

isc Silicon NPN Power Transistor

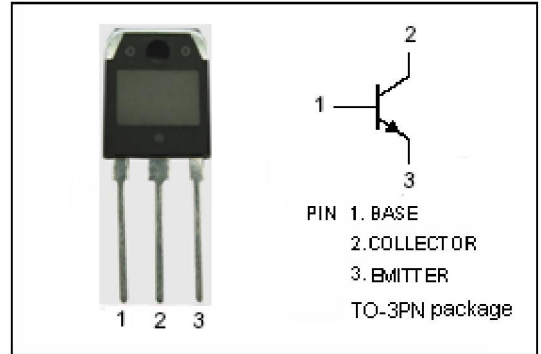
BUX12P

DESCRIPTION

- Low Collector Saturation Voltage
- High Switching Speed
- High Current Current Capability

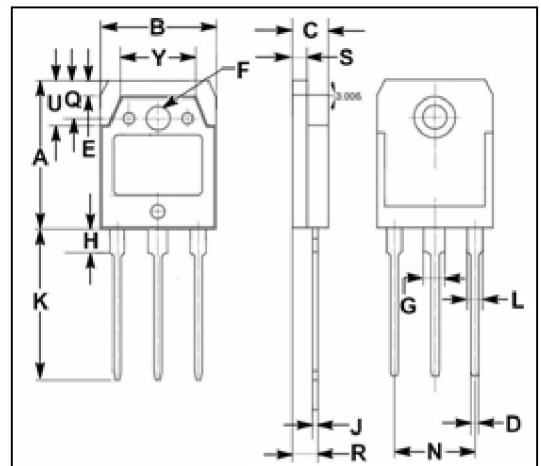
APPLICATIONS

- Power switching circuits
- Motor control



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CBO}	Collector-Base Voltage	300	V
V _{CEX}	Collector-Emitter Voltage V _{BE} = -1.5V	300	V
V _{CEO}	Collector-Emitter Voltage	250	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current-Continuous	20	A
I _{CM}	Collector Current-Peak	25	A
I _B	Base Current-Continuous	4	A
P _C	Collector Power Dissipation @T _C =25°C	106	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-65~150	°C



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.17	°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	$I_C=0.1\text{A}; I_B=0$	250			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1.25\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1.25\text{A}$			1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=200\text{V}; I_B=0$			1.5	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=300\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=300\text{V}; V_{BE}=-1.5\text{V}; T_C=125^{\circ}\text{C}$			1.5 6.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=5\text{A}; V_{CE}=4\text{V}$	20		60	
h_{FE-2}	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	10			
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=15\text{V}; f_{test}=10\text{MHz}$	8			MHz

Switching Times

t_{on}	Turn-on Time	$I_C=10\text{A}; I_{B1}=1.25\text{A}; V_{CC}=150\text{V}$			1.0	μs
t_s	Storage Time	$I_C=10\text{A}; I_{B1}=-I_{B2}=1.25\text{A};$ $V_{CC}=150\text{V}$			2.0	μs
t_f	Fall Time				0.5	μs