

isc Silicon NPN Power Transistors

BUT131/A

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min})$ - BUT131
500V(Min)- BUT131A
- High Switching Speed

APPLICATIONS

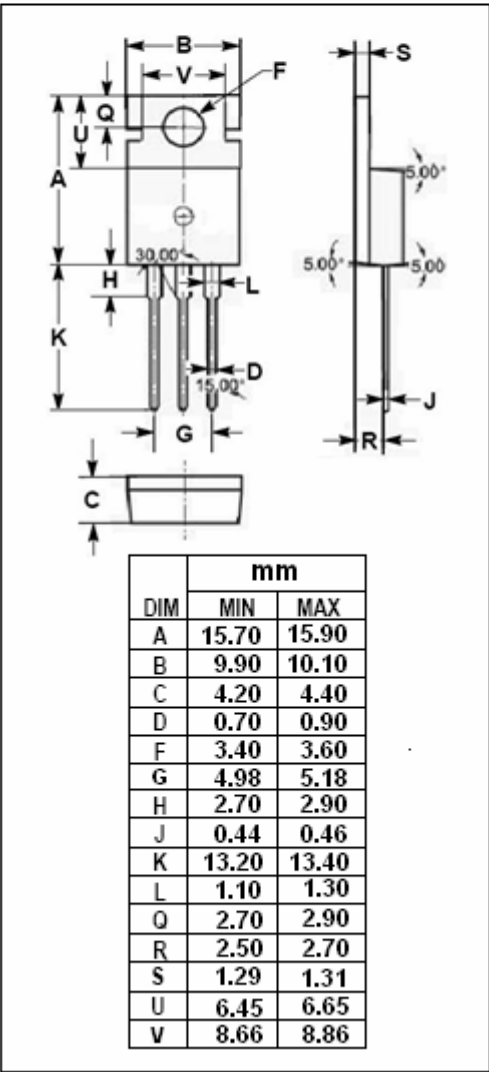
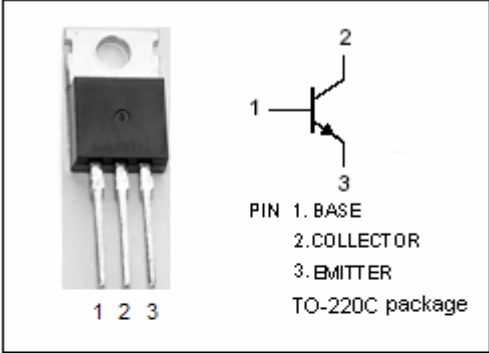
- Designed for use in converters, inverters, switching regulators, motor control systems etc.

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

SYMBOL	PARAMETER		VALUE	UNIT
V_{CES}	Collector-Emitter Voltage $V_{BE}=0$	BUT131	850	V
		BUT131A	1000	
V_{CEO}	Collector-Emitter Voltage	BUT131	450	V
		BUT131A	500	
V_{EBO}	Emitter-Base Voltage		6	V
I_C	Collector Current-Continuous		5	A
I_{CM}	Collector Current-Peak		10	A
I_B	Base Current-Continuous		4	A
I_{BM}	Base Current-Peak		8	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$		80	W
T_J	Junction Temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range		-65~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^{\circ}\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BUT131	$I_C = 0.1A; I_B = 0; L = 10mH$	450			V
		BUT131A		500			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = 1.5A; I_B = 0.2A$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = 3A; I_B = 0.4A$			2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C = 3A; I_B = 0.4A$			1.5	V
I_{CEV}	Collector Cutoff Current		$V_{CE}=V_{CESmax}; V_{BE}=-1.5V$ $V_{CE}=V_{CESmax}; V_{BE}=-1.5V; T_J=100^{\circ}\text{C}$			0.25 1.5	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 6V; I_C = 0$			1.0	mA
h_{FE}	DC Current Gain		$I_C = 5A; V_{CE} = 5V$	5			
C_{OB}	Output Capacitance		$I_E = 0; V_{CB} = 10V; f_{test} = 1kHz$			200	pF

Switching Times; Resistive Load

t_{on}	Turn-On Time	$I_C = 3A; I_{B1} = 0.4A; I_{B2} = -0.8A$		0.35		μs
t_{stg}	Storage Time			1.2		μs
t_f	Fall Time			0.07		μs