

Silicon NPN Power Transistor

BDY57

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
 : $V_{CEO(SUS)} = 80V(\text{Min})$
- High Power Dissipation
- Low Collector Saturation Voltage

APPLICATIONS

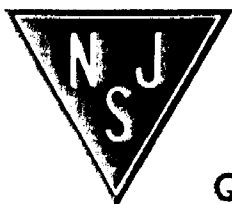
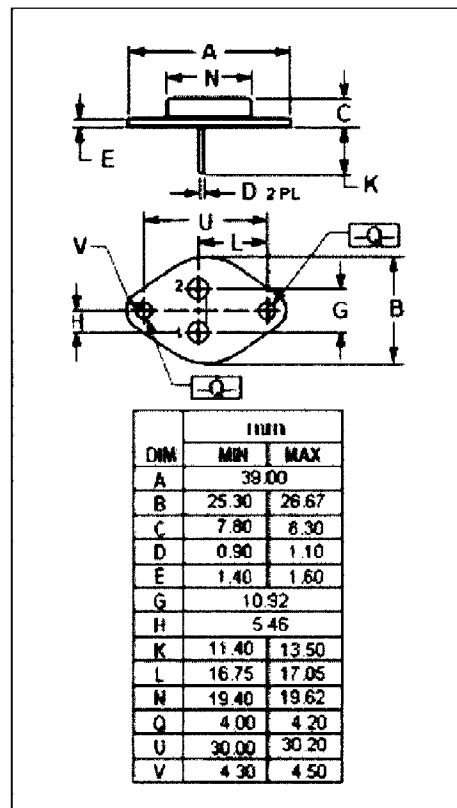
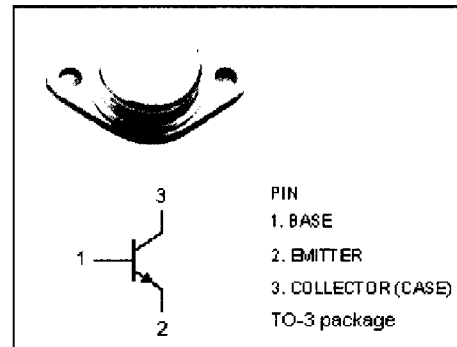
- LF signal power amplification.
- High current fast switching

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	25	A
I_B	Base Current-Continuous	6	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	175	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.0	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 100mA; I _B = 0	80			V
V _{(BR)CBO}	Collector- Base Breakdown Voltage	I _C = 5mA; I _E = 0	120			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 5mA; I _C = 0	10			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 1A			1.4	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 120V; I _E = 0			0.5	mA
I _{CER}	Collector Cutoff Current	V _{CE} = 80V; R _{BE} = 10 Ω V _{CE} = 80V; R _{BE} = 10 Ω; T _C =100°C			0.5 10	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 10V; I _C = 0			0.5	mA
h _{FE-1}	DC Current Gain	I _C = 10A; V _{CE} = 4V	20		80	
h _{FE-2}	DC Current Gain	I _C = 20A; V _{CE} = 4V		15		
f _T	Current-Gain—Bandwidth Product	I _C = 1A; V _{CE} = 15V; f= 10MHz	10			MHz

Switching Times

t _{on}	Turn-On Time	I _C = 15A, I _B = 1.5A,			1.0	μs
t _{off}	Turn-Off Time	I _C = 15A, I _{B1} = -I _{B2} = 1.5A,			2.0	μs