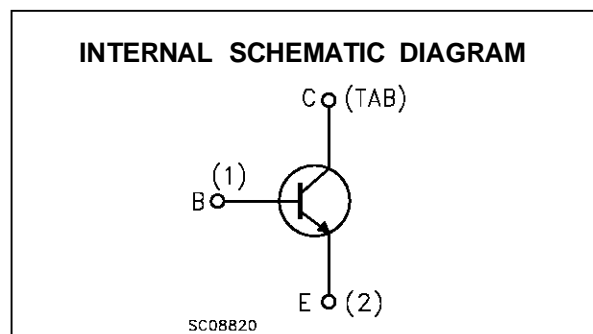
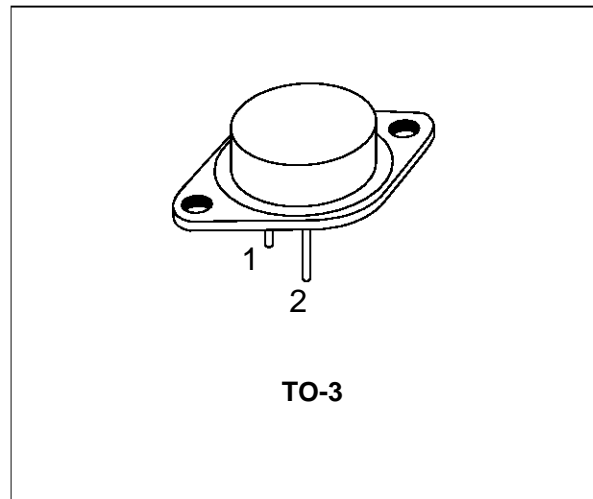


## HIGH CURRENT NPN SILICON TRANSISTOR

- BDY90 IS SGS-THOMSON PREFERRED SALESTYPE

### DESCRIPTION

The BDY90 and BDY91 are silicon epitaxial planar NPN power transistors in Jedec TO-3 metal case. They are intended for use in switching and linear applications in military and industrial equipment.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		NPN	BDY90	BDY91	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )		120	100	V
$V_{CEV}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )		120	100	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )		100	80	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )		6		V
$I_C$	Collector Current		10		A
$I_{CM}$	Collector Peak Current (repetitive)		15		A
$I_B$	Base Current		2		A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ C$		60		W
$T_{stg}$	Storage Temperature		-65 to 175		$^\circ C$
$T_j$	Max. Operating Junction Temperature		175		$^\circ C$

## BDY90/BDY91

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	2.5	°C/W
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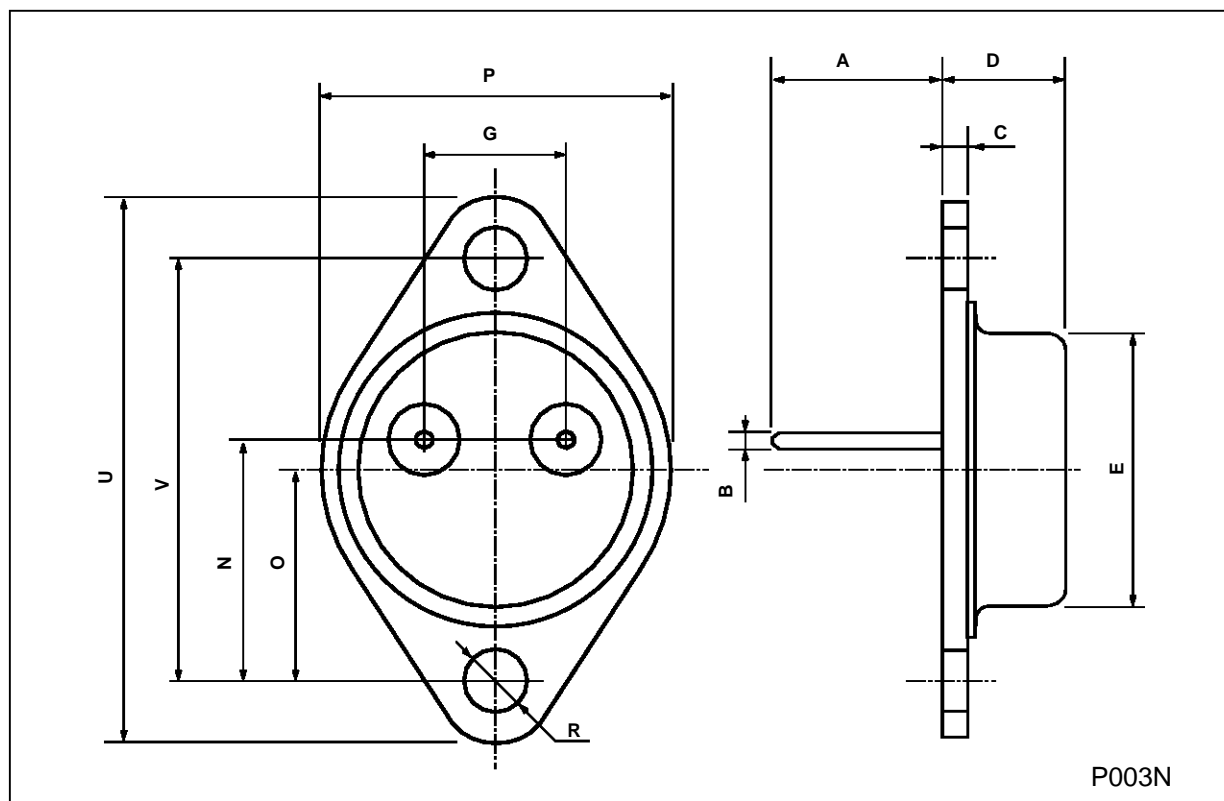
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CE</sub> = V <sub>CBO</sub>			1	mA
I <sub>CEV</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = V <sub>CEV</sub> T <sub>case</sub> = 150 °C V <sub>CE</sub> = V <sub>CEV</sub>			1 3	mA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 6 V			1	mA
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA for <b>BDY90</b> for <b>BDY91</b>	120 100			V V
V <sub>CE(sat)</sub> *	Collector-emitter Saturation Voltage	I <sub>C</sub> = 5 A I <sub>C</sub> = 10 A			0.5 1.5	V V
V <sub>BE(sat)</sub> *	Base-emitter Saturation Voltage	I <sub>C</sub> = 5 A I <sub>C</sub> = 10 A			1.2 1.5	V V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 1 A I <sub>C</sub> = 5 A I <sub>C</sub> = 10 A		30 30 20	120	
f <sub>t</sub>	Transition-Frequency	I <sub>C</sub> = 0.5 A f = 5 MHz		70		MHz
t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5 A V <sub>CC</sub> = 30 V			0.35	μs
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 5 A V <sub>CC</sub> = 30 V			1.3	μs
t <sub>f</sub>	Fall Time				0.2	μs

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

## TO-3 (H) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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