

NPN BU508DF

SILICON DIFFUSED POWER TRANSISTOR

The BU508DF is a NPN epitaxial-base transistor in TO3PFa package with integrated efficiency diode.

It is intended for high voltage, high-speed.

Primarily for use in horizontal deflection circuits of colour television receivers.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CBO}	Collector-Base Voltage	1500	V
V_{CEO}	Collector-Emitter Voltage	700	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	8	A
I_{CM}	Collector Current Peak	15	A
I_B	Base Current	4	A
I_{BM}	Base Current Peak	6	A
P_T	Total Dissipation @ $T_{mb} < 25^\circ$	34	W
t_J	Junction Temperature	150	°C
t_s	Storage Temperature range	-65 to +150	

THERMAL CHARACTERISTICS

Symbol	Ratings	Conditions	Value		Unit
			Typ.	Max	
R_{thJC}	Junction To Heatsink	Without Heatsink Compound	-	3.7	K/W
	Junction To Heatsink	With Heatsink Compound	-	2.8	
	Junction Ambient	In Free Air	35	-	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
V_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 100 \text{ mA}$, $I_B = 0$ $L = 25 \text{ mH}$	700	-	-	V
I_{CES}	Collector Cutoff Current	$V_{BE} = 0$, $V_{CE} = 1500 \text{ V}$	-	-	1	mA
		$V_{BE} = 0$, $V_{CE} = 1500 \text{ V}$ $T_j = 125^\circ\text{C}$	-	-	2	
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5 \text{ V}$, $I_C = 0$	-	-	300	mA
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 4.5 \text{ A}$, $I_B = 1.6 \text{ A}$	-	-	1	V
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 4.5 \text{ A}$, $I_B = 2 \text{ A}$	-	-	1.1	
V_F	Diode Forwardvoltage	$I_F = 4.5 \text{ A}$	-	1.6	2	V
h_{FE}	DC Current Gain	$I_C = 500 \text{ mA}$, $V_{CE} = 5 \text{ V}$	10	-	30	-
C_{OB}	Output Capacitance	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$	3	-	-	A
f_T	Transition Frequency	$V_{CE} = 5 \text{ V}$, $I_C = 100 \text{ mA}$	-	7	-	MHz

