

**Silicon NPN Power Transistor**

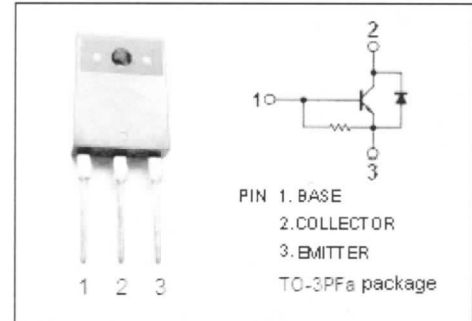
**BU2520DF**

**DESCRIPTION**

- High Switching Speed
- High Voltage
- Built-in Ddamper Ddiode

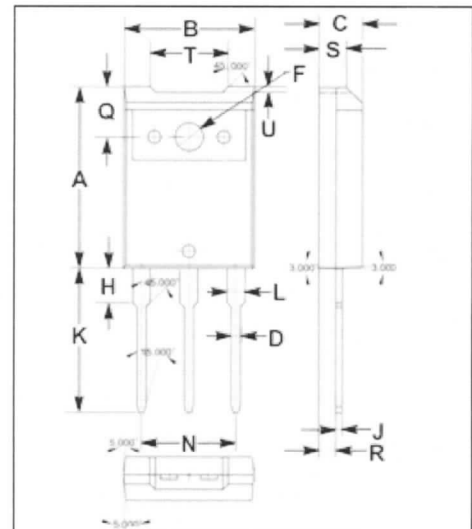
**APPLICATIONS**

- For use in horizontal deflection circuits of large screen color TV receivers



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	1500	V
V <sub>CEO</sub>	Collector-Emitter Voltage	800	V
V <sub>EBO</sub>	Emitter-Base Voltage	7.5	V
I <sub>C</sub>	Collector Current-Continuous	10	A
I <sub>CM</sub>	Collector Current-peak	25	A
I <sub>B</sub>	Base Current-Continuous	6	A
I <sub>BM</sub>	Base Current-peak	9	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	45	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C



DIM	mm	
	MIN	MAX
A	20.70	21.30
B	14.70	15.30
C	4.80	5.20
D	0.90	1.10
F	3.20	3.40
H	3.70	4.30
J	0.50	0.70
K	16.40	17.00
L	1.90	2.10
N	10.80	11.00
Q	5.60	6.00
R	1.80	2.20
S	3.10	3.50
T	8.70	9.30
U	0.55	0.75

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	2.8	K/W

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# BU2520DF

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; I_B=0, L=25\text{mH}$	800			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=600\text{mA}; I_C=0$	7.5	13.5		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=1.2\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=1.2\text{A}$			1.1	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=BV_{CES}; V_{BE}=0$ $V_{CE}=BV_{CES}; V_{BE}=0; T_C=125^\circ\text{C}$			1.0 2.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=7.5\text{V}; I_C=0$	100		300	mA
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$		13		
$h_{FE-2}$	DC Current Gain	$I_C=6\text{A}; V_{CE}=5\text{V}$	5	7	9.5	
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=6\text{A}$			2.2	V
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		115		pF

Switching times (16kHz line deflection circuit)

$t_{stg}$	Storage Time	$I_C=6\text{A}, I_{B(end)}=1.0\text{A}; L_B=5.3\mu\text{H};$ $L_C=650\mu\text{H}; C_{fb}=19\text{nF};$ $-V_{BB}=4\text{V}; (-di_B/dt=0.8\text{A}/\mu\text{s})$			5.5	$\mu\text{s}$
$t_f$	Fall Time				0.5	$\mu\text{s}$