

isc Silicon NPN Power Transistor

BUX42

DESCRIPTION

- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.2V$ (Max.)@ $I_C = 4A$
- Fast Switching Speed

APPLICATIONS

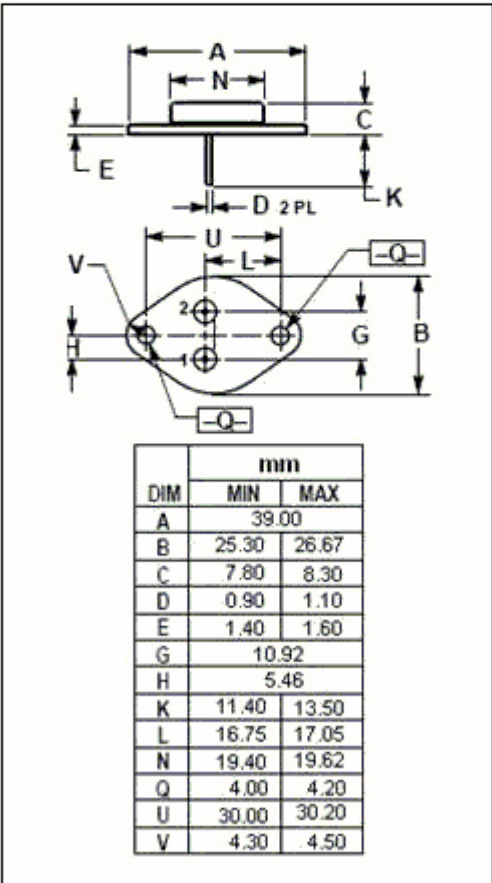
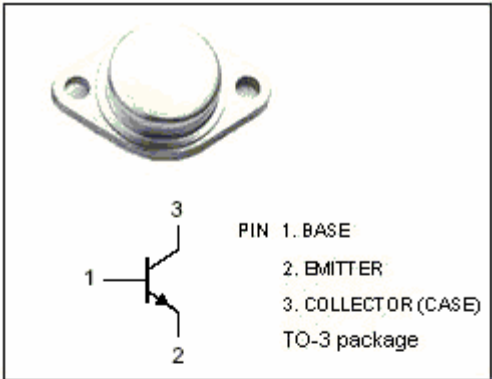
- Designed for use in switching and linear applications in military and industrial equipment.

Absolute maximum ratings($T_a=25^{\circ}C$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEO}	Collector-Emitter Voltage	250	V
V_{CEX}	Collector-Emitter Voltage $V_{BE} = -1.5V$	300	V
V_{CBO}	Collector-Base Voltage	300	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	2.4	A
P_C	Collector Power Dissipation @ $T_C = 25^{\circ}C$	120	W
T_j	Junction Temperature	200	$^{\circ}C$
T_{stg}	Storage Temperature Range	-65~200	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.46	$^{\circ}C/W$



ISC Silicon NPN Power Transistor

BUX42

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	$I_C=0.2\text{A}$; $I_B=0$	250			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	$I_C=4\text{A}$; $I_B=0.4\text{A}$			1.2	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}$; $I_B=0.75\text{A}$			1.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}$; $I_B=0.75\text{A}$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=200\text{V}$; $I_B=0$			1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=300\text{V}$; $V_{BE}=-1.5\text{V}$ $V_{CE}=300\text{V}$; $V_{BE}=-1.5\text{V}$; $T_C=125^{\circ}\text{C}$			1.0 5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			1	mA
h_{FE-1}	DC Current Gain	$I_C=4\text{A}$; $V_{CE}=4\text{V}$	15		45	
h_{FE-2}	DC Current Gain	$I_C=6\text{A}$; $V_{CE}=4\text{V}$	8			
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	$I_C=6\text{A}$; $I_{B1}=0.75\text{A}$; $V_{CC}=150\text{V}$		0.23	1.0	μs
t_s	Storage Time	$I_C=6\text{A}$; $I_{B1}=-I_{B2}=0.75\text{A}$; $V_{CC}=150\text{V}$		1.5	2.0	μs
t_f	Fall Time			0.2	1.2	μs