

**isc Silicon NPN Power Transistor**

**BUX41N**

**DESCRIPTION**

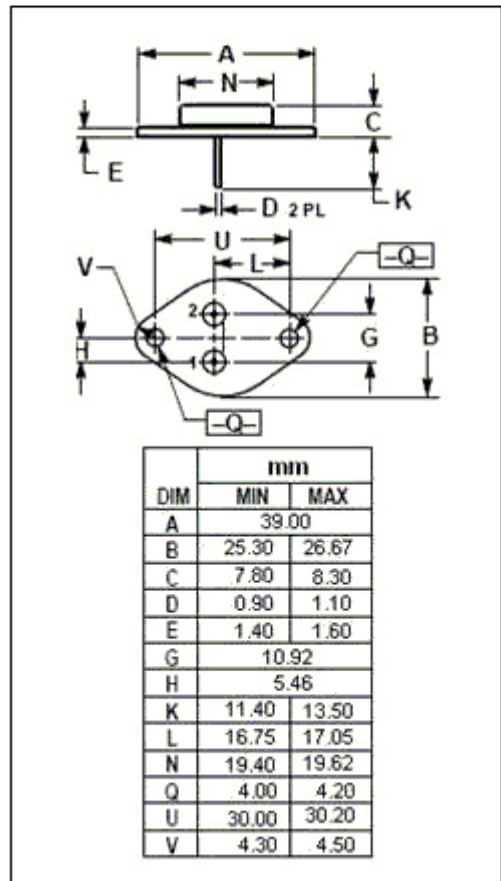
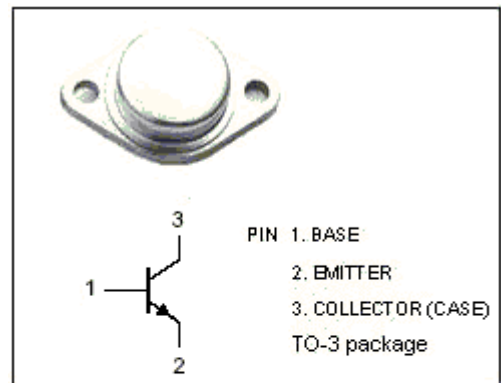
- Collector-Emitter Voltage-  
:  $V_{CEO} = 160V(\text{Min})$
- High Current Capability
- Good Linearity of  $h_{FE}$

**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	$^\circ\text{C}$



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**THERMAL CHARACTERISTICS**

<b>SYMBOL</b>	<b>PARAMETER</b>	<b>MAX</b>	<b>UNIT</b>
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.46	°C/W

**isc Silicon NPN Power Transistor****BUX41N****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	$I_C=200\text{mA}$ ; $I_B=0$ , $L=25\text{mH}$	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	$\mu\text{s}$
$t_s$	Storage Time				1.5	$\mu\text{s}$
$t_f$	Fall Time				0.8	$\mu\text{s}$