

Damper diode fast, high-voltage

BY359X-1500 BY359X-1500S

GENERAL DESCRIPTION

Glass-passivated double diffused rectifier diode in a plastic envelope featuring low forward voltage drop, fast reverse recovery and soft recovery characteristic. The device is intended for use in TV receivers and PC monitors.

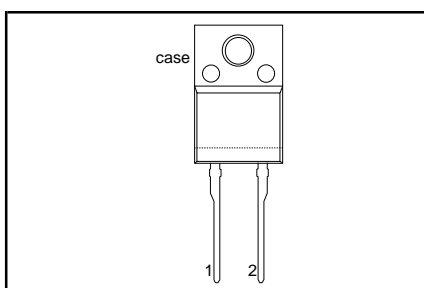
QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{RRM}	Repetitive peak reverse voltage	1500	V
V_F	Forward voltage	1.8	V
		2.0	V
$I_{F(RMS)}$	RMS forward current	15.7	A
I_{FSM}	Non-repetitive peak forward current	60	A
t_{rr}	Reverse recovery time	0.60	μ s
		0.35	μ s

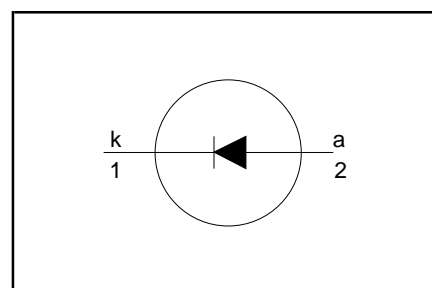
PINNING - SOD113

PIN	DESCRIPTION
1	cathode
2	anode
case	isolated

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RSM}	Non-repetitive peak reverse voltage		-	1500	V
V_{RRM}	Repetitive peak reverse voltage		-	1500	V
V_{RWM}	Crest working reverse voltage		-	1300	V
$I_{F(peak)}$	Peak forward current	16-32kHz TV 31-64kHz monitor	-	10	A
			-	7	A
$I_{F(RMS)}$	RMS forward current		-	15.7	A
I_{FRM}	Repetitive peak forward current	sinusoidal; a = 1.57	-	60	A
I_{FSM}	Non-repetitive peak forward current	t = 10 ms t = 8.3 ms	-	60	A
		sinusoidal; $T_j = 150^\circ\text{C}$ prior to surge; with reapplied $V_{RWM(max)}$	-	66	A
T_{stg}	Storage temperature		-40	150	$^\circ\text{C}$
T_j	Operating junction temperature		-	150	$^\circ\text{C}$

ISOLATION LIMITING VALUE & CHARACTERISTIC

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{isol}	R.M.S. isolation voltage from both terminals to external heatsink	f = 50-60 Hz; sinusoidal waveform; R.H. $\leq 65\%$; clean and dustfree	-		2500	V
C_{isol}	Capacitance from both terminals to external heatsink	f = 1 MHz	-	10	-	pF

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BY359X-1500
BY359X-1500S

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-hs}$	Thermal resistance junction to heatsink	with heatsink compound	-	-	4.8	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	without heatsink compound in free air.	-	55	5.9	K/W

STATIC CHARACTERISTICS

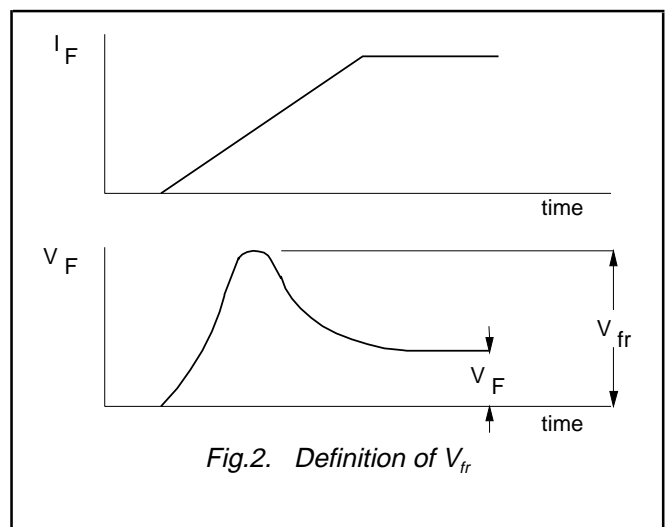
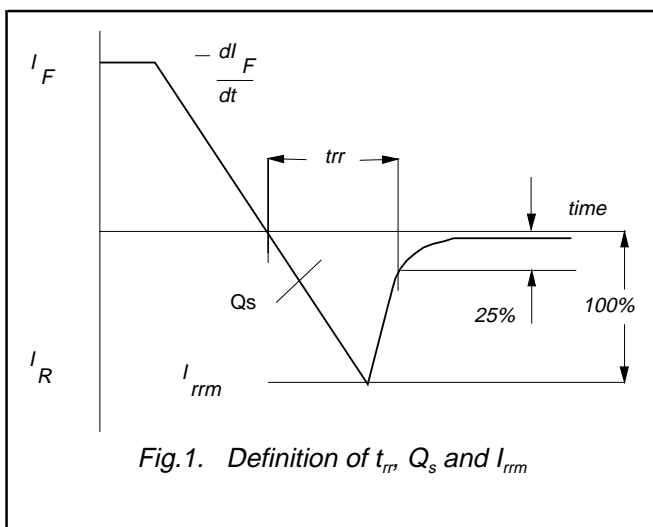
$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	BY359X-1500		BY359X-1500S		UNIT
			TYP.	MAX.	TYP.	MAX.	
V_F	Forward voltage	$I_F = 20\text{ A}$	1.3	1.8	1.5	2.0	V
		$I_F = 10\text{ A}; T_j = 150\text{ }^\circ\text{C}$	1.00	1.5	1.25	1.75	V
I_R	Reverse current	$V_R = 1300\text{ V}$	10	100	10	100	μA
		$V_R = 1300\text{ V};$ $T_j = 100\text{ }^\circ\text{C}$	50	300	100	600	μA

DYNAMIC CHARACTERISTICS

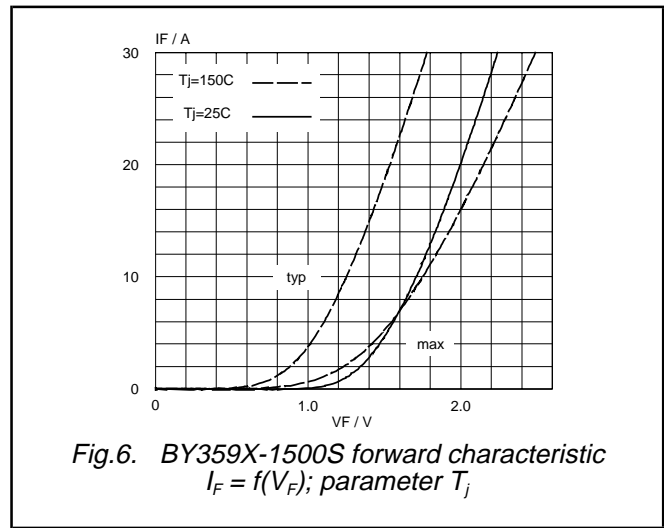
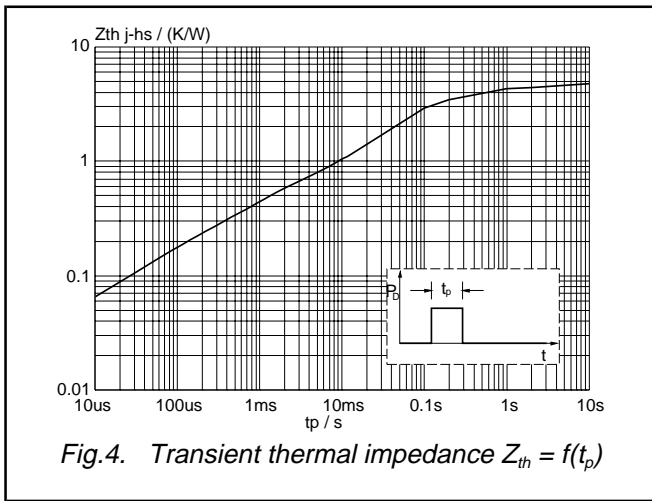
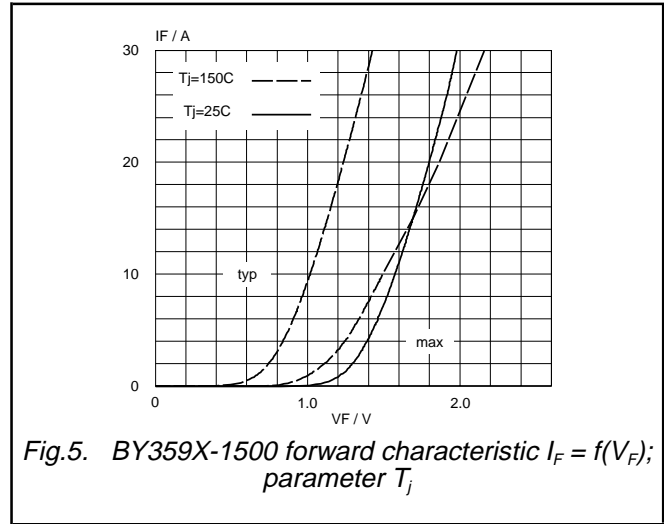
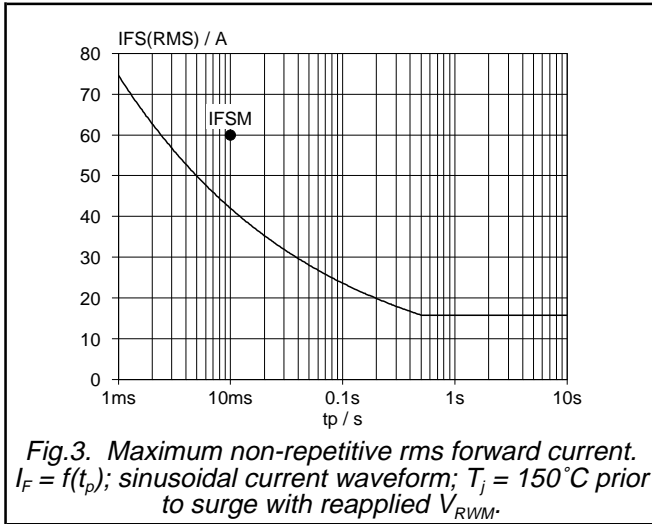
$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	BY359X-1500		BY359X-1500S		UNIT
			TYP.	MAX.	TYP.	MAX.	
t_{rr}	Reverse recovery time	$I_F = 2\text{ A}; V_R \geq 30\text{ V};$ $-di_F/dt = 20\text{ A}/\mu\text{s}$	0.47	0.60	0.28	0.35	μs
Q_s	Reverse recovery charge		1.6	2.0	0.70	0.95	μC
V_{fr}	Peak forward recovery voltage	$I_F = 10\text{ A};$ $di_F/dt = 30\text{ A}/\mu\text{s}$	11.0	-	17.0	-	V



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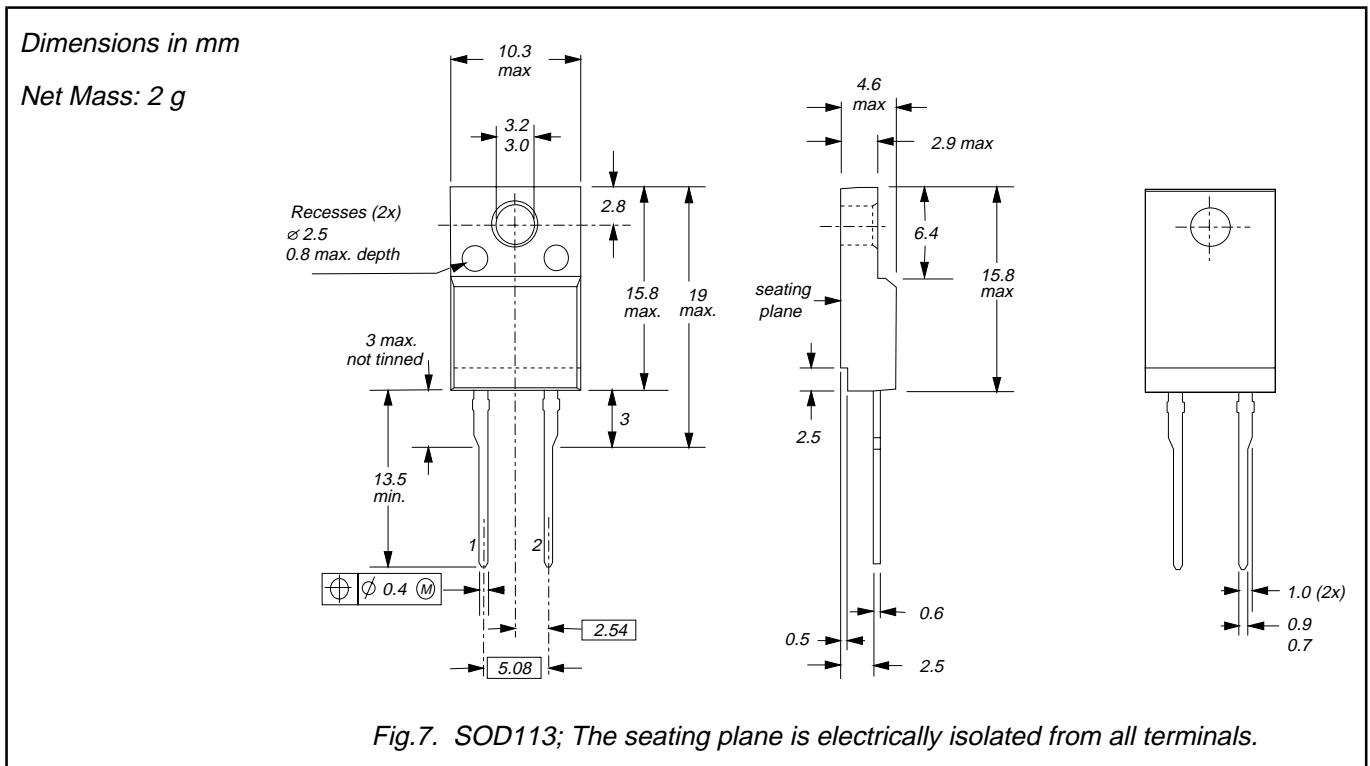
BY359X-1500
BY359X-1500S



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BY359X-1500S

MECHANICAL DATA



Notes

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