

isc Silicon NPN Power Transistor

BDS16

DESCRIPTION

- High Voltage: $V_{CEV} = 120V(\text{Min})$
- Low Saturation Voltage-
: $V_{CE(\text{sat})} = 1.5V(\text{Max}) @ I_C = 4A$
- High Reliability

APPLICATIONS

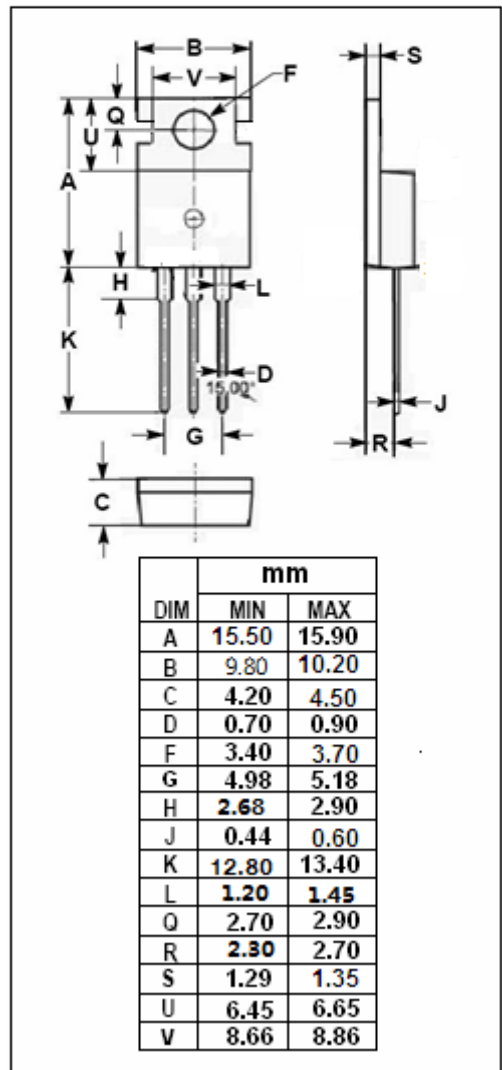
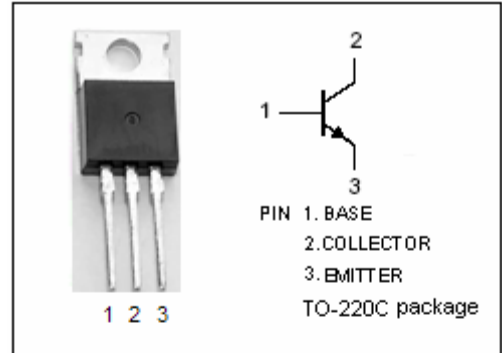
- Designed for power linear and switching application and General purpose power.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_B	Base Current	2	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
$R_{\text{th } j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C/W}$
$R_{\text{th } j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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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	$I_C=50\text{mA}; I_B=0$	120			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.4\text{A}$			1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=0.5\text{A}; I_B=0.05\text{A}$			0.4	V
I_{CBO}	Collector Cutoff Current	$V_{CE}=120\text{V}; V_{BE}=0$			0.02	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=60\text{V}; V_{BE}=0$			0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			0.01	mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=2\text{V}$	40		250	
h_{FE-2}	DC Current Gain	$I_C=4\text{A}; V_{CE}=2\text{V}$	15		150	
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	30			MHz