

# **isc** Silicon NPN Power Transistor

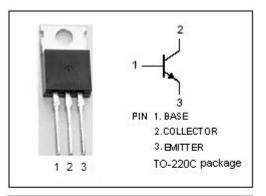
# BDY81

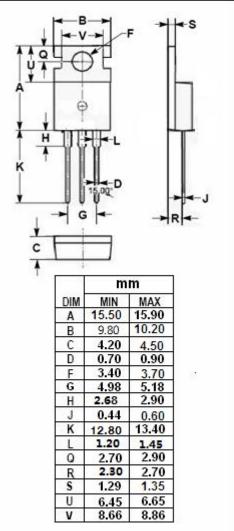
### DESCRIPTION

- Continuous Collector Current-I<sub>C</sub>= 4A
- Collector Power Dissipation-: P<sub>C</sub>= 36W @T<sub>C</sub>= 25℃
- Complement to Type BDY83
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

• Designed for general purpose switching and amplifier applications.





## ABSOLUTE MAXIMUM RATINGS(Ta=25 $\ensuremath{\mathbb{C}}$ )

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	10	V
lc	Collector Current-Continuous	4	А
IB	Base Current-Continuous	2	А
Pc	Collector Power Dissipation@T <sub>c</sub> =25°C	36	W
TJ	Junction Temperature	150	°C
Tstg	Storage Temperature	-55~150	°C

#### THERMAL CHARACTERISTICS

	SYMBOL	PARAMETER	МАХ	UNIT
-	R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	3.5	°C/W



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## ELECTRICAL CHARACTERISTICS

### $T_{\text{c}}\text{=}25^{\circ}\!\!\!\mathrm{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	МАХ	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	50			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	60			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	10			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.3A			1.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	Ic= 0.5A; Vce= 5V			0.9	V
ICEO	Collector Cutoff Current	V <sub>CE</sub> = 20V; I <sub>B</sub> = 0			10	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 20V; I <sub>E</sub> = 0			0.2	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			0.1	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 5V	40		240	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 2.5A; V <sub>CE</sub> = 5V	10			
fT	Current Gain-Bandwidth Product	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 10V		1		MHz

### h<sub>FE-1</sub> Classifications

А	В	С
40-80	70-140	120-240

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