

isc Silicon NPN Darlington Power Transistor
BDX53B
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CE(sus)} = 80V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 750(\text{Min}) @ I_C = 3A$
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 2.0 V(\text{Max}) @ I_C = 3.0 A$
- Complement to Type BDX54B
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

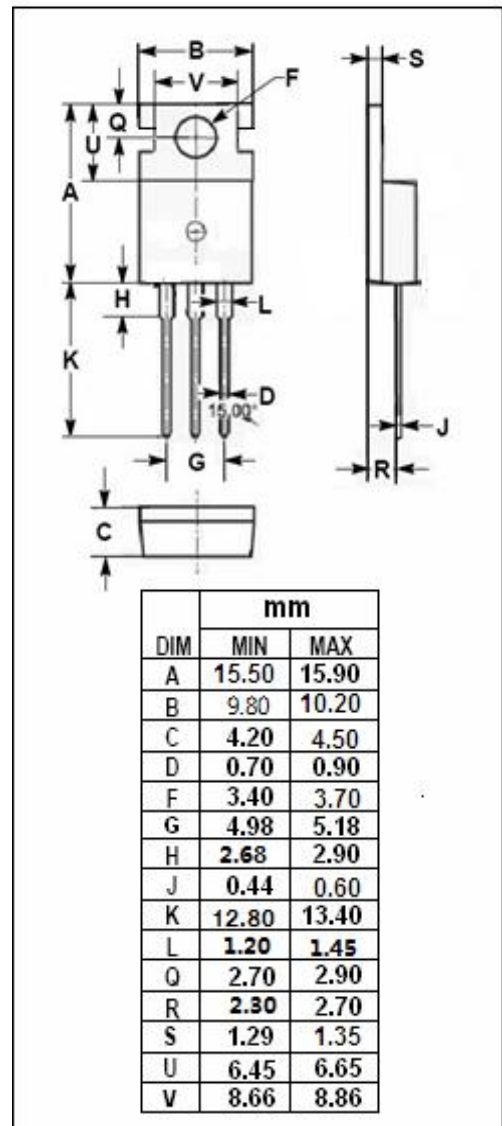
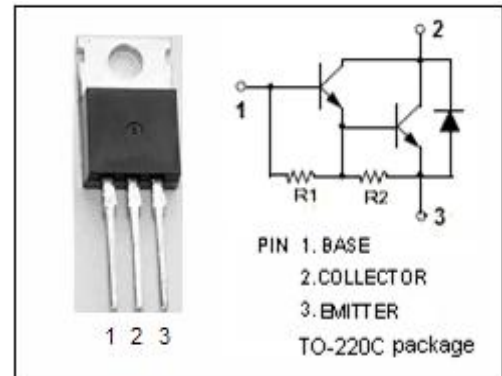
- Designed for general-purpose amplifier and low-speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_{CP}	Collector Current-Peak	12	A
I_B	Base Current-Continuous	0.2	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	60	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	1.92	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	80			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 12mA			2.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 12mA			2.5	V
V _{ECF}	C-E Diode Forward Voltage	I _F = 3A			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 80V; I _E = 0			0.2	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 40V; I _B = 0			0.5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			2.0	mA
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 3V	750			

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