New Jersey Semi-Conductor Products, Inc.

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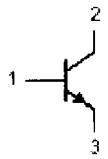
Silicon NPN Power Transistor

BD201F/203F

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$ = 45V(Min)- BD201F
  60V(Min)- BD203F
- Complement to Type BD202F/204F



PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220Fa package

APPLICATIONS

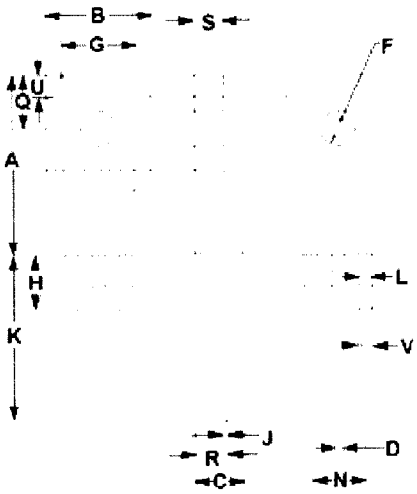
- Designed for use in hi-fi equipment delivering an output of 15 to 15 W into a 4 Ω or 8 Ω load.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BD201F	60	V
		BD203F	60	
V_{CEO}	Collector-Emitter Voltage	BD201F	45	V
		BD203F	60	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		8	A
I_{CM}	Collector Current-Peak		12	A
I_B	Base Current		3	A
P_C	Collector Power Dissipation @ T_C=25℃		32	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	6.3	℃/W



DIM	mm MIN	mm MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

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Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BD201F	I_C= 0.2A ;I_B= 0	45		V
		BD203F		60		
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage		I_C= 1mA ;I_E= 0	60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage		I_E= 1mA ;I_C= 0	5		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 3A; I_B= 0.3A		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 6A; I_B= 0.6A		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		I_C= 6A; I_B= 0.6A		2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 3A ; V_{CE}= 2V		1.5	V
I_{CEO}	Collector Cutoff Current		V_{CE}= 30V; I_B= 0		0.2	mA
I_{CBO}	Collector Cutoff Current		V_{CB}= V_{CBO};I_E= 0 V_{CB}= $^1/_2V_{CBO}$;I_E= 0; T_J= 150℃		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0		0.5	mA
h_{FE-1}	DC Current Gain	BD201F	I_C= 3A ; V_{CE}= 2V	30		
		BD203F	I_C= 2A ; V_{CE}= 2V			
h_{FE-2}	DC Current Gain		I_C= 1A ; V_{CE}= 2V	30		
f_T	Current-Gain—Bandwidth Product		I_C= 0.3A ; V_{CE}= 3V, f_{test}= 1.0MHz	7.0		MHz

Switching Times

t_{on}	Turn-On Time	I_C= 2A; I_{B1}= -I_{B2}= 0.2A		1	μ s
t_{off}	Turn-Off Time			4	μ s