Damper diode fast, high-voltage

BY329-1700S

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	1700	V
V_F	Forward voltage	1.5	V
$I_{F(RMS)}$	Working peak forward current	10	A
I_{FSM}	Repetitive peak forward current	60	A
t_{rr}	Reverse recovery time	0.17	µs

PINNING - TO220AC

PIN	DESCRIPTION
1	cathode (k)
2	anode (a)
tab	cathode (k)

PIN CONFIGURATION
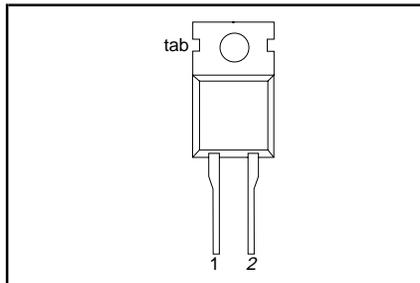
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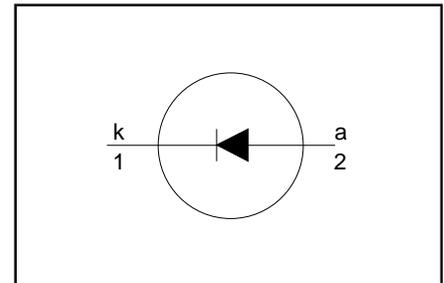
LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RSM}	Non repetitive peak reverse voltage		-	1700	V
V_{RRM}	Repetitive peak reverse voltage		-	1700	V
V_{RWM}	Crest working reverse voltage		-	1300	V
$I_{F(peak)}$	Working peak forward current	f = 16 kHz	-	6	A
		f = 56 kHz	-	4	A
I_{FRM}	Repetitive peak forward current	t = 25 µs; δ = 0.5; $T_{mb} \leq 125$ ˚C	-	14	A
$I_{F(RMS)}$	RMS forward current		-	10	A
I_{FSM}	Non repetitive peak forward current	t = 10 ms sinusoidal; $T_j = 150$ ˚C prior to surge; with reapplied $V_{RWM(max)}$	-	60	A
T_{stg}	Storage temperature		-40	150	˚C
T_j	Operating junction temperature		-	150	˚C

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base		-	-	2.0	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

STATIC CHARACTERISTICS

$T_j = 25$ ˚C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 6.5$ A	-	1.35	1.65	V
		$I_F = 6.5$ A; $T_j = 125$ ˚C	-	1.2	1.5	V
I_R	Reverse current	$V_R = V_{RWMmax}$	-	-	250	µA
		$V_R = V_{RWMmax}$; $T_j = 125$ ˚C	-	-	1.0	mA

DYNAMIC CHARACTERISTICS

T_j = 25 ˚C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{fr}	Forward recovery voltage	I_F = 6.5 A; dI_F/dt = 50 A/µs	-	30	40	V
t_{fr}	Forward recovery time	I_F = 6.5 A; dI_F/dt = 50 A/µs; V_F = 5 V	-	300	320	ns
t_{rr}	Reverse recovery time	I_F = 1 A; $-dI_F/dt$ = 50 A/µs; $V_R \geq$ 30 V	-	130	170	ns
Q_s	Reverse recovery charge	I_F = 2 A; $-dI_F/dt$ = 20 A/µs; $V_R \geq$ 30 V	-	0.7	1.0	µC

Fig.1. Definition of Vfr and tfr

Fig.3. Basic horizontal deflection circuit.

Fig.2. Definition of t_{rr} and Q_s

Fig.4. Maximum allowable pulse width t_p versus line frequency; Basic horizontal deflection circuit.

Fig.5. BY329-1700S Typical and maximum forward
characteristic $I_F = f(V_F)$; parameter T_j

Fig.6.   Transient thermal impedance $Z_{th} = f(t_p)$
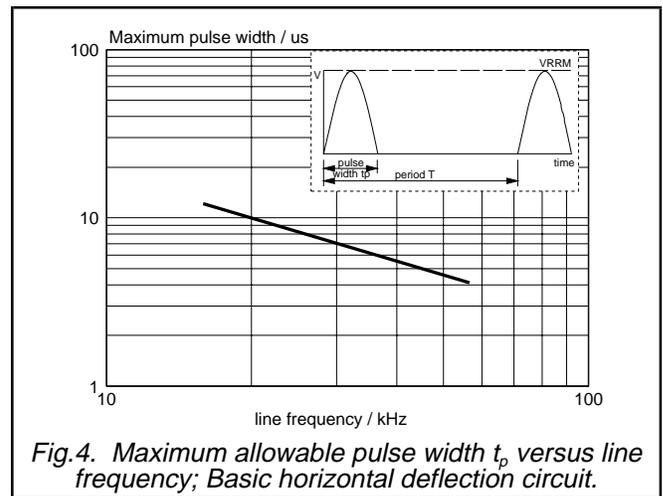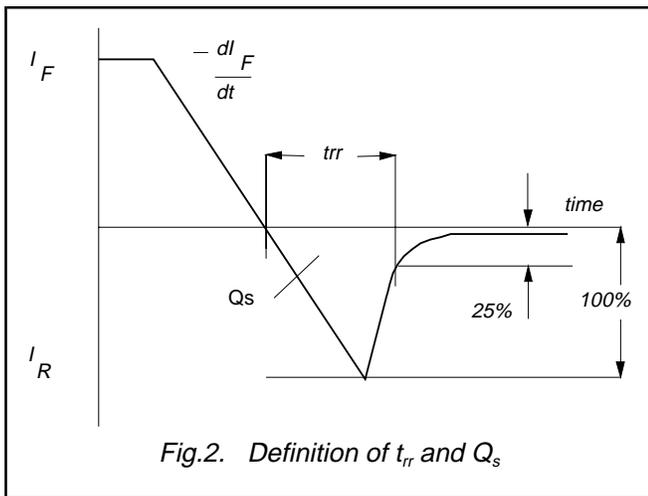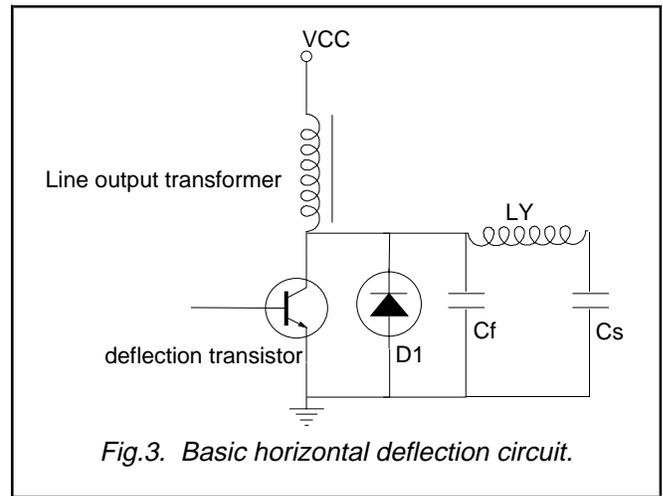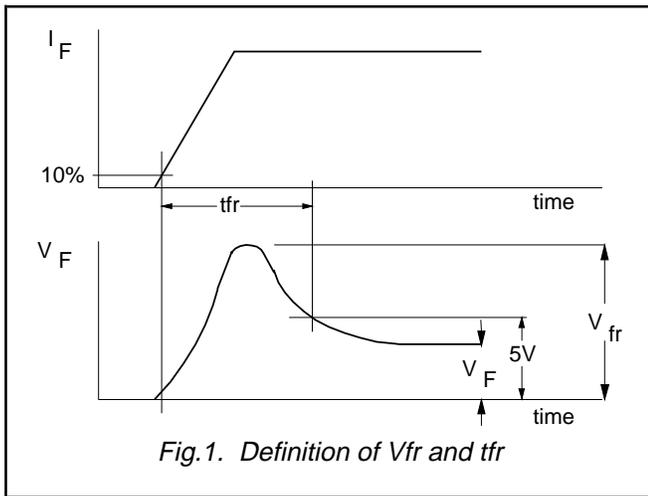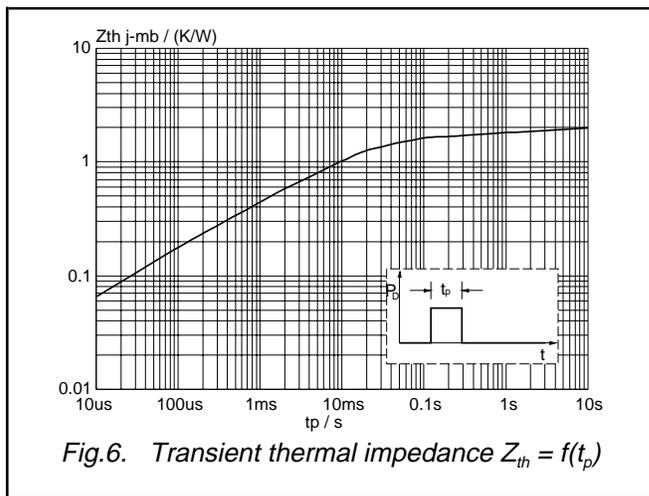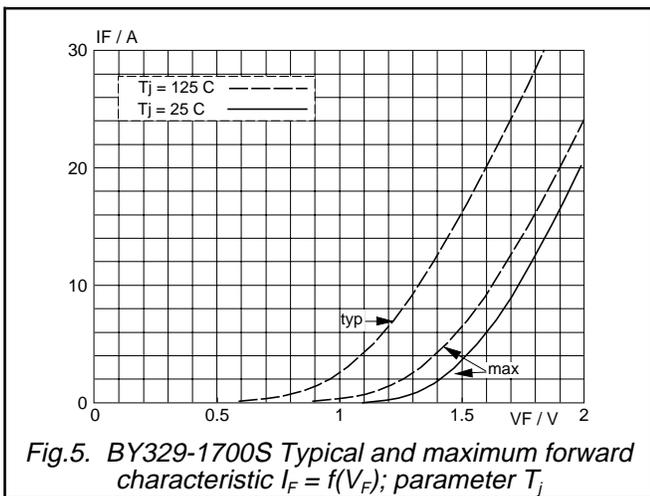
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MECHANICAL DATA

Dimensions in mm

Net Mass: 2 g

Fig.7. TO220AC; pin 1 connected to mounting base.
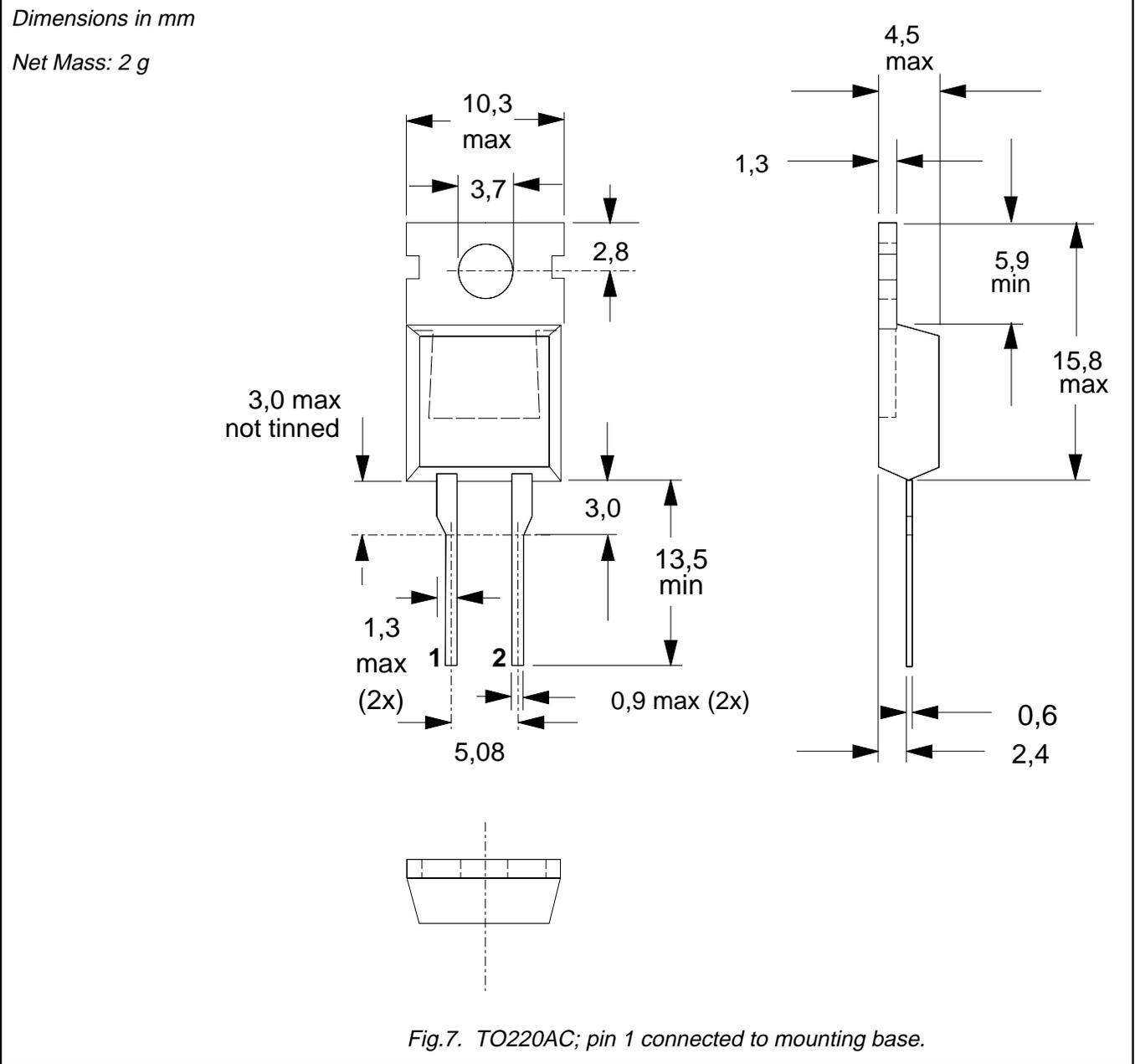
Notes
1. Refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".

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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	
Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	
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