

**Silicon NPN Darlington Power Transistor**

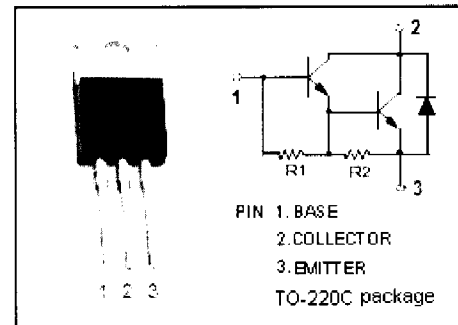
**BDX33**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
 :  $V_{CEO(SUS)} = 45V(\text{Min})$
- High DC Current Gain  
 :  $h_{FE} = 750(\text{Min}) @ I_C = 4A$
- Low Collector Saturation Voltage  
 :  $V_{CE(sat)} = 2.5V(\text{Max.}) @ I_C = 4A$
- Complement to Type BDX34

**APPLICATIONS**

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

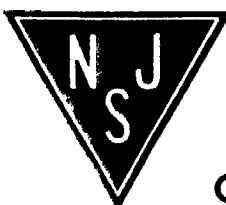
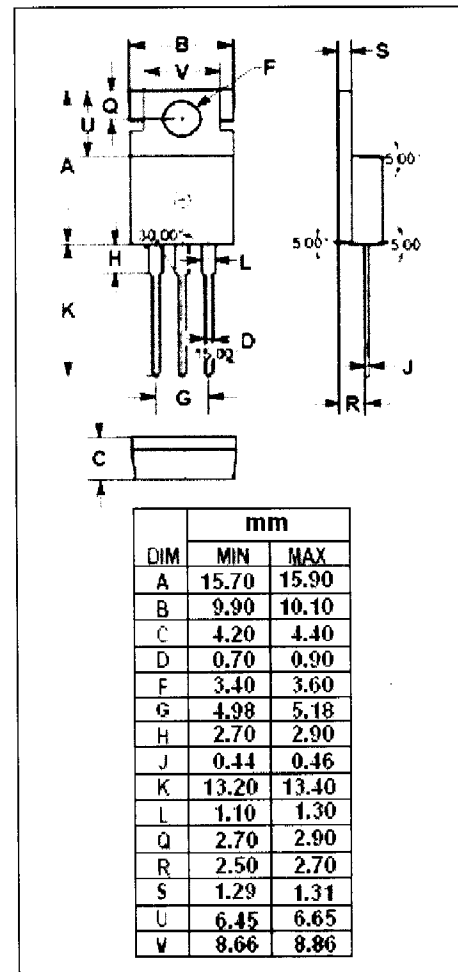


**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CEO}$	Collector-Emitter Voltage	45	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	0.25	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	70	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	1.78	$^\circ\text{C/W}$



**Silicon NPN Darlington Power Transistor****BDX33****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

<b>SYMBOL</b>	<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>MIN</b>	<b>TYP.</b>	<b>MAX</b>	<b>UNIT</b>
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; I_B=0$	45			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=8\text{mA}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=4\text{A}; V_{CE}=3\text{V}$			2.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=45\text{V}; I_E=0$			0.2	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=22\text{V}; I_B=0$			0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	mA
$h_{FE}$	DC Current Gain	$I_C=4\text{A}; V_{CE}=3\text{V}$	750			