SGS-THOMSON MICROELECTRONICS

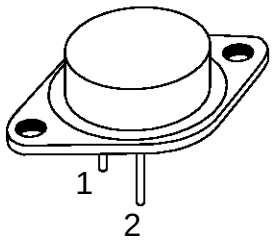
BDY90
BDY91

HIGH CURRENT NPN SILICON TRANSISTOR

- BDY90 IS SGS-THOMSON PREFERRED SALESTYPE

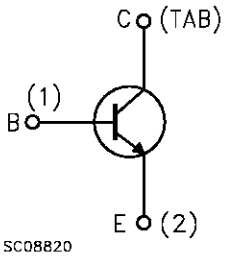
DESCRIPTION

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



TO-3

INTERNAL SCHEMATIC DIAGRAM



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 $T_c \leq 25\ ^oC$	60		W
T_{stg}	Storage Temperature	-65 to 175		^oC
T_j	Max. Operating Junction Temperature	175		^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	2.5	$^oC/W$

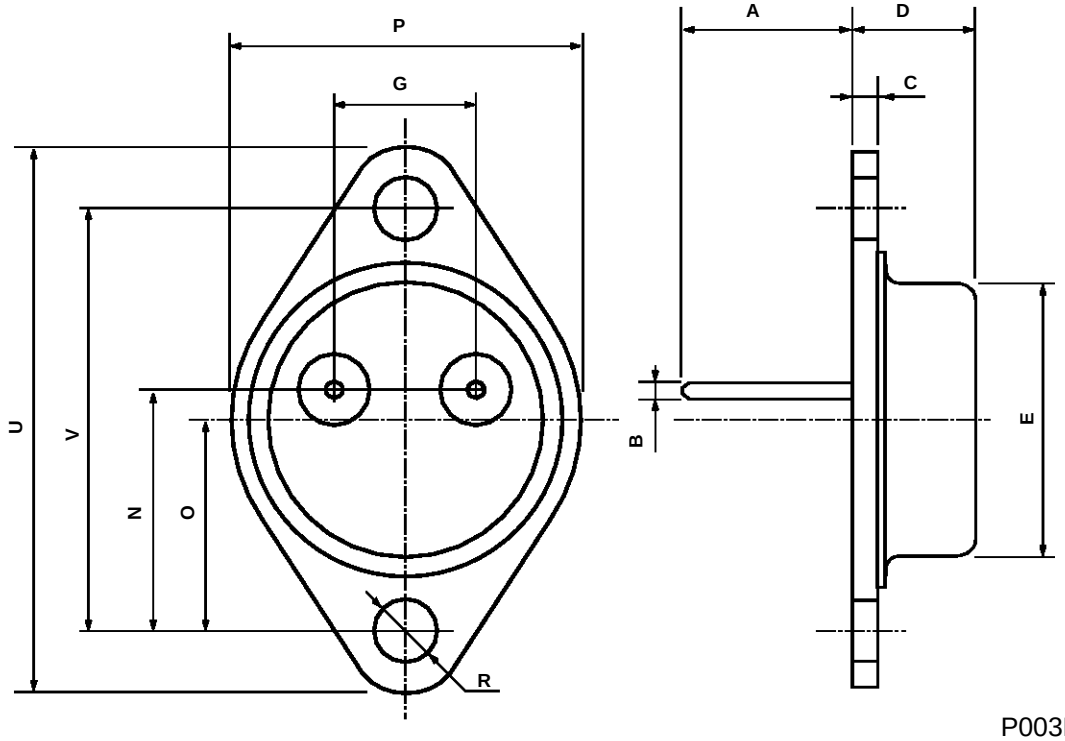
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CE} =V_{CBO}			1	mA
I_{CEV}	Collector Cut-off Current (V_{BE} = -1.5V)	V_{CE} =V_{CEV} T_{case} = 150 ^oC V_{CE} =V_{CEV}			1 3	mA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 6 V			1	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 100 mA for **BDY90** for **BDY91**	 120 100			 V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 5 A I_B = 0.5 A I_C = 10 A I_B = 1 A			0.5 1.5	V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 5 A I_B = 0.5 A I_C = 10 A I_B = 1 A			1.2 1.5	V V
h_{FE}*	DC Current Gain	I_C = 1 A V_{CE} = 2 V I_C = 5 A V_{CE} = 5 V I_C = 10 A V_{CE} = 5 V	30 30 20		 120	
f_t	Transition-Frequency	I_C = 0.5 A V_{CE} = 5 V f = 5 MHz		70		MHz
t_{on}	Turn-on Time	IC = 5 A I_{B1} = 0.5 A V_{CC} = 30 V			0.35	µs
t_s	Storage Time	IC = 5 A I_{B1} = -I_{B2} = 0.5 A V_{CC} = 30 V			1.3	µs
t_f	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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