

Silicon NPN Power Transistor

BD201/203

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 45V(\text{Min})$ - BD201
60V(Min)- BD203
- Complement to Type BD202/204

APPLICATIONS

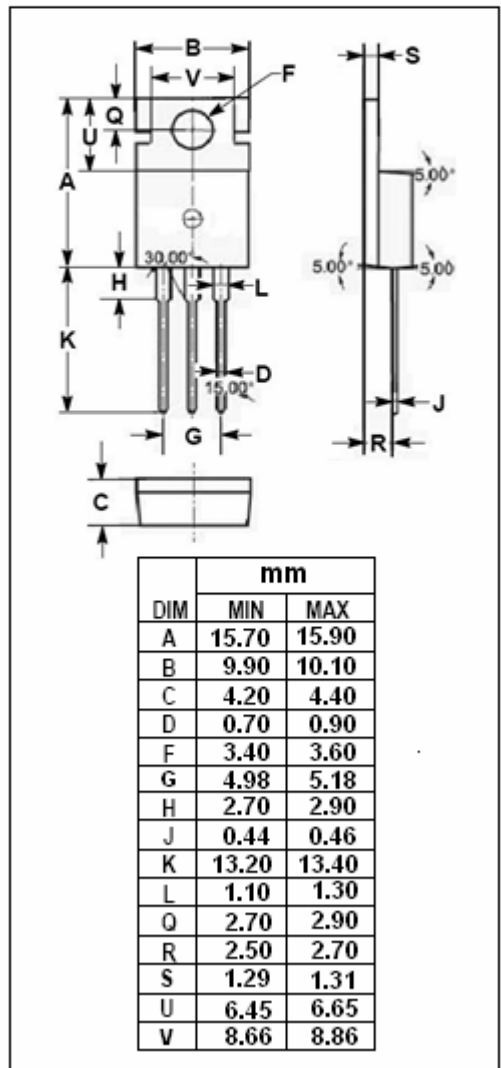
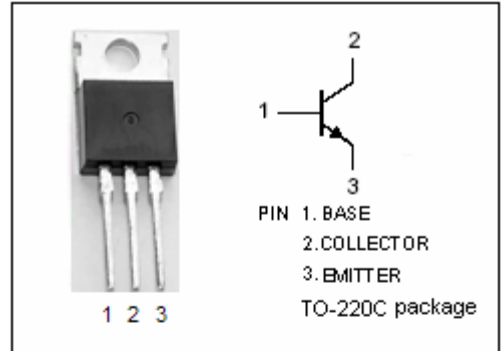
- Designed for use in hi-fi equipment delivering an output of 15 to 15 W into a 4 or 8 load.

ABSOLUTE MAXIMUM RATINGS($T_a=25$)

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BD201	60	V
		BD203	60	
V_{CEO}	Collector-Emitter Voltage	BD201	45	V
		BD203	60	
V_{EBO}	Emitter-Base Voltage	5	V	
I_C	Collector Current-Continuous	8	A	
I_{CM}	Collector Current-Peak t_p 10ms	12	A	
I_{CSM}	Collector Current-Peak t_p 2ms	25	A	
I_B	Base Current	3	A	
P_C	Collector Power Dissipation @ $T_C=25$	60	W	
T_J	Junction Temperature	150		
T_{stg}	Storage Temperature Range	-65~150		

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	2.08	/W
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	70	/W



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ELECTRICAL CHARACTERISTICS

 $T_C=25$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BD201	$I_C=0.2A ; I_B=0$	45		V
		BD203		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		$V_{CB}=40V ; I_E=0 ; T_J=150$		1.0	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB}=5V ; I_C=0$		0.5	mA
h_{FE}	DC Current Gain	BD201	$I_C=3A ; V_{CE}=2V$	30		
		BD203	$I_C=2A ; V_{CE}=2V$			
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	μs
t_{off}	Turn-Off Time			4	μs