



# BC300 BC301 BC302

NPN SILICON AF MEDIUM POWER AMPLIFIERS & SWITCHES

CASE TO-39

THE BC300, BC301, BC302 ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS RECOMMENDED FOR AF DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THEY ARE COMPLEMENTARY TO THE PNP TYPE BC303 AND BC304.



C E B

## ABSOLUTE MAXIMUM RATINGS

		BC300	BC301	BC302
Collector-Base Voltage	V <sub>CB0</sub>	120V	90V	60V
Collector-Emitter Voltage	V <sub>CE0</sub>	80V	60V	45V
Emitter-Base Voltage	V <sub>EB0</sub>		7V	
Collector Current	I <sub>C</sub>		1A	
Total Power Dissipation (T <sub>C</sub> ≤ 25°C)	P <sub>tot</sub>		6W	
			850mW	
Operating Junction & Storage Temperature	T <sub>j</sub> , T <sub>stg</sub>		-55 to 175°C	

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	V <sub>CE0</sub> *					I <sub>C</sub> =100mA I <sub>B</sub> =0
BC300		80			V	
BC301		60			V	
BC302		45			V	
Collector-Emitter Breakdown Voltage	V <sub>CEV</sub> *					I <sub>C</sub> =100mA V <sub>EB</sub> =1.5V
BC300 only		120			V	
BC301 only		90			V	
Collector Cutoff Current	I <sub>CB0</sub>			20	nA	V <sub>CB</sub> =60V I <sub>B</sub> =0
Emitter Cutoff Current	I <sub>EB0</sub>			20	nA	V <sub>EB</sub> =7V I <sub>C</sub> =0
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub> *		0.1	0.5	V	I <sub>C</sub> =150mA I <sub>B</sub> =15mA
Base-Emitter Voltage	V <sub>BE</sub> *		0.78		V	I <sub>C</sub> =150mA V <sub>CE</sub> =10V
D.C. Current Gain	h <sub>FE</sub> *	20				I <sub>C</sub> =0.1mA V <sub>CE</sub> =10V
		40		240		I <sub>C</sub> =150mA V <sub>CE</sub> =10V
		20				I <sub>C</sub> =500mA V <sub>CE</sub> =10V
D.C. Current Gain	h <sub>FE</sub> *	40		80		I <sub>C</sub> =150mA V <sub>CE</sub> =10V
Group 4		70		140		
Group 5		120		240		
Group 6						
Current Gain-Bandwidth Product	f <sub>T</sub>		120		MHz	I <sub>C</sub> =10mA V <sub>CE</sub> =10V
Collector-Base Capacitance	C <sub>ob</sub>		10		pF	V <sub>CB</sub> =10V I <sub>B</sub> =0 f=1MHz

\* Pulse Test : Pulse Width=0.3ms, Duty Cycle=1%

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