

isc Silicon NPN Power Transistor

BUT76AF

DESCRIPTION

- High Voltage
- High Speed Switching
- High Power Dissipation

APPLICATIONS

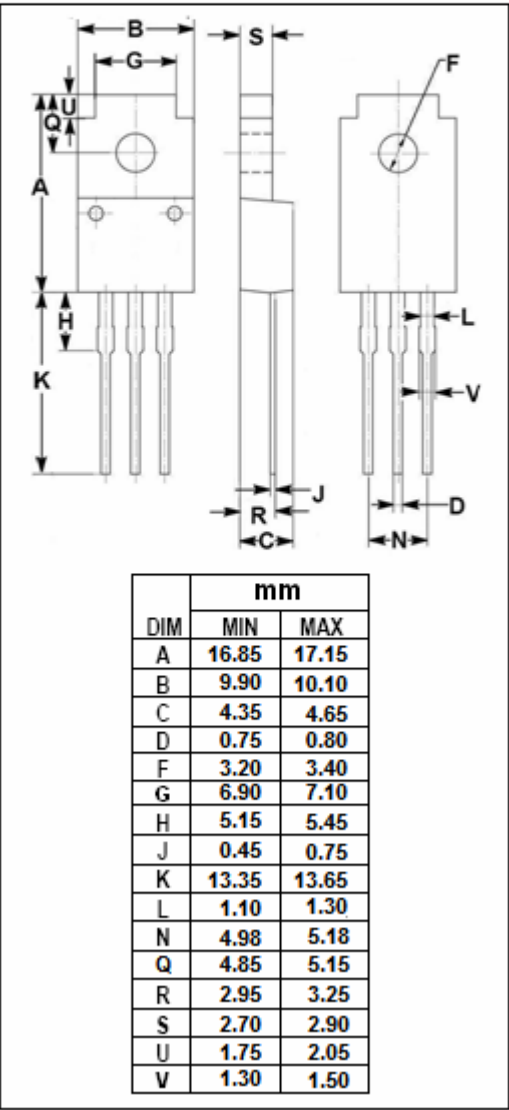
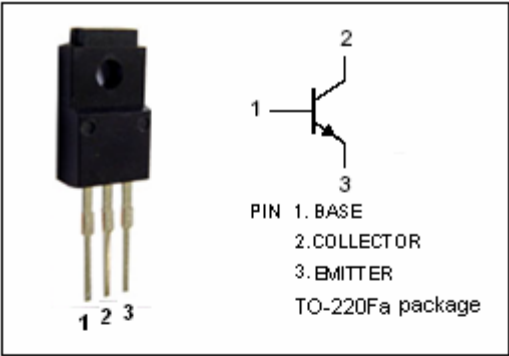
- Designed for switching mode power supply, inverters, motor control and relay driver applications.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

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°C	40	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.13	°C/W



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ELECTRICAL CHARACTERISTICS

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

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

Switching Times; Resistive Load

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