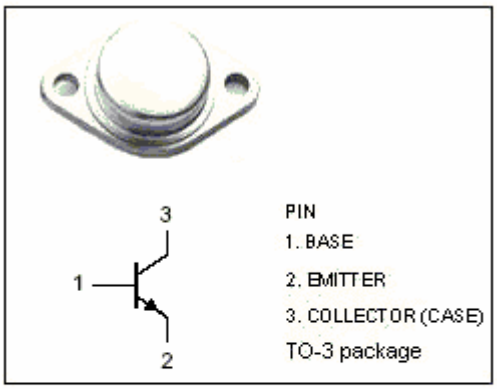
isc Silicon NPN Power Transistor BDY90A

DESCRIPTION

- High Current Capability
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 100V(Min)
- High Switching Speed

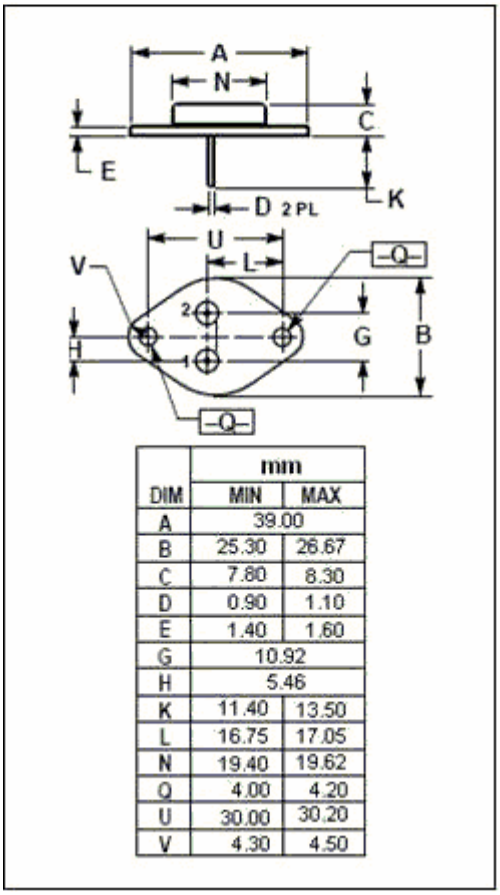
APPLICATIONS

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



ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEX}	Collector-Emitter Voltage(V_{EB}= 0)	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	2	A
I_{BM}	Base Current-Peak	3	A
I_E	Emitter Current-Continuous	-15	A
I_{EM}	Emitter Current-Peak	-15	A
P_C	Collector Power Dissipation@T_C=25℃	40	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65~150	℃



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	2.0	℃/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	100			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= 12A; I_B= 1.2A			1.0	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= 12A; I_B= 1.2A			1.5	V
I_{CEX}	Collector Cutoff Current	V_{CE}= V_{CEXmax};V_{EB}= 1.5V V_{CE}= V_{CEXmax};V_{EB}= 1.5V,T_C=150℃			0.1 3.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C=0			0.1	mA
h_{FE-1}	DC Current Gain	I_C= 1A ; V_{CE}= 2V	35			
h_{FE-2}	DC Current Gain	I_C= 5A ; V_{CE}= 5V	30		120	
h_{FE-3}	DC Current Gain	I_C= 12A ; V_{CE}= 5V	20			
f_T	Current Gain-Bandwidth Product	I_C= 0.5A ; 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_s	Storage Time				1.3	μs
t_f	Fall Time				0.2	μs