

**Silicon NPN Power Transistor**

**BDY76**

**DESCRIPTION**

- Excellent Safe Operating Area
- High DC Current Gain-  
:  $h_{FE} = 40 \sim 120 @ I_C = 10A$
- Low Saturation Voltage-  
:  $V_{CE(sat)} = 1.4V(\text{Max}) @ I_C = 10A$

**APPLICATIONS**

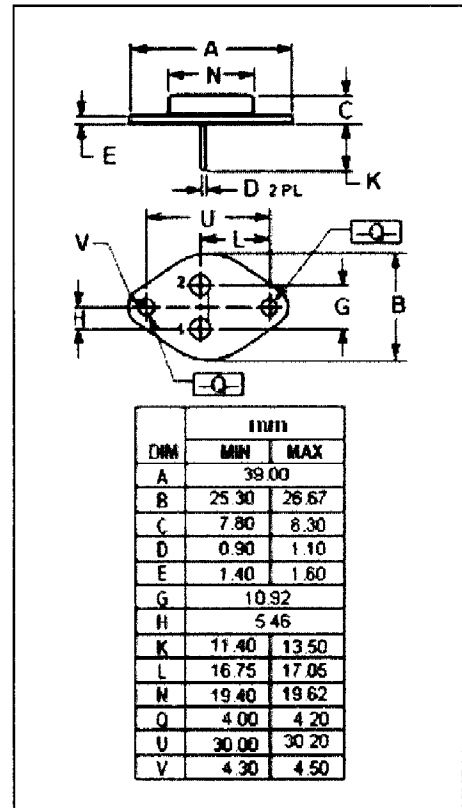
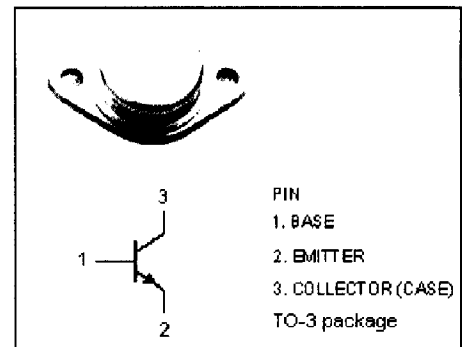
- Designed for linear amplifiers, series pass regulators, and inductive switching applications.

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

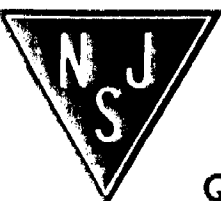
SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEX}$	Collector-Emitter Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	20	A
$I_{CM}$	Collector Current-Peak	30	A
$I_B$	Base Current-Continuous	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	150	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	1.17	$^\circ\text{C/W}$



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### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=200\text{mA}; I_B=0$	60		V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage	$I_C=200\text{mA}; R_{BE}=100\ \Omega$	70		V
$V_{(BR)CEX}$	Collector-Emitter Breakdown Voltage	$I_C=200\text{mA}; V_{BE(off)}=1.5\text{V}$	80		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$		1.4	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=10\text{A}; V_{CE}=4\text{V}$		2.2	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=50\text{V}; I_B=0$		10	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=100\text{V}; V_{BE(off)}=1.5\text{V}$ $V_{CE}=30\text{V}; V_{BE(off)}=1.5\text{V}; T_C=150^\circ\text{C}$		5.0 10	mA
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=100\text{V}; I_E=0$ $V_{CB}=30\text{V}; I_E=0; T_C=150^\circ\text{C}$		5.0 10	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$		5.0	mA
$h_{FE}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	40	120	
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=4\text{V}$	0.8		MHz