

**Silicon PNP Power Transistor**

**BDX20**

**DESCRIPTION**

- High Current Capability
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = -140V(\text{Min})$
- High Switching Speed

**APPLICATIONS**

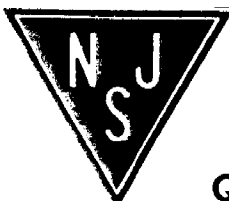
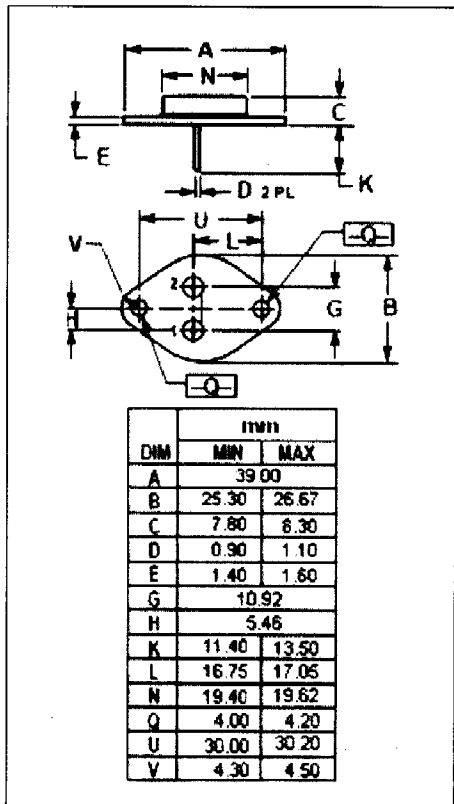
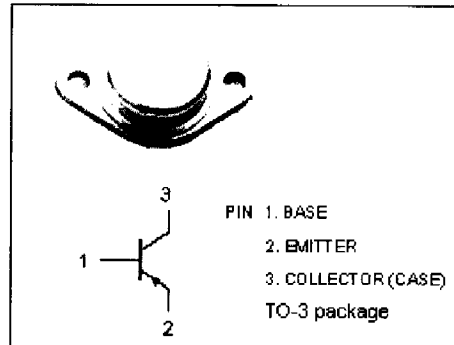
- Designed for LF large signal power amplification.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-160	V
$V_{CEX}$	Collector-Emitter Voltage- $V_{BE} = 1.5V$	-160	V
$V_{CEO}$	Collector-Emitter Voltage	-140	V
$V_{EBO}$	Emitter-Base Voltage	-7	V
$I_C$	Collector Current-Continuous	-10	A
$I_B$	Base Current-Continuous	-7	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	117	W
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~200	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	1.5	$^\circ\text{C/W}$



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**Quality Semi-Conductors**

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### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -200\text{mA}; I_B = 0$	-140			V
$V_{CEX}$	Collector-Emitter Breakdown Voltage	$I_C = -100\text{mA}; V_{BE} = 1.5\text{V}$	-160			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -3\text{A}; I_B = -0.3\text{A}$			-1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{A}; I_B = -2\text{A}$			-5.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage	$I_C = -3\text{A}; V_{CE} = -4\text{V}$		-1.7		V
$V_{BE(on)-2}$	Base-Emitter On Voltage	$I_C = -10\text{A}; V_{CE} = -4\text{V}$		-5.7		V
$I_{CEX}$	Collector Cutoff Current	$V_{CE} = -140\text{V}; V_{BE} = 1.5\text{V}$ $V_{CE} = -140\text{V}; V_{BE} = 1.5\text{V}; T_C = 150^\circ\text{C}$			-1.0 -10	mA
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -140\text{V}; I_E = 0$			-1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -7.0\text{V}; I_C = 0$			-5.0	mA
$h_{FE-1}$	DC Current Gain	$I_C = -3\text{A}; V_{CE} = -4\text{V}$	20		70	
$h_{FE-2}$	DC Current Gain	$I_C = -10\text{A}; V_{CE} = -4\text{V}$		10		
$f_T$	Current Gain-Bandwidth Product	$I_C = -1\text{A}; V_{CE} = -10\text{V}; f_{test} = 1.0\text{MHz}$	4			MHz