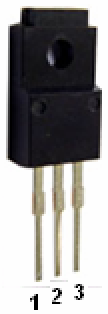
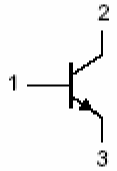
Silicon NPN Power Transistor BUT76AF





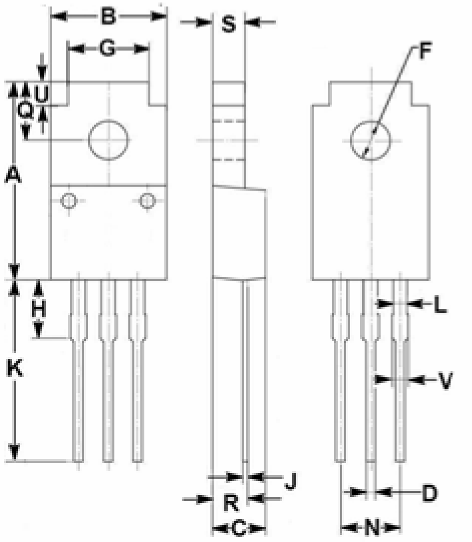
PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220Fa package

DESCRIPTION

- High Voltage
- High Speed Switching
- High Power Dissipation

APPLICATIONS

- Designed for switching mode power supply, inverters, motor control and relay driver applications.



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

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	3	A
I_{BM}	Base Current-peak	6	A
P_C	Collector Power Dissipation @T_C=25℃	40	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	1.13	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 0.5A; I_B= 0; L= 125mH	450			V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C= 1mA; V_{BE}= -1.5V	1000			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA; I_C= 0	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 1A			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 1A			1.6	V
I_{CES}	Collector Cutoff Current	V_{CE}=1000V;V_{BE}= -1.5V V_{CE}=1000V;V_{BE}=-1.5V;T_C=100℃			0.5 2.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C= 0			0.5	mA
h_{FE}	DC Current Gain	I_C= 8A ; V_{CE}= 3V	3.2			
f_T	Current-Gain—Bandwidth Product	I_C= 1A ; V_{CE}= 10V		7		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}= 1.0MHz		150		pF

Switching Times;Resistive Load

t_{on}	Turn-On Time	I_C= 5A;I_{B1}= -I_B= 1A; V_{CE}= 150V			1.0	μs
t_s	Storage Time				3.0	μs
t_f	Fall Time				0.8	μs