

isc Silicon NPN Power Transistor
BD533
DESCRIPTION

- DC Current Gain -
: $h_{FE} = 40 @ I_C = 0.5A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 45V(\text{Min})$
- Complement to Type BD534
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

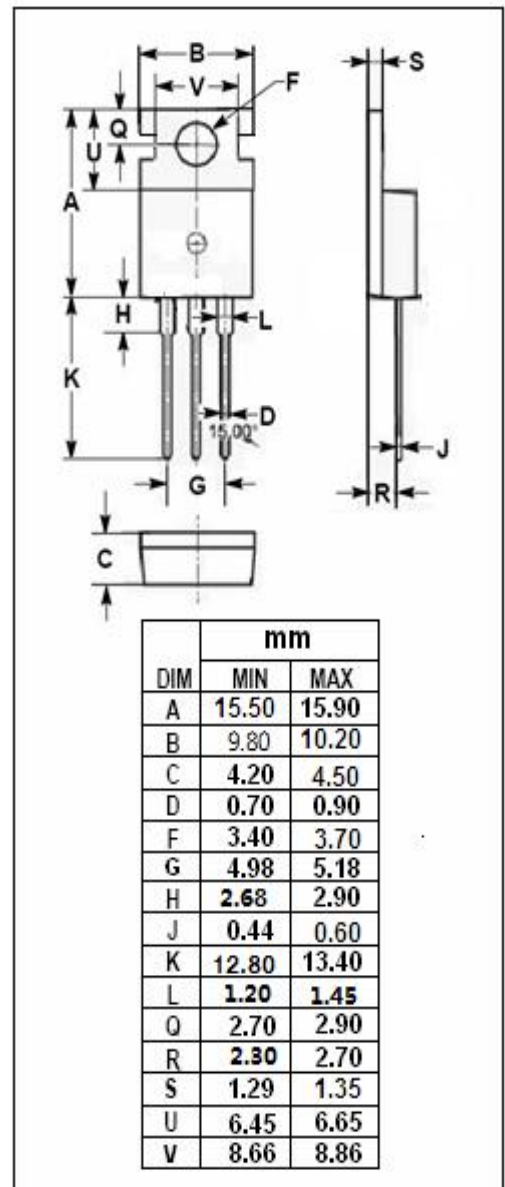
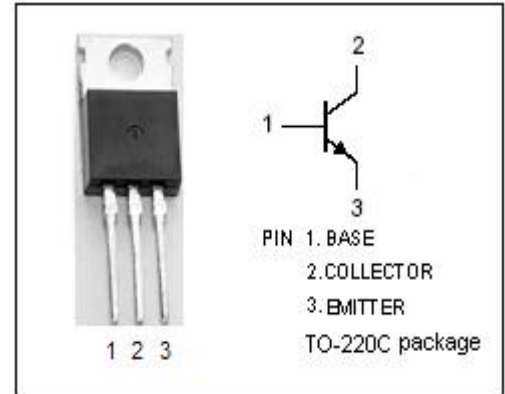
- Designed for use in medium power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	45	V
V_{CES}	Collector-Emitter Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	50	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	2.5	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**BD533****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}; I_B=0$	45			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			0.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.6\text{A}$		0.8		V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=2\text{A}; V_{CE}=2\text{V}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=45\text{V}; I_E=0$			0.1	mA
I_{CES}	Collector Cutoff Current	$V_{CE}=45\text{V}; V_{BE}=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}$	20			
h_{FE-2}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=2\text{V}$	40			
h_{FE-3}	DC Current Gain	$I_C=2\text{A}; V_{CE}=2\text{V}$	25			
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=1\text{V}$	3.0	12		MHz

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