

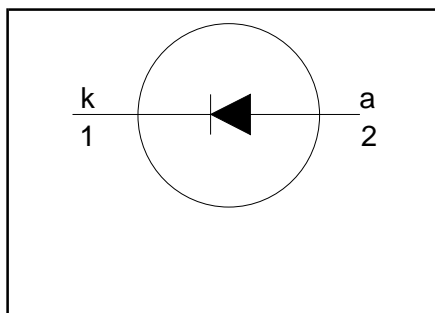
# Damper diode fast, high-voltage

**BY559-1500U**

## FEATURES

- Low forward volt drop
- Low forward recovery voltage
- Fast switching
- Soft recovery characteristic
- High thermal cycling performance
- Low thermal resistance

## SYMBOL



## QUICK REFERENCE DATA

$V_R = 1500\text{ V}$
$V_F \leq 1.4\text{ V}$
$V_{fr} \leq 10\text{ V}$
$t_{rr} \leq 120\text{ ns}$
$I_{F(\text{peak})} = 10\text{ A}$
$I_{FSM} \leq 150\text{ A}$

## GENERAL DESCRIPTION

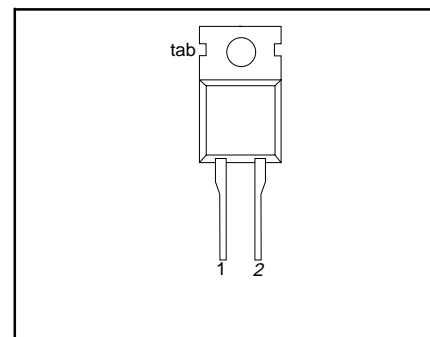
A double diffused rectifier diode in a plastic envelope, featuring fast forward and reverse recovery and low forward voltage. The device is intended for use as a damper diode in horizontal deflection circuits of large screen monitors and workstations .

The BY559 series is supplied in the conventional leaded SOD59 (TO220AC) package.

## PINNING

PIN	DESCRIPTION
1	cathode
2	anode
tab	cathode

## SOD59 (TO220AC)



## 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		-	1500	V
$V_{RWM}$	Crest working reverse voltage		-	1300	V
$I_{F(\text{PEAK})}$	Peak working forward current	$f = 130\text{ kHz}$ ;	-	10	A
$I_{FRM}$	Peak repetitive forward current	$t = 100\text{ }\mu\text{s}$	-	150	A
$I_{FSM}$	Peak non-repetitive forward current	$t = 10\text{ ms}$ sinusoidal; $T_j = 150\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RWM(\text{max})}$	-	160	A
$T_{stg}$	Storage temperature		-40	150	$^\circ\text{C}$
$T_j$	Operating junction temperature		-	150	$^\circ\text{C}$

## THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j\text{-}mb}$	Thermal resistance junction to mounting base		-	-	1.0	K/W
$R_{th\ j\text{-}a}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

## Damper diode fast, high-voltage

BY559-1500U

### STATIC CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 6.5\text{ A}$	-	1.5	1.8	V
		$I_F = 6.5\text{ A}; T_j = 125\text{ °C}$	-	1.2	1.4	V
$I_R$	Reverse current	$V_R = V_{RWMmax}$	-	-	0.5	mA
		$V_R = V_{RWMmax}; T_j = 125\text{ °C}$	-	-	2.0	mA

### DYNAMIC CHARACTERISTICS

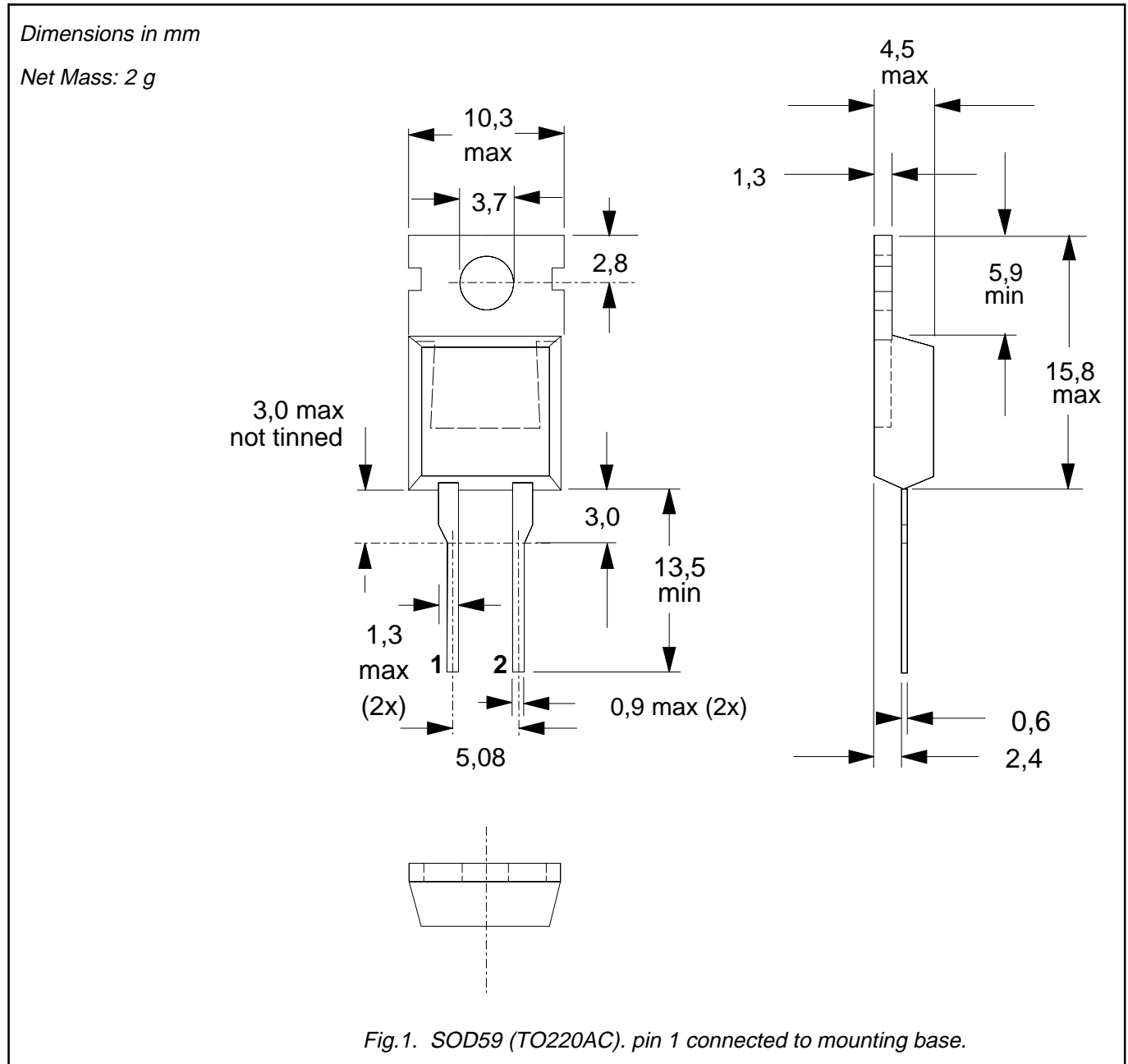
$T_j = 25\text{ °C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{fr}$	Forward recovery voltage	$I_F = 6.5$ ; $di_F/dt = 50\text{ A}/\mu\text{s}$	-	6	10	V
$t_{fr}$	Forward recovery time	$I_F = 6.5\text{ A}; di_F/dt = 50\text{ A}/\mu\text{s}; V_F = 5\text{ V}$	-	130	180	ns
$t_{rr}$	Reverse recovery time	$I_F = 1\text{ A}; -di_F/dt = 50\text{ A}/\mu\text{s}; V_R \geq 30\text{ V}$	-	90	120	ns
$Q_s$	Reverse recovery charge	$I_F = 2\text{ A}; -di_F/dt = 20\text{ A}/\mu\text{s}; V_R \geq 30\text{ V}$	-	0.2	0.25	$\mu\text{C}$

Damper diode  
fast, high-voltage

BY559-1500U

**MECHANICAL DATA**



**Notes**

1. Refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".