

isc Silicon NPN Power Transistor

BUF405AFP

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V$ (Min.)
- High Speed Switching
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

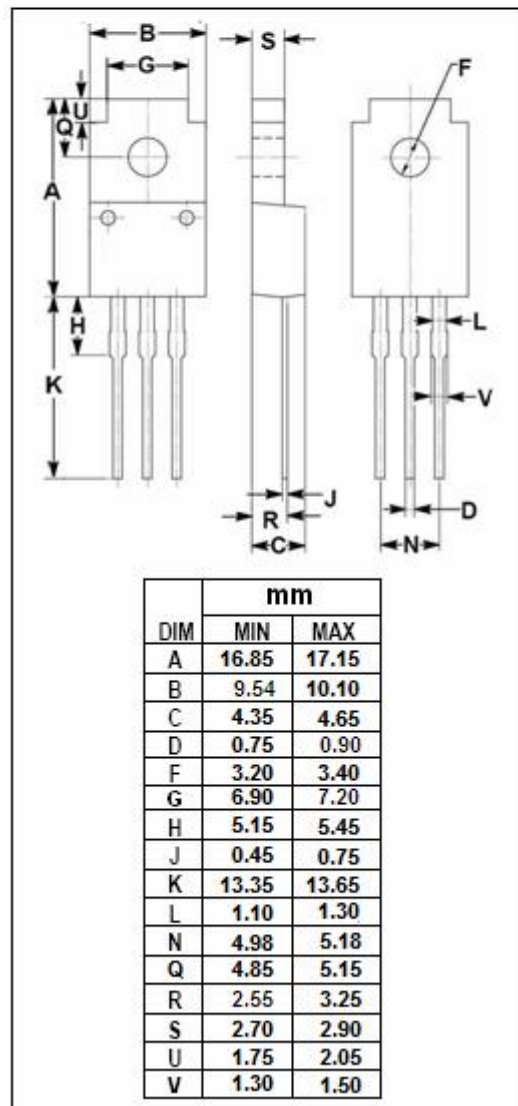
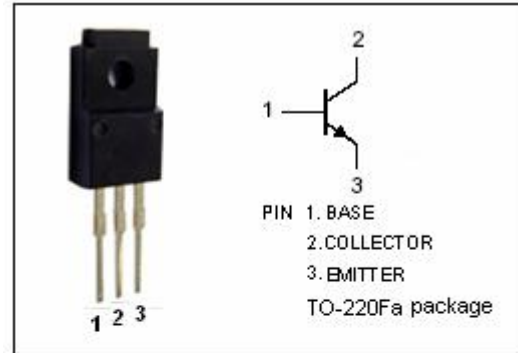
- Designed for high reliability industrial and professional power driving applications such as motor drivers and off-line switching power supplies.

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}C$)

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 @ $T_c=25^{\circ}C$	39	W
T_j	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	3.2	$^{\circ}C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	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	$I_C=2.5\text{A}; I_B=0.25\text{A}; V_{CC}=50\text{V};$ $V_{BB}=-5\text{V}; R_{BB}=2.4\Omega; L=1\text{mH}$ $V_{clamp}=400\text{V}$		0.8		μs
t_f	Fall Time			0.05		μs

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