

**isc Silicon NPN Power Transistors**

**BUX31/A/B**

**DESCRIPTION**

- High Switching Speed
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 400V$  (Min)-BUX31  
= 450V (Min)-BUX31A  
= 450V (Min)-BUX31B
- Low Saturation Voltage

**APPLICATIONS**

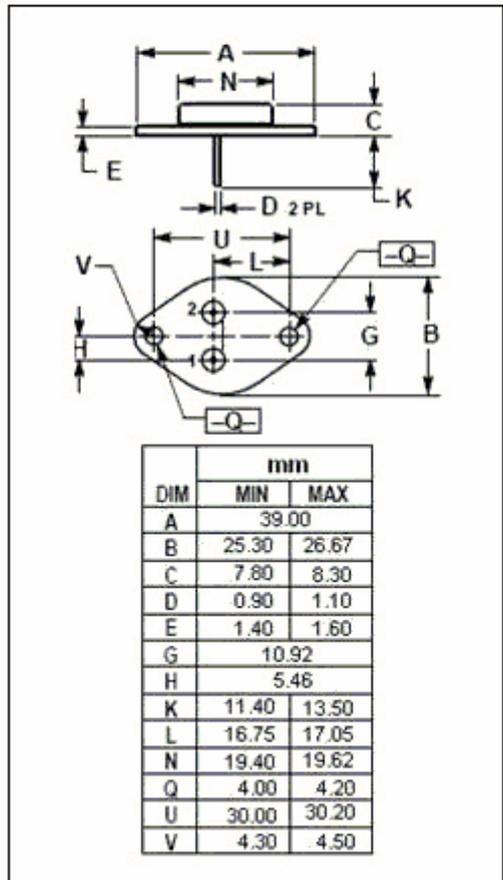
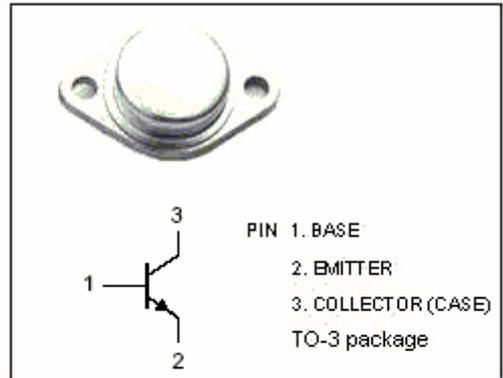
- Designed for off-line power supplies and are also well suited for use in a wide range of inverter or converter circuits and pulse-width-modulated regulators.

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

SYMBOL	PARAMETER	MAX	UNIT	
$V_{CES}$	Collector- Emitter Voltage( $V_{BE}= 0$ )	BUX31	800	V
		BUX31A	900	
		BUX31B	1000	
$V_{CEO}$	Collector-Emitter Voltage	BUX31	400	V
		BUX31A	450	
		BUX31B	500	
$V_{EBO}$	Emitter-Base Voltage	8	V	
$I_C$	Collector Current-Continuous	8	A	
$I_{CM}$	Collector Current-Peak	10	A	
$I_B$	Base Current-Continuous	5	A	
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	150	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	1.0	$^{\circ}C/W$



## isc Silicon NPN Power Transistors

## BUX31/A/B

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BUX31	$I_C=0.2\text{A}; I_B=0$	400			V
		BUX31A		450			
		BUX31B		500			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C=4\text{A}; I_B=0.8\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C=8\text{A}; I_B=2\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=4\text{A}; I_B=0.8\text{A}$			1.3	V
$I_{CEV}$	Collector Cutoff Current	BUX31	$V_{CE}=800\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=800\text{V}; V_{BE}=-1.5\text{V}, T_C=125^\circ\text{C}$			0.1 1.0	mA
		BUX31A	$V_{CE}=900\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=900\text{V}; V_{BE}=-1.5\text{V}, T_C=125^\circ\text{C}$			0.1 1.0	
		BUX31B	$V_{CE}=1000\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=1000\text{V}; V_{BE}=-1.5\text{V}, T_C=125^\circ\text{C}$			0.1 1.0	
$I_{EBO}$	Emitter Cutoff Current		$V_{EB}=8\text{V}; I_C=0$			2	mA
$h_{FE}$	DC Current Gain		$I_C=4\text{A}; V_{CE}=3\text{V}$	8			
$f_T$	Current-Gain—Bandwidth Product		$I_C=0.2\text{A}; V_{CE}=10\text{V}$	15			MHz