

isc Silicon NPN Power Transistor

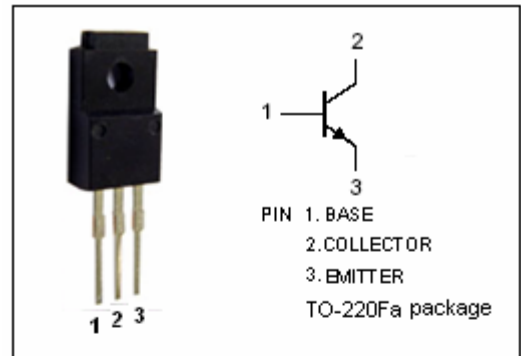
BD201F/203F

DESCRIPTION

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

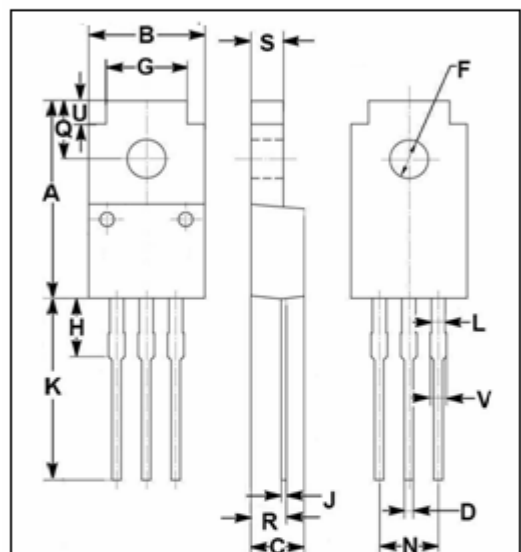
APPLICATIONS

- 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( $T_a=25^{\circ}C$ )

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 @ $T_C=25^{\circ}C$	32	W	
$T_J$	Junction Temperature	150	$^{\circ}C$	
$T_{stg}$	Storage Temperature Range	-65~150	$^{\circ}C$	



DIM	mm	
	MIN	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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	6.3	$^{\circ}C/W$

## isc Silicon NPN Power Transistor

## BD201F/203F

## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

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

## Switching Times

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