

**isc Silicon NPN Power Transistor**

**BU999**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 140V(\text{Min})$
- High Switching Speed
- High Power Dissipation

**APPLICATIONS**

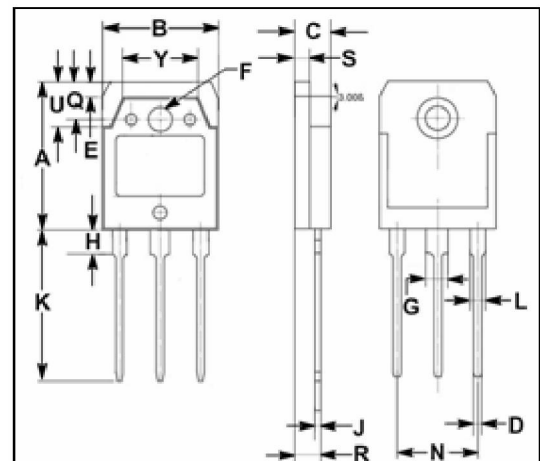
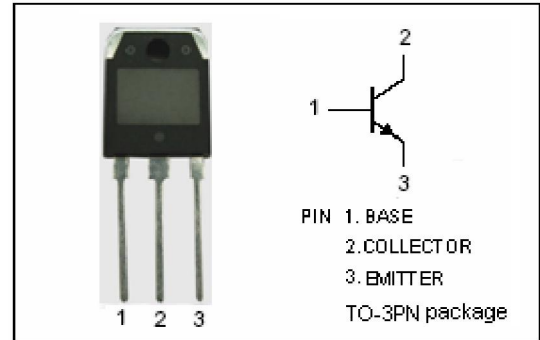
- Designed for switching and linear applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	160	V
$V_{CEO}$	Collector-Emitter Voltage	140	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	25	A
$I_{CP}$	Collector Current-Pulse	40	A
$I_B$	Base Current-Continuous	10	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	106	W
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~200	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.08	$^\circ\text{C/W}$



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

**isc Silicon NPN Power Transistor****BU999****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	$I_C=50\text{mA}; I_B=0$	140			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$			0.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			1.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$			1.8	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			2.5	V
$V_{BE(on)}$	Base -Emitter On Voltage	$I_C=10\text{A}; V_{CE}=2\text{V}$			1.8	V
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=140\text{V}; V_{BE}=-1.5\text{V}$			10	$\mu\text{A}$
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=160\text{V}; I_E=0$			100	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=70\text{V}; I_B=0$			50	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			100	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=2\text{V}$	35			
$h_{FE-2}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=2\text{V}$	25		100	
$h_{FE-3}$	DC Current Gain	$I_C=25\text{A}; V_{CE}=2\text{V}$	12			

## Switching times

$t_{on}$	Turn-on Time	$I_C=10\text{A}, I_{B1}=-I_{B2}=1\text{A}, V_{CC}=80\text{V}$			0.3	$\mu\text{s}$
$t_{stg}$	Storage Time				1.5	$\mu\text{s}$
$t_f$	Fall Time				0.25	$\mu\text{s}$