

isc Silicon NPN Power Transistor

BUX77X

DESCRIPTION

- Continuous Collector Current- $I_C= 5A$
- Collector Power Dissipation-
: $P_C= 40W @T_C= 25^\circ C$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)}= 80V(\text{Min})$

APPLICATIONS

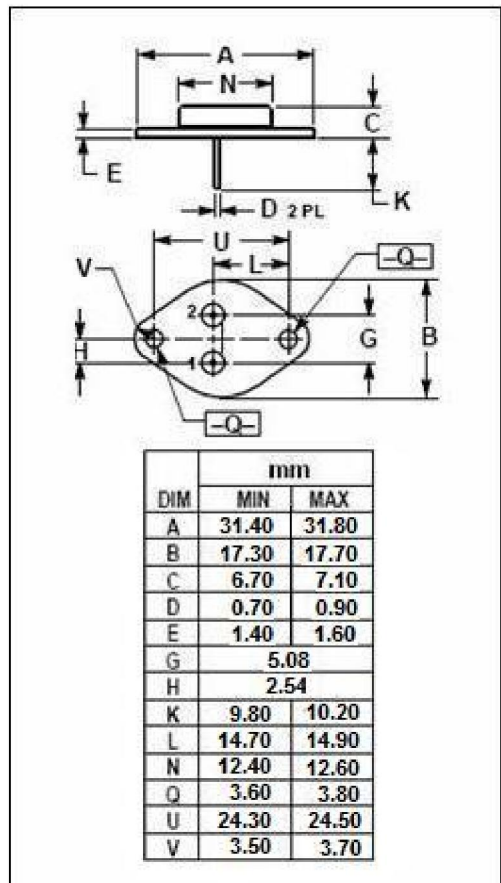
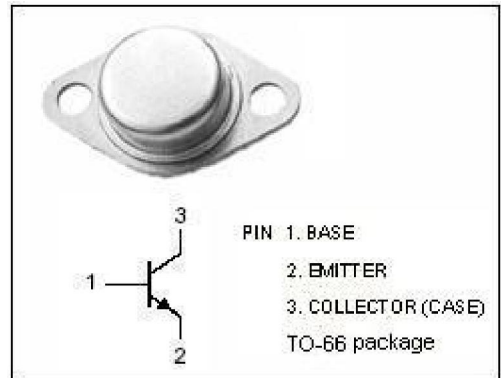
- Designed for use in switching regulators and general purpose power amplifiers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_B	Base Current-Continuous	0.8	A
P_C	Collector Power Dissipation@ $T_C=25^\circ C$	40	W
T_J	Junction Temperature	200	$^\circ C$
T_{stg}	Storage Temperature	-65~200	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.4	$^\circ C/W$



isc Silicon NPN Power Transistor**BUX77X****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	80		V
V_{CES}	Collector-Emitter Voltage	$I_C=2\text{mA}; V_{BE}=0$	100		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		1.3	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=60\text{V}; I_B=0$		10	μA
I_{CBO}	Collector Cutoff Current	$V_{CB}=80\text{V}; I_E=0$ $V_{CB}=80\text{V}; I_E=0, T_C=150^\circ\text{C}$		0.5 150	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=4\text{V}; I_C=0$		0.5	μA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	70		
h_{FE-2}	DC Current Gain	$I_C=2\text{A}; V_{CE}=5\text{V}$	50		120
h_{FE-3}	DC Current Gain	$I_C=5\text{A}; V_{CE}=5\text{V}$	30		
h_{FE-4}	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}; T_C=-40^\circ\text{C}$	25		
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	1.5		MHz

Switching Times

t_{on}	Turn-On Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}; V_{CC}=40\text{V}$		0.3	μs
t_{off}	Turn-Off Time			0.7	μs