

isc Silicon NPN Power Transistor

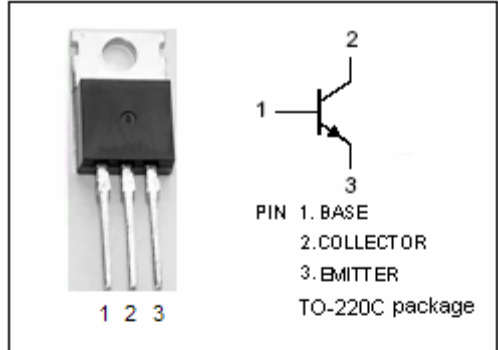
BUF410A

DESCRIPTION

- High Voltage
- High Speed Switching

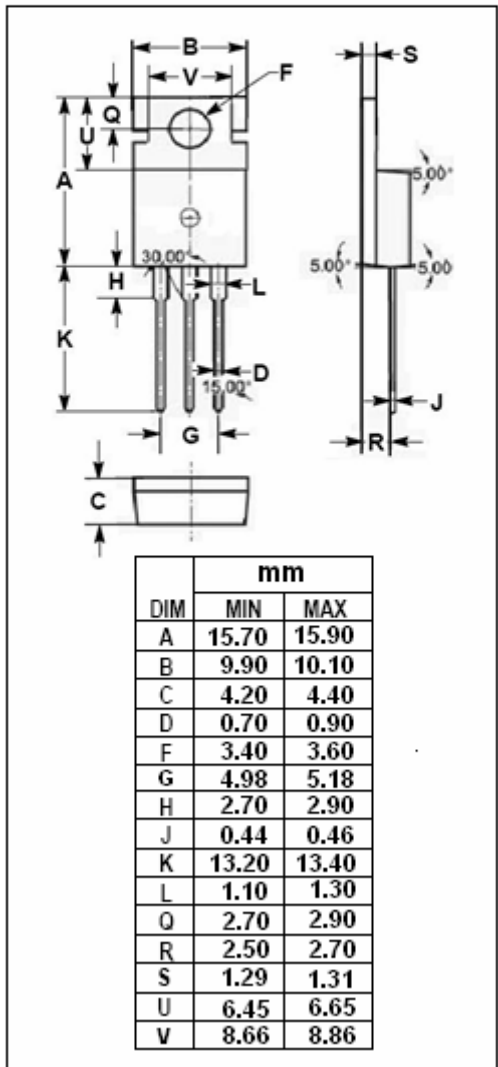
APPLICATIONS

- Designed for use in high-frequency power supplies and motor control applications.



ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CEV</sub>	Collector-Emitter Voltage V <sub>BE</sub> = -1.5V	1000	V
V <sub>CEO</sub>	Collector-Emitter Voltage	450	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	15	A
I <sub>CM</sub>	Collector Current-Peak	30	A
I <sub>B</sub>	Base Current-Continuous	3	A
I <sub>BM</sub>	Base Current-peak	4.5	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	125	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-65~150	°C



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.0	°C/W

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## BUF410A

## 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	$I_C=5\text{A}; I_B=0.5\text{A}$		0.8		V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$		0.5		V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		0.9		V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$		1.1		V
$I_{CER}$	Collector Cutoff Current	$V_{CE}=V_{CEV}; R_{BE}=100\ \Omega$ $V_{CE}=V_{CEV}; R_{BE}=100\ \Omega; T_C=100^\circ\text{C}$			0.2 1.0	mA
$I_{CEV}$	Collector Cutoff Current	$V_{CE}=V_{CEV}; V_{BE}=-1.5\text{V}$ $V_{CE}=V_{CEV}; V_{BE}=-1.5\text{V}; T_C=100^\circ\text{C}$			0.2 1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA

## Switching Times; Resistive Load

$t_s$	Storage Time	$I_C=5\text{A}; I_{B1}=0.5\text{A}; V_{CC}=50\text{V};$ $V_{BB}=-5\text{V}; R_{BB}=1.2\ \Omega; L=0.5\text{mH}$ $V_{clamp}=400\text{V}$		0.8		$\mu\text{s}$
$t_f$	Fall Time			0.05		$\mu\text{s}$