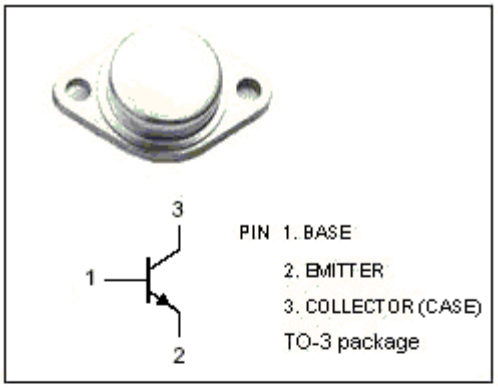
isc Silicon NPN Power Transistor BDY90

DESCRIPTION

- High DC Current Gain-
  : h_{FE}= 30-120@I_C= 5A
- Excellent Safe Operating Area
- High Current Capability

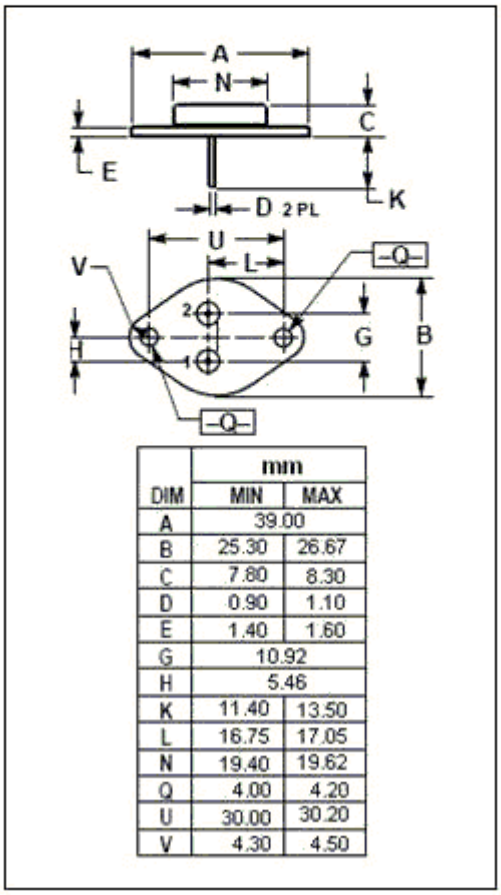


APPLICATIONS

- Designed for use in switching-control amplifiers, power gates,switching regulators, converters, and inverters.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEV}	Collector-Emitter Voltage V_{BE}= -1.5V	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @T_C≤25℃	60	W
T_J	Junction Temperature	175	℃
T_{stg}	Storage Temperature Range	-65~175	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.30
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.40	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	2.5	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 100mA ;I_B= 0	120			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 0.5A			0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 1A			1.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 0.5A			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 1A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}=120V; I_E=0			1.0	mA
I_{CEV}	Collector Cutoff Current	V_{CE}=120V;V_{BE}=-1.5V V_{CE}=120V;V_{BE}=-1.5V;T_C=150℃			1.0 3.0	mA
I_{EBO}	Emitter Cutoff current	V_{EB}=6V; I_C=0			1.0	mA
h_{FE-1}	DC Current Gain	I_C= 1A ; V_{CE}= 2V	30			
h_{FE-2}	DC Current Gain	I_C= 5A ; V_{CE}= 5V	30		120	
h_{FE-3}	DC Current Gain	I_C= 10A ; V_{CE}= 5V	20			
f_T	Current-Gain—Bandwidth Product	I_C= 0.5 A;V_{CE}= 5V;f_{test} = 5MHz		70		MHz
Switching Times						
t_{on}	Turn-On Time	I_C= 5A; I_{B1}= -I_{B2}= 0.5A, V_{CC}=30V			0.35	μs
t_{stg}	Storage Time				1.3	μs
t_f	Fall Time				0.2	μs