

**Silicon NPN Power Transistor**

**BDY78**

**DESCRIPTION**

- Continuous Collector Current- $I_C = 4A$
- Collector Power Dissipation-  
 $P_C = 25W @ T_C = 25^\circ C$

**APPLICATIONS**

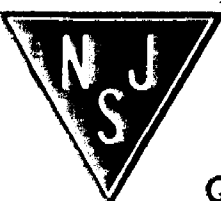
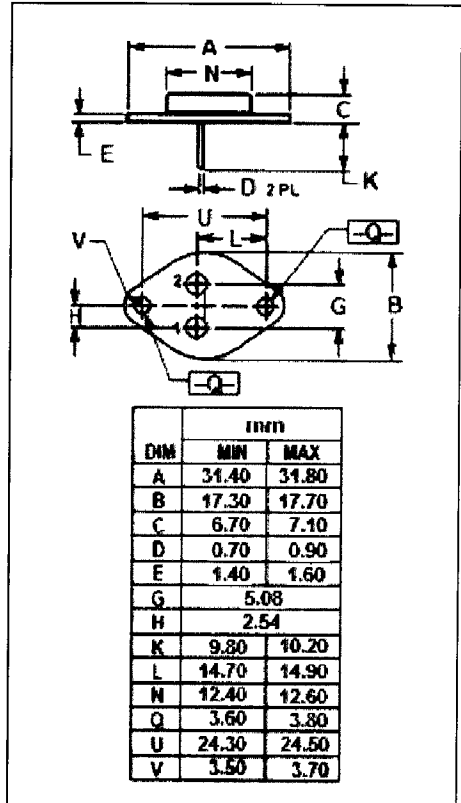
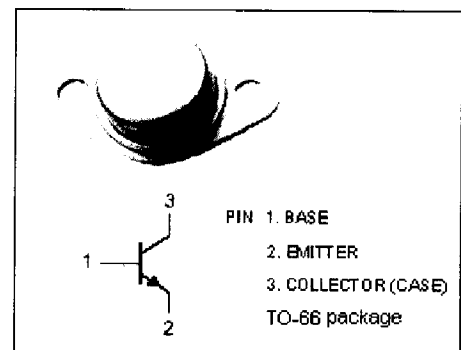
- Designed for general purpose switching and amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	90	V
$V_{CEX}$	Collector-Emitter Voltage $V_{BE} = -1.5V$	90	V
$V_{CEO}$	Collector-Emitter Voltage	55	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	4	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ C$	25	W
$T_J$	Junction Temperature	200	$^\circ C$
$T_{stg}$	Storage Temperature	-65~200	$^\circ C$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	7.0	$^\circ C/W$



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**Silicon NPN Power Transistor****BDY78****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

<b>SYMBOL</b>	<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>MIN</b>	<b>MAX</b>	<b>UNIT</b>
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 100mA; I <sub>B</sub> = 0	55		V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	90		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.5A; I <sub>B</sub> = 50mA		1.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 1A		3.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 4V		2.0	V
I <sub>CEX</sub>	Collector Cutoff Current	V <sub>CE</sub> = 90V; V <sub>BE</sub> = -1.5V V <sub>CE</sub> = 90V; V <sub>BE</sub> = -1.5V, T <sub>C</sub> =150°C		1.0 5.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 7V; I <sub>C</sub> = 0		1.0	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 4V	25	100	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 3A; V <sub>CE</sub> = 4V	5		
f <sub>T</sub>	Current Gain-Bandwidth Product	I <sub>C</sub> = 0.2A; V <sub>CE</sub> = 10V	8		MHz