

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

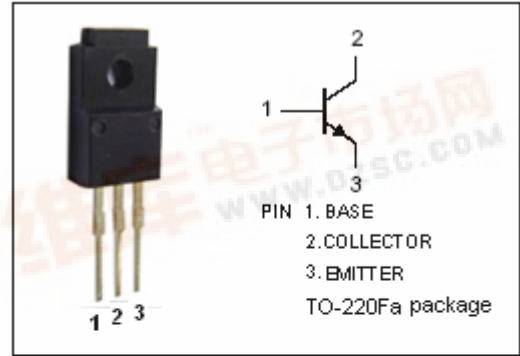
BUF405AFI

DESCRIPTION

- High Voltage
- High Speed Switching

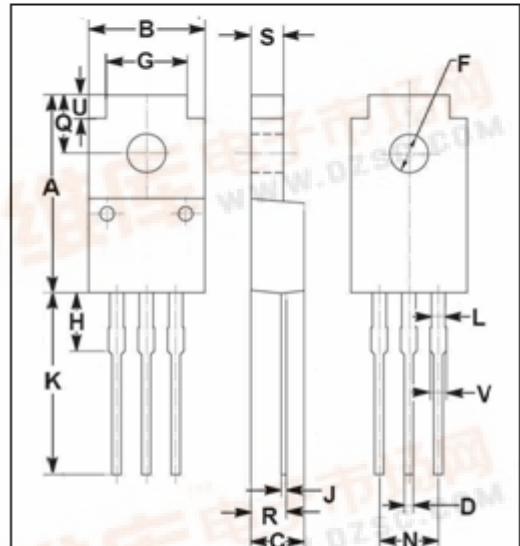
APPLICATIONS

- Designed for high reliability industrial and professional power driving applications such as motor drivers and off-line switching power supplies.



ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CEV}	Collector-Emitter Voltage V _{BE} = -1.5V	1000	V
V _{CEO}	Collector-Emitter Voltage	450	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current-Continuous	7.5	A
I _{CM}	Collector Current-Peak	15	A
I _B	Base Current-Continuous	3	A
I _{BM}	Base Current-peak	4.5	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



DIM	mm	
	MIN	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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	3.2	°C/W



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{mH}$	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}; I_C=0$	7			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=2.5\text{A}; I_B=0.25\text{A}$		0.8		V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$		0.5		V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=2.5\text{A}; I_B=0.25\text{A}$		0.9		V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$		1.1		V
I_{CER}	Collector Cutoff Current	$V_{CE}=V_{CEV}; R_{BE}=5\Omega$ $V_{CE}=V_{CEV}; R_{BE}=5\Omega; T_C=100^\circ\text{C}$			0.1 0.5	mA
I_{CEV}	Collector Cutoff Current	$V_{CE}=V_{CEV}; V_{BE}=-1.5\text{V}$ $V_{CE}=V_{CEV}; V_{BE}=-1.5\text{V}; T_C=100^\circ\text{C}$			0.1 0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA

Switching Times

t_s	Storage Time	$I_C=2.5\text{A}; I_{B1}=0.25\text{A}; V_{CC}=50\text{V};$ $V_{BB}=-5\text{V}; R_{BB}=2.4\Omega; L=1\text{mH}$ $V_{clamp}=400\text{V}$		0.8		μs
t_f	Fall Time			0.05		μs