BU4522DF

GENERAL DESCRIPTION

Enhanced performance, new generation, high-voltage, high-speed switching npn transistor with an integrated damper diode in a plastic full-pack envelope intended for use in horizontal deflection circuits of colour television receivers and p.c monitors. Features exceptional tolerance to base drive and collector current load variations resulting in a very low worst case dissipation.

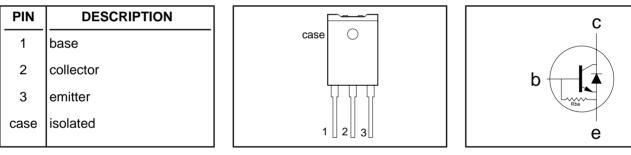
QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0 V$	-	1500	V
V _{CEO}	Collector-emitter voltage (open base)		-	800	V
I _C	Collector current (DC)		-	10	A
1	Collector current peak value		-	25	A
I _{CM} P _{tot} V _{CEsat}	Total power dissipation	$T_{hs} \le 25 \degree C$	-	45	W
V _{CEsat}	Collector-emitter saturation voltage	$I_{\rm C} = 7 \text{ A}; I_{\rm B} = 1.75 \text{ A}$	-	3.0	V
I _{Csat}	Collector saturation current (Fig 17)	f = 16 kHz	7	-	A
obat		f = 64 kHz	6	-	A
V _F	Diode forward voltage	$I_{\rm F} = 7.0 {\rm A}$	-	2.2	V
t	Fall time	I _{Csat} = 7 A; f = 16 kHz f = 64 kHz	285	400	ns
		f = 64 kHz	t.b.f	t.b.f	ns

PINNING - SOT199

PIN CONFIGURATION

SYMBOL



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0 V$	-	1500	V
V _{CEO}	Collector-emitter voltage (open base)		-	800	V
	Collector current (DC)		-	10	Α
I _{CM}	Collector current peak value		-	25	Α
I _B	Base current (DC)		-	6	A
I _{BM}	Base current peak value		-	9	Α
-I _{BM}	Reverse base current peak value ¹		-	6	А
P _{tot}	Total power dissipation	$T_{hs} \leq 25 \degree C$	-	45	W
T _{stg}	Storage temperature	10	-55	150	°C
	Junction temperature		-	150	°C

¹ Turn-off current.

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
R _{th j-hs}	Junction to heatsink	with heatsink compound	-	2.8	K/W
R _{th j-a}	Junction to ambient	in free air	35	-	K/W

ISOLATION LIMITING VALUE & CHARACTERISTIC

 $T_{hs} = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{isol}	Repetitive peak voltage from all three terminals to external heatsink	$R.H. \leq 65~\%$; clean and dustfree	-	-	2500	V
C _{isol}	Capacitance from T2 to external heatsink	f = 1 MHz	-	22	-	рF

STATIC CHARACTERISTICS

 $T_{hs} = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CES}	Collector cut-off current ²	$V_{BE} = 0 V; V_{CE} = V_{CESMmax}$	-	-	1.0	mA
I _{CES}		$V_{BE} = 0 V; V_{CE} = V_{CESMmax}$ $V_{BE} = 0 V; V_{CE} = V_{CESMmax};$	-	-	2.0	mA
BV _{EBO}	Emitter-base breakdown voltage	T _j = 125 °C I _B = 600 mA	7.5	13.5	-	V
R _{be}	Base-emitter resistance	$\bar{V}_{FB} = 7.5 \text{ V}$	-	50	-	Ω
V _{CEOsust}	Collector-emitter sustaining voltage	I _B = 0 A; I _C = 100 mA; L = 25 mH	800	-	-	V
V _{CEsat}	Collector-emitter saturation voltage	I _C = 7 A; I _B = 1.75 A	-	-	3.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C = 7 A; I _B = 1.75 A	0.85	0.94	1.03	V
h _{FE}	DC current gain	$I_{\rm C} = 1$ A; $V_{\rm CE} = 5$ V	-	10	-	
h _{FE} V _F	Diode forward voltage	$I_{c}^{c} = 7 \text{ A}; V_{cE}^{c} = 5 \text{ V}$ $I_{F} = 7 \text{ A}$	4.2 -	5.8 -	7.3 2.2	V

DYNAMIC CHARACTERISTICS

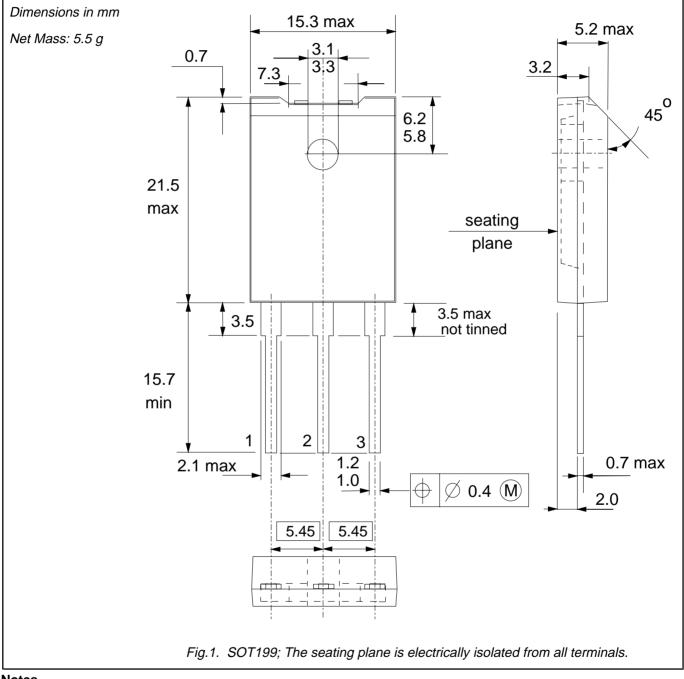
 $T_{hs} = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
t _s t _f	Switching times (16 kHz line deflection circuit) Turn-off storage time Turn-off fall time	f = 16 kHz; I_{Csat} = 7 A; I_{B1} = 1.4 A; $(I_{B2}$ = -3.5 A)	3.5 285	4.3 400	μs ns
t _s t _f	Switching times (64 kHz line deflection circuit) Turn-off storage time Turn-off fall time	f = 64 kHz;	t.b.f t.b.f	t.b.f t.b.f	μs ns

² Measured with half sine-wave voltage (curve tracer).

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MECHANICAL DATA



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

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DEFINITIONS

Data sheet status				
Objective specification	jective specification This data sheet contains target or goal specifications for product development.			
Preliminary specification	ry specification This data sheet contains preliminary data; supplementary data may be published later.			
Product specification	This data sheet contains final product specifications.			
Limiting values				
or more of the limiting val operation of the device at	in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one ues may cause permanent damage to the device. These are stress ratings only and these or at any other conditions above those given in the Characteristics sections of applied. 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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