

**Silicon NPN Power Transistors**

**BD707 BD709 BD711**

**DESCRIPTION**

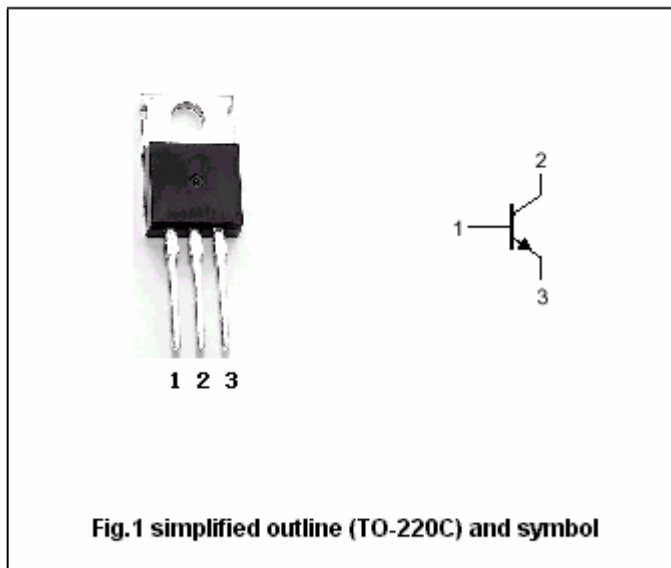
- With TO-220C package
- The BD707 and BD711are respectively complement to type BD708 and BD712

**APPLICATIONS**

- Intended for use in power linear and switching applications.

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter



**Fig.1 simplified outline (TO-220C) and symbol**

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BD707	60	V
		BD709	80	
		BD711	100	
V <sub>CEO</sub>	Collector-emitter voltage	BD707	60	
		BD709	80	
		BD711	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current-DC		12	A
I <sub>CM</sub>	Collector current-Pulse		18	A
I <sub>B</sub>	Base current		5	A
P <sub>T</sub>	Total dissipation	T <sub>C</sub> =25°C	75	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.67	°C/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	BD707	$I_C=0.1A, I_B=0$	60			V
		BD709		80			
		BD711		100			
$V_{CEsat}$	Collector-emitter saturation voltage		$I_C=4A, I_B=0.4A$			1.0	V
$V_{BE}$	Base-emitter voltage		$I_C=4A, V_{CE}=4V$			1.5	V
$I_{CBO}$	Collector cut-off current	BD707	$V_{CB}=60V, I_E=0$ $T_C=150^\circ\text{C}$			0.1 1.0	mA
		BD709	$V_{CB}=80V, I_E=0$ $T_C=150^\circ\text{C}$			0.1 1.0	
		BD711	$V_{CB}=100V, I_E=0$ $T_C=150^\circ\text{C}$			0.1 1.0	
$I_{CEO}$	Collector cut-off current	BD707	$V_{CE}=30V, I_B=0$			0.1	mA
		BD709	$V_{CE}=40V, I_B=0$				
		BD711	$V_{CE}=50V, I_B=0$				
$I_{EBO}$	Emitter cut-off current		$V_{EB}=5V, I_C=0$			1.0	mA
$h_{FE-1}$	DC current gain		$I_C=0.5A; V_{CE}=2V$	40	120	400	
$h_{FE-2}$	DC current gain only for <b>BD707/709</b>		$I_C=2A; V_{CE}=2V$	30			
$h_{FE-3}$	DC current gain		$I_C=4A; V_{CE}=2V$	15		150	
$h_{FE-4}$	DC current gain	BD707	$I_C=10A; V_{CE}=4V$	5	10		
		BD709		8			
		BD711		8			
$f_T$	Transition frequency		$I_C=0.3A; V_{CE}=3V;$	3			MHz

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PACKAGE OUTLINE

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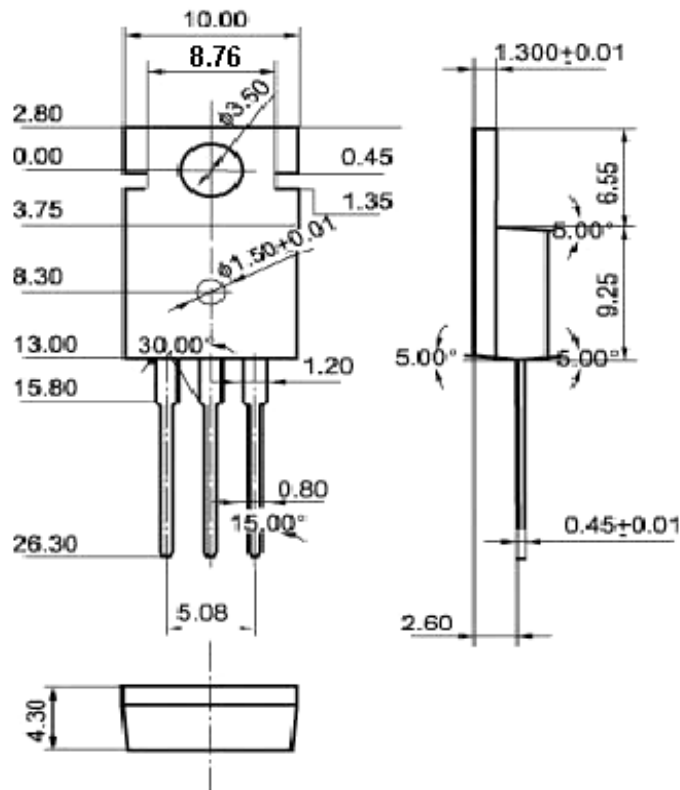


Fig.2 Outline dimensions