

isc Silicon NPN Power Transistor

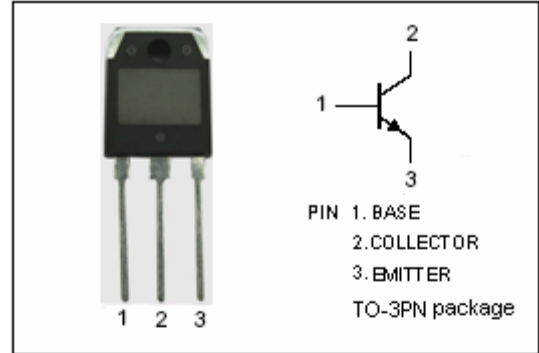
BUV50

DESCRIPTION

- High Current Capability
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 0.8V$  (Max.) @  $I_C = 10A$
- High Switching Speed

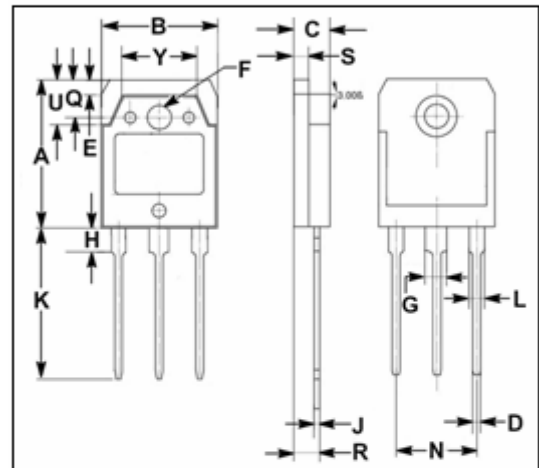
APPLICATIONS

- Designed for high current, high speed, high power applications.



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEV}$	Collector-Emitter Voltage ( $V_{BE} = -1.5V$ )	250	V
$V_{CEO}$	Collector-Emitter Voltage	125	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	25	A
$I_{CM}$	Collector Current-Peak	50	A
$I_B$	Base Current-Continuous	6	A
$I_{BM}$	Base Current-peak	12	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ C$	150	W
$T_j$	Junction Temperature	175	°C
$T_{stg}$	Storage Temperature Range	-65~175	°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	1.0	°C/W

## isc Silicon NPN Power Transistor

## BUV50

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}$ ; $I_B=0$ ; $L=25\text{mH}$	125		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	$I_C=10\text{A}$ ; $I_B=0.5\text{A}$ $I_C=10\text{A}$ ; $I_B=0.5\text{A}$ ; $T_C=100^{\circ}\text{C}$		0.8 0.9	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}$ ; $I_B=2\text{A}$ $I_C=20\text{A}$ ; $I_B=2\text{A}$ ; $T_C=100^{\circ}\text{C}$		0.9 1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}$ ; $I_B=2\text{A}$ $I_C=20\text{A}$ ; $I_B=2\text{A}$ ; $T_C=100^{\circ}\text{C}$		1.6 1.7	V
$I_{CER}$	Collector Cutoff Current	$V_{CE}=V_{CEV}$ ; $R_{BE}=10\Omega$ $V_{CE}=V_{CEV}$ ; $R_{BE}=10\Omega$ ; $T_C=100^{\circ}\text{C}$		1.0 5.0	mA
$I_{CEV}$	Collector Cutoff Current	$V_{CE}=V_{CEV}$ ; $V_{BE}=-1.5\text{V}$ $V_{CE}=V_{CEV}$ ; $V_{BE}=-1.5\text{V}$ ; $T_C=100^{\circ}\text{C}$		1.0 5.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}$ ; $I_C=0$		1.0	mA
$h_{FE}$	DC Current Gain	$I_C=10\text{A}$ ; $V_{CE}=4\text{V}$	20		

## Switching times Resistive Load

$t_r$	Rise Time	$I_C=24\text{A}$ ; $I_{B1}=3\text{A}$ ; $V_{CC}=100\text{V}$ $V_{BB}=-5\text{V}$ , $R_B=0.83\Omega$ ; $t_p=30\mu\text{s}$		0.6	$\mu\text{s}$
$t_s$	Storage Time			1.2	$\mu\text{s}$
$t_f$	Fall Time			0.3	$\mu\text{s}$