

**isc Silicon NPN Power Transistor**

**BUX21**

**DESCRIPTION**

- Low Collector Saturation Voltage-
- High Switching Speed
- High Current Current Capability

**APPLICATIONS**

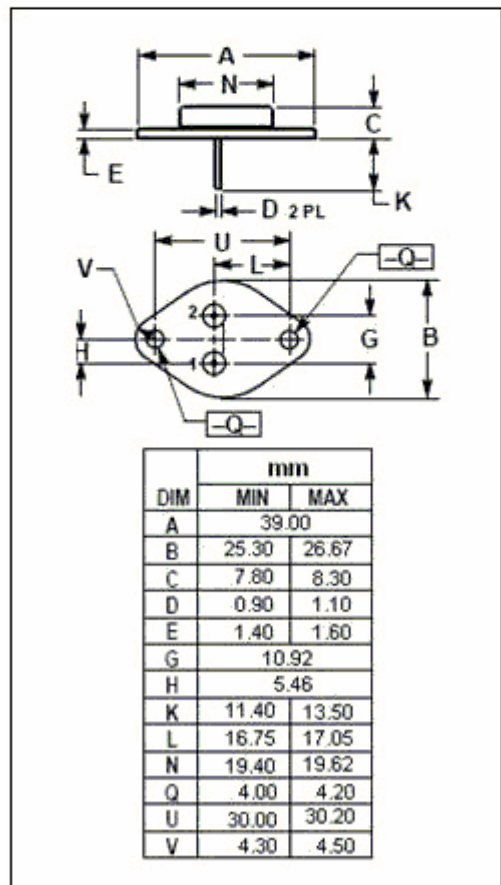
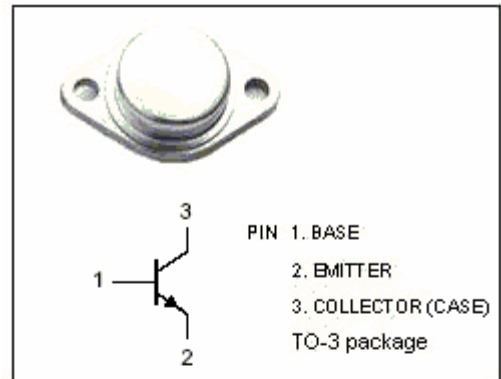
- Desinged for use in switching and linear applications in military and industrial equipment.

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	250	V
V <sub>CEX</sub>	Collector-Emitter Voltage V <sub>BE</sub> = -1.5V	250	V
V <sub>CEO</sub>	Collector-Emitter Voltage	200	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	40	A
I <sub>CM</sub>	Collector Current-Peak	50	A
I <sub>B</sub>	Base Current-Continuous	8	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	350	W
T <sub>j</sub>	Junction Temperature	200	°C
T <sub>stg</sub>	Storage Temperature Range	-65~200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	0.5	°C/W



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0$	200			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	$I_C=12\text{A}; I_B=1.2\text{A}$			0.6	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=3\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=3\text{A}$			1.5	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=160\text{V}; I_B=0$			3.0	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=250\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=250\text{V}; V_{BE}=-1.5\text{V}; T_C=125^{\circ}\text{C}$			3.0 12.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=12\text{A}; V_{CE}=2\text{V}$	20		60	
$h_{FE-2}$	DC Current Gain	$I_C=25\text{A}; V_{CE}=4\text{V}$	10			
$f_T$	Current-Gain—Bandwidth Product	$I_C=2\text{A}; V_{CE}=15\text{V}; f_{test}=10\text{MHz}$	8			MHz

## Switching Times

$t_{on}$	Turn-on Time	$I_C=25\text{A}; I_{B1}=3\text{A}; V_{CC}=100\text{V}$			1.2	$\mu\text{s}$
$t_s$	Storage Time	$I_C=25\text{A}; I_{B1}=-I_{B2}=3\text{A}; V_{CC}=100\text{V}$			1.8	$\mu\text{s}$
$t_f$	Fall Time				0.4	$\mu\text{s}$