

NPN BU508DF

SILICON DIFFUSED POWER TRANSISTORS

The BU508DF is NPN transistors in a fully isolated SOT199 envelope (with integrated efficiency diode for the BU508DF).

They are a high voltage, high speed switching and they are intended for use in horizontal deflexion circuits of colour television receivers.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	700	V
V_{CESM}	Collector-Emitter Voltage	$V_{BE} = 0$	1500	V
I_C	Collector Current		8	A
I_{CM}	Collector Peak Current		15	A
I_B	Base Current		4	A
I_{Csat}	Collector Current saturation		4.5	A
I_{BM}	Base Peak Current		6	A
P_t	Total Power Dissipation	@ $T_C = 25^\circ$	34	Watts
T_J	Junction Temperature		150	$^\circ\text{C}$
T_{Stg}	Storage Temperature		-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-mb}	Thermal Resistance, Junction to Mounting Base		1.0	K/W
R_{thJ-h}	Thermal Resistance, Junction to Hexternal Heatsink		3.7	K/W
R_{thJ-h}	Thermal Resistance, Junction to Hexternal Heatsink		2.8	K/W
R_{thJ-a}	Thermal Resistance, Junction to Ambient		35	K/W

ISOLATION

Symbol	Ratings		Value	Unit
V_{ISOL}	Isolation Voltage from all terminals to external heatsink (peak value)		1500	V
C_{ISOL}	Isolation capacitance from collector to external heatsink	Typ.	21	pF

ELECTRICAL CHARACTERISTICS

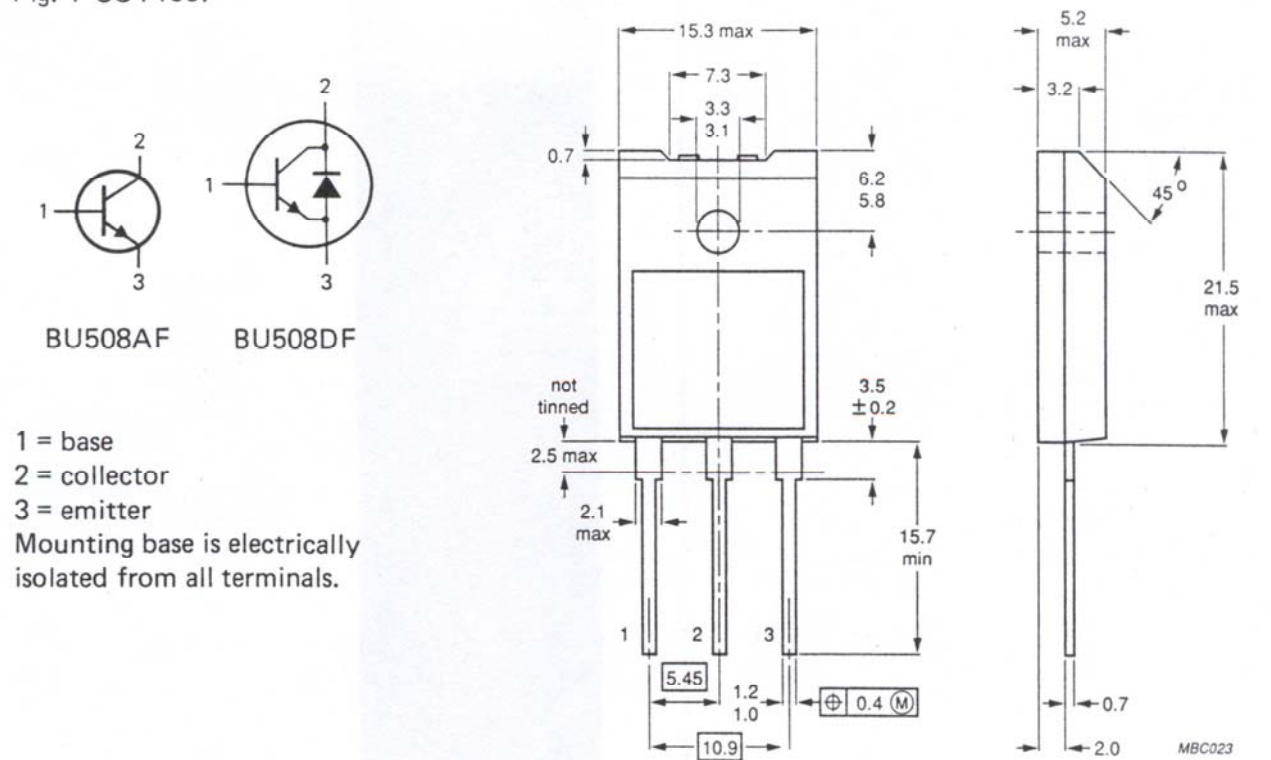
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
I_{CES}	Collector Cutoff Current	$V_{CE} = V_{CESM} = 1500\text{ V}, V_{BE} = 0$	-	-	1	mA
		$V_{CE} = V_{CESM} = 1500\text{ V}, V_{BE} = 0, T_i = 125^\circ\text{C}$	-	-	2	
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 0.1\text{ A}, I_B = 0, L = 25\text{ mH}$	700	-	-	V
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 6.0\text{ V}, I_C = 0$	-	-	10	mA
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 4.5\text{ A}, I_B = 2\text{ A}$	-	-	1.0	V
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 4.5\text{ A}, I_B = 2\text{ A}$	-	-	1.3	
V_F	Forward Voltage	$I_F = 4.5\text{ A}$	-	1.6	2	V
H_{FE}	DC Current Gain	$I_C = 100\text{ mA}, V_{CE} = 5.0\text{ V}$	5	13	30	-
f_T	Transition frequency	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}, f = 5\text{ MHz}$	-	7	-	MHz
C_c	Collector capacitance	$I_E = I_C = 0, V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	-	125	-	pF
t_s	Storage Time	$-V_{IM} = 4\text{ V}, L_B = 6\mu\text{H}$ $I_C = I_{Csat}, I_B = 1.4\text{ A} (-dI_B/dt = 0.6\text{ A}/\mu\text{s})$	-	6.5	-	μs
t_f	Fall Time		-	0.7	-	

MECHANICAL DATA CASE SOT199

MECHANICAL DATA

Fig. 1 SOT199.



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Data are subject to change without notice.