New Jersey Semi-Conductor Products, Inc.

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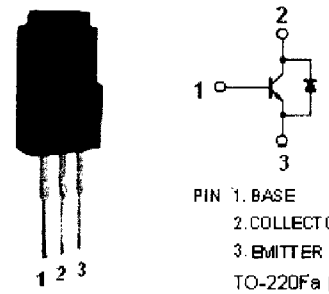
Silicon NPN Power Transistor — BU506DF

DESCRIPTION

- High Voltage
- High Switching Speed
- Built-in Integrated Efficiency Diode

APPLICATIONS

- Designed for use in horizontal deflection circuits of color TV receivers and in line-operated switch-mode applications



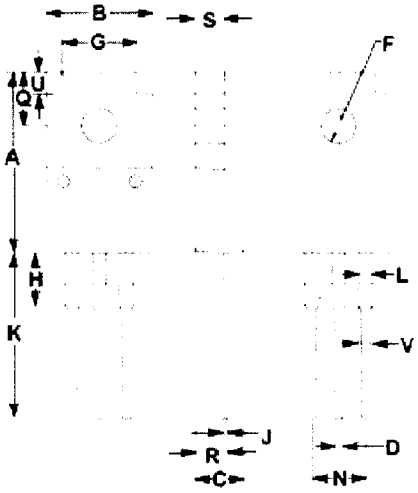
PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220Fa package

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage-V_{BE}=0	1500	V
V_{CEO}	Collector-Emitter Voltage	700	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	8	A
I_B	Base Current-Continuous	3	A
I_{BM}	Base Current-Peak	5	A
P_C	Collector Power Dissipation @ T_C=25℃	20	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	6.35	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	55	℃/W



DIM	mm MIN	mm MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 100mA ; I_B= 0; L= 25mH	700			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 3A; I_B= 1.33A			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 3A; I_B= 1.33A			1.3	V
I_{CES}	Collector Cutoff Current	V_{CE}= V_{CESmax}; V_{BE}= 0 V_{CE}= V_{CESmax}; V_{BE}= 0;T_J= 125℃			0.5 1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C= 0			10	mA
h_{FE}	DC Current Gain	I_C= 3A ; V_{CE}= 5V	2.25			
V_{ECF}	C-E Diode Forward Voltage	I_F= 3A		1.5	2.2	V

Switching times; Resistive load

t_{stg}	Storage Time	I_C= 3A , $I_{B(end)}$= 1A; L_B= 12 μ H		6.5		μ s
t_f	Fall Time			0.7		μ s