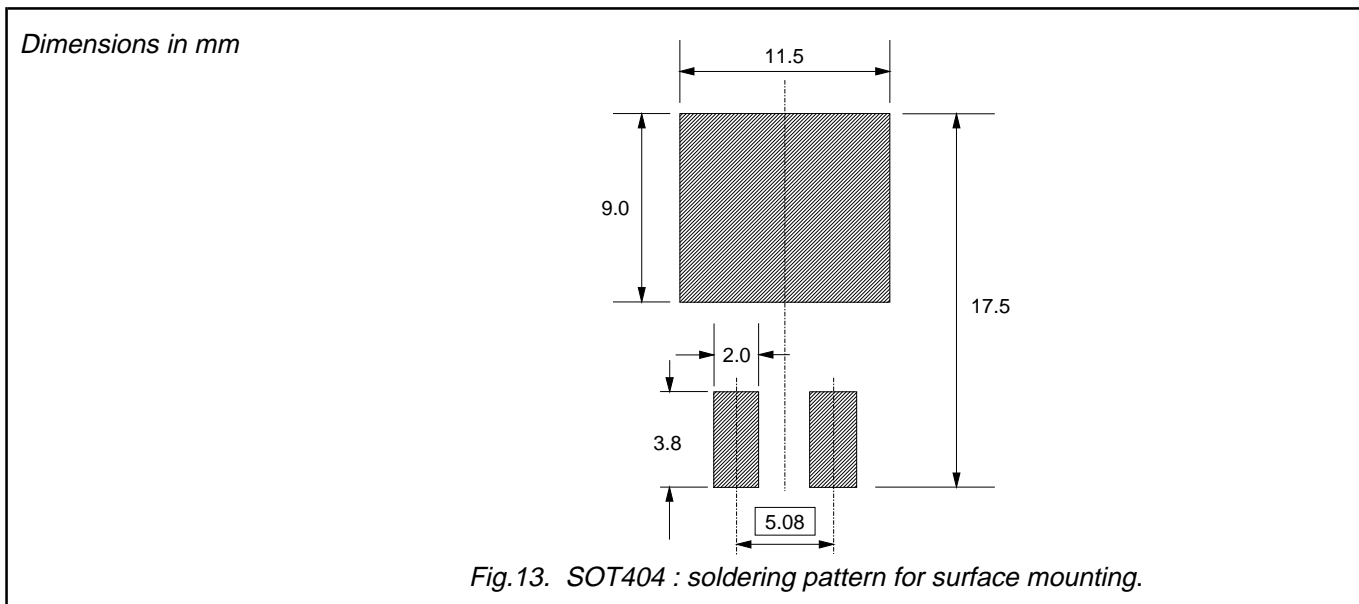
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**MECHANICAL DATA**



**MOUNTING INSTRUCTIONS**



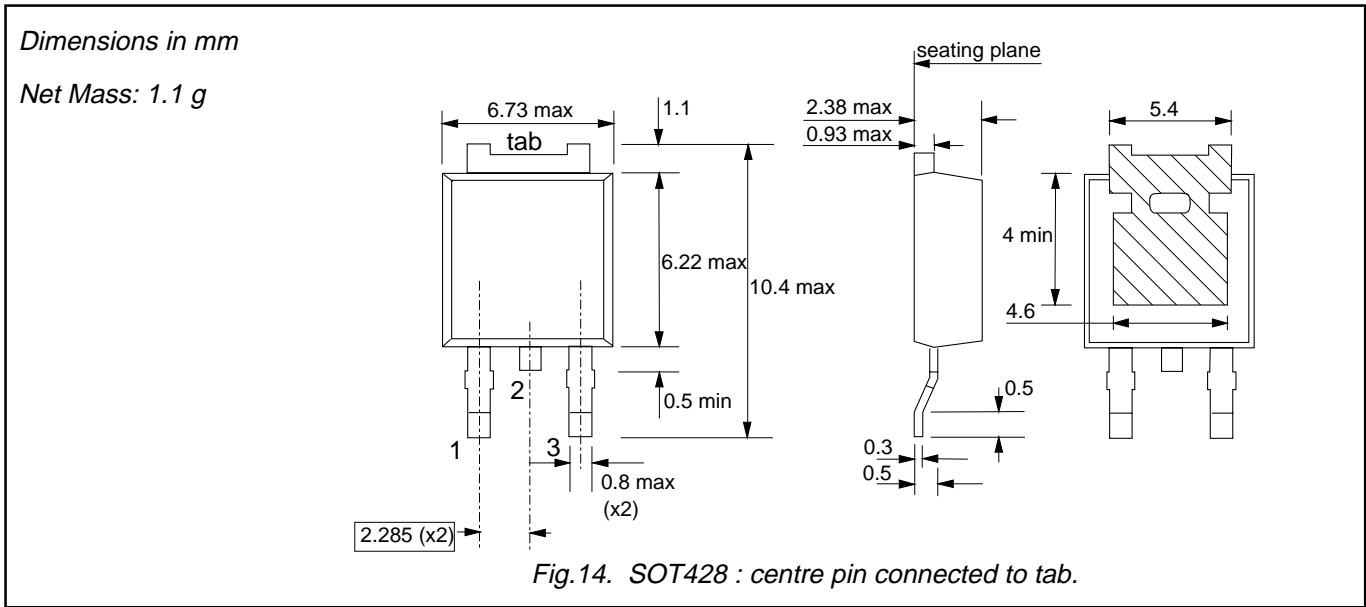
**Notes**

- 1. Epoxy meets UL94 V0 at 1/8".

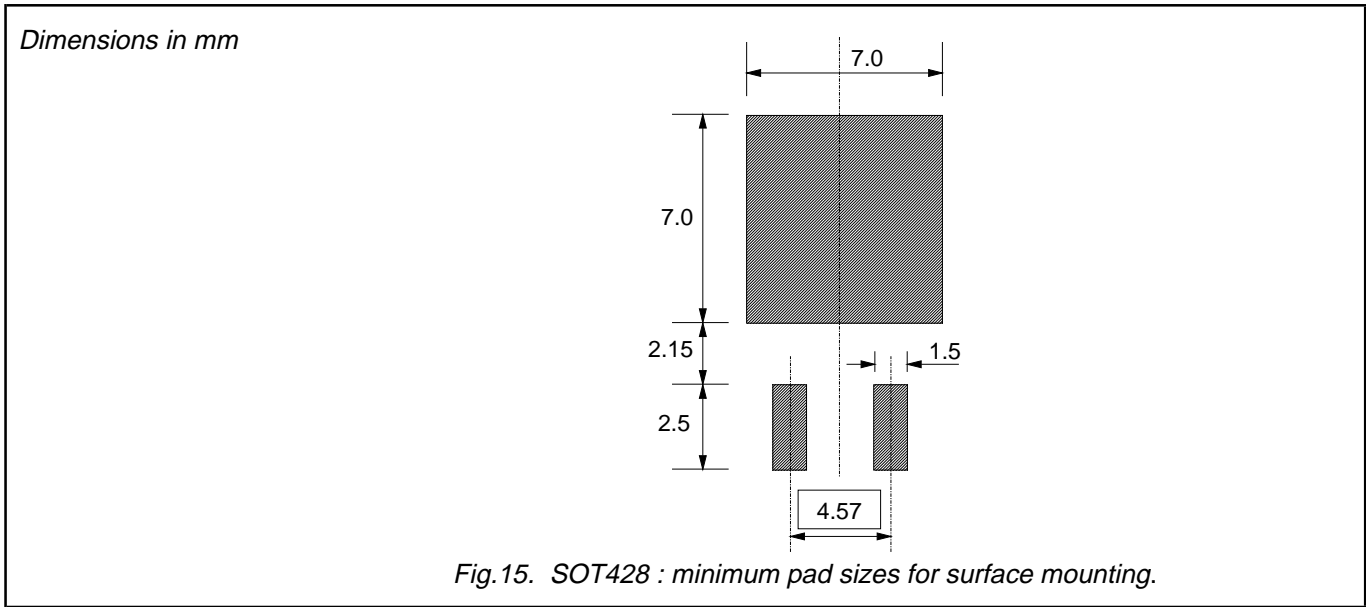
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**MECHANICAL DATA**



**MOUNTING INSTRUCTIONS**



**Notes**

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## DEFINITIONS

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Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
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