New Jersey Semi-Conductor Products, Inc.

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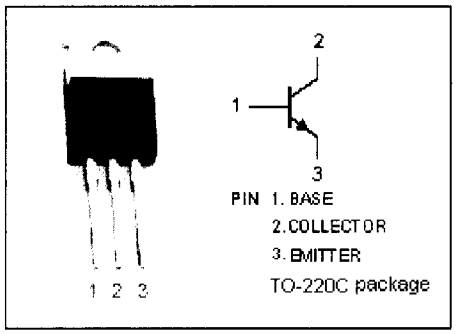
Silicon NPN Power Transistor — BD909

DESCRIPTION

- DC Current Gain -
  : h_{FE} = 40(Min.)@ I_C= 0.5A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 80V(Min)
- Complement to Type BD910



APPLICATIONS

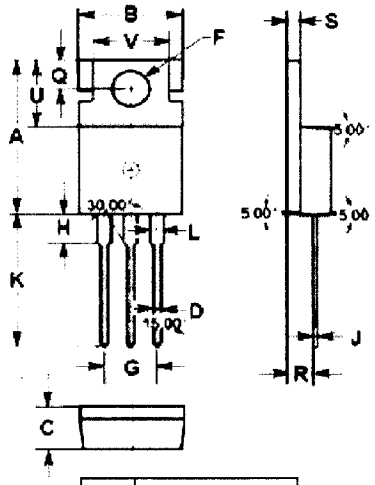
- Designed for use in general purpose power amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation @ T_C=25℃	90	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.38	℃/W



DIM	mm MIN	mm MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ;I_B= 0	80		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 0.5A		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 2.5A		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 2.5A		2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 5A ; V_{CE}= 4V		1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 80V; I_E= 0		0.5	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 40V; I_B= 0		1.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0		1.0	mA
h_{FE-1}	DC Current Gain	I_C= 0.5A ; V_{CE}= 4V	40	250	
h_{FE-2}	DC Current Gain	I_C= 5A ; V_{CE}= 4V	15	150	
h_{FE-3}	DC Current Gain	I_C= 10A ; V_{CE}= 4V	5		
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A ; V_{CE}= 4V; f_{test}= 1.0MHz	3.0		MHz