

isc Silicon NPN Power Transistor

BUX41N

DESCRIPTION

- Collector-Emitter Voltage-
: $V_{CEO} = 160V(\text{Min})$
- High Current Capability
- Good Linearity of h_{FE}

APPLICATIONS

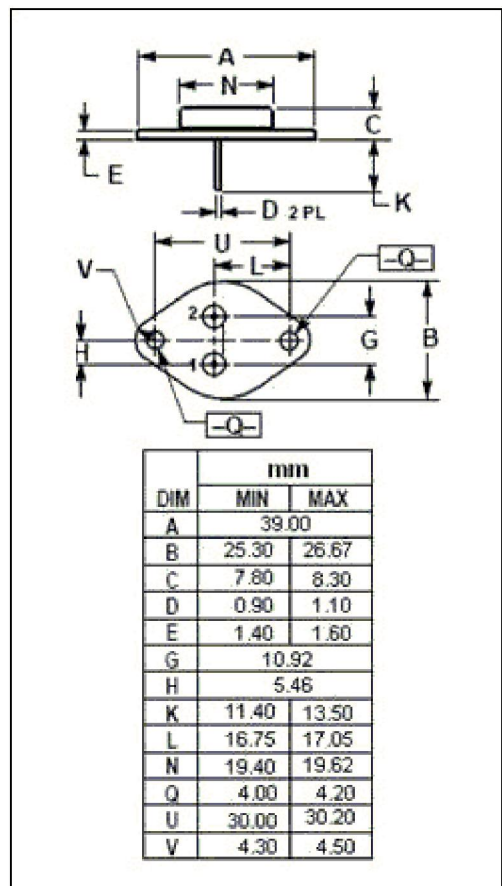
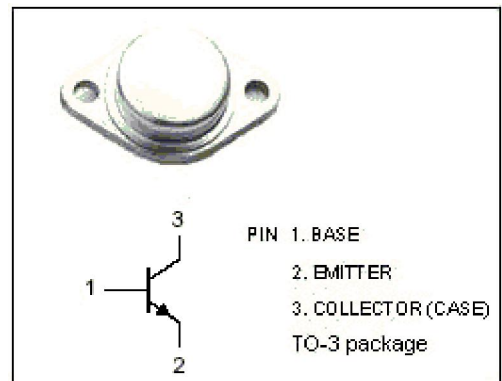
- Designed for high speed, high current, high power applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	220	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{CEX}	Collector-Emitter Voltage $V_{BE} = -1.5V$	220	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 100\Omega$	200	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	18	A
I_{CM}	Collector Current-Peak	25	A
I_B	Base Current-Continuous	3.6	A
P_C	Collector Power Dissipation @ $T_C=100^\circ\text{C}$	120	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}$; $I_B=0$, $L=25\text{mH}$	160			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	$I_C=8\text{A}$; $I_B=0.8\text{A}$			1.2	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=12\text{A}$; $I_B=1.5\text{A}$			1.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=12\text{A}$; $I_B=1.5\text{A}$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=130\text{V}$; $I_B=0$			1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=220\text{V}$; $V_{BE}=-1.5\text{V}$ $V_{CE}=220\text{V}$; $V_{BE}=-1.5\text{V}$; $T_C=125^{\circ}\text{C}$			1.0 5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=8\text{A}$; $V_{CE}=4\text{V}$	15		45	
h_{FE-2}	DC Current Gain	$I_C=12\text{A}$; $V_{CE}=4\text{V}$	8			
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}$; $V_{CE}=15\text{V}$; $f=10\text{MHz}$	8			MHz

Switching Times; Resistive Load

t_{on}	Turn-on Time	$I_C=12\text{A}$; $I_{B1}=-I_{B2}=1.5\text{A}$; $V_{CC}=30\text{V}$; $R_B=3.9\Omega$; $R_C=2.5\Omega$			1.3	μs
t_s	Storage Time				1.5	μs
t_f	Fall Time				0.8	μs