

isc Silicon NPN Power Transistor

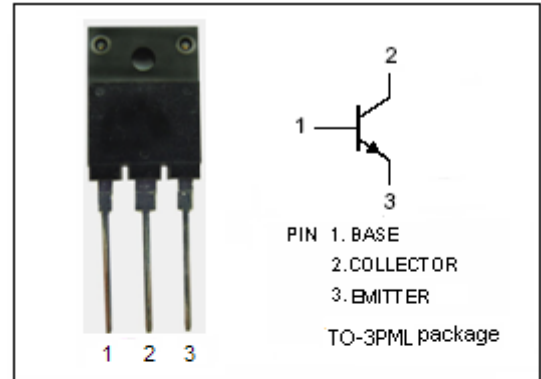
BUV47AFI

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min.})$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max.})@I_C = 5A$
- High Speed Switching

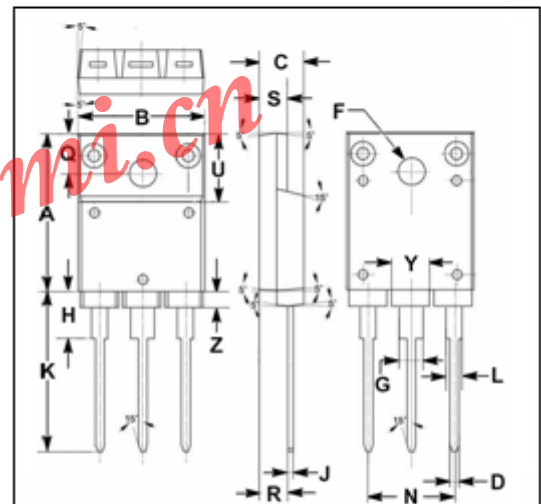
APPLICATIONS

- Designed for 220V switchmode power supply, DC and AC motor control applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CER}	Collector-Emitter Voltage $R_{BE} = 10\ \Omega$	1000	V
V_{CES}	Collector-Emitter Voltage $V_{BE} = 0$	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	9	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	8	A
I_{BM}	Base Current-Peak	10	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	55	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.90	16.10
C	5.50	5.70
D	0.90	1.10
F	3.30	3.50
G	2.90	3.10
H	5.90	6.10
J	0.595	0.605
K	22.30	22.50
L	1.90	2.10
N	10.80	11.00
O	4.90	5.10
R	3.75	3.95
S	3.20	3.40
U	9.90	10.10
Y	4.70	4.90
Z	1.90	2.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.27	$^\circ\text{C/W}$

isc Silicon NPN Power Transistor

BUV47AFI

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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	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	$I_C=5\text{A}; I_B=1\text{A}$			1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=2.5\text{A}$			3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$			1.6	V
I_{CER}	Collector Cutoff Current	$V_{CE}=850\text{V}; R_{BE}=10\ \Omega$ $V_{CE}=850\text{V}; R_{BE}=10\ \Omega; T_C=125^{\circ}\text{C}$			0.4 3.0	mA
I_{CEV}	Collector Cutoff Current	$V_{CE}=850\text{V}; V_{BE}=-2.5\text{V}$ $V_{CE}=850\text{V}; V_{BE}=-2.5\text{V}; T_C=125^{\circ}\text{C}$			0.15 1.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA

Switching Times, Resistive Load

t_{on}	Turn-on Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=1\text{A}; V_{CC}=150\text{V}$			0.7	μs
t_s	Storage Time				3.0	μs
t_f	Fall Time				0.8	μs