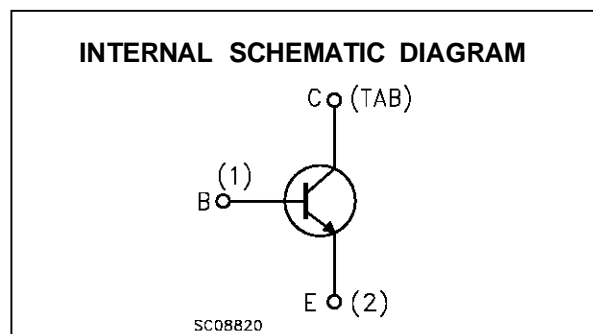
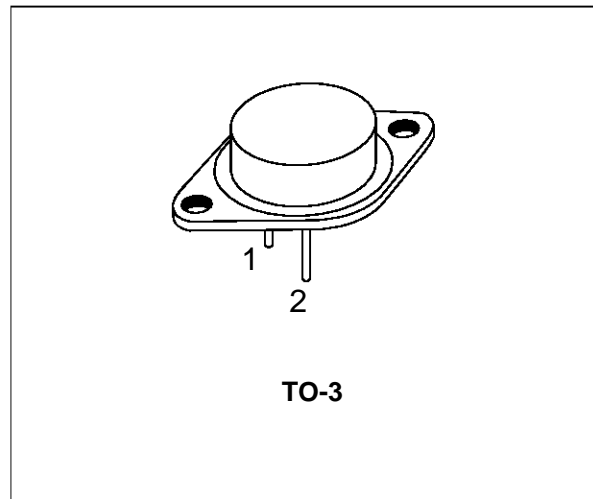


SILICON NPN SWITCHING TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

DESCRIPTION

The BDW51C is a silicon epitaxial-base NPN transistor in Jedec TO-3 metal case. It is intended for use in power linear and switching applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	V
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	15	A
I_{CM}	Collector Peak Current (repetitive)	20	A
I_B	Base Current	7	A
P_{tot}	Total Dissipation at $T_c = 25\text{ }^\circ\text{C}$	125	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	200	$^\circ\text{C}$

BDW51C

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.4	$^{\circ}C/W$
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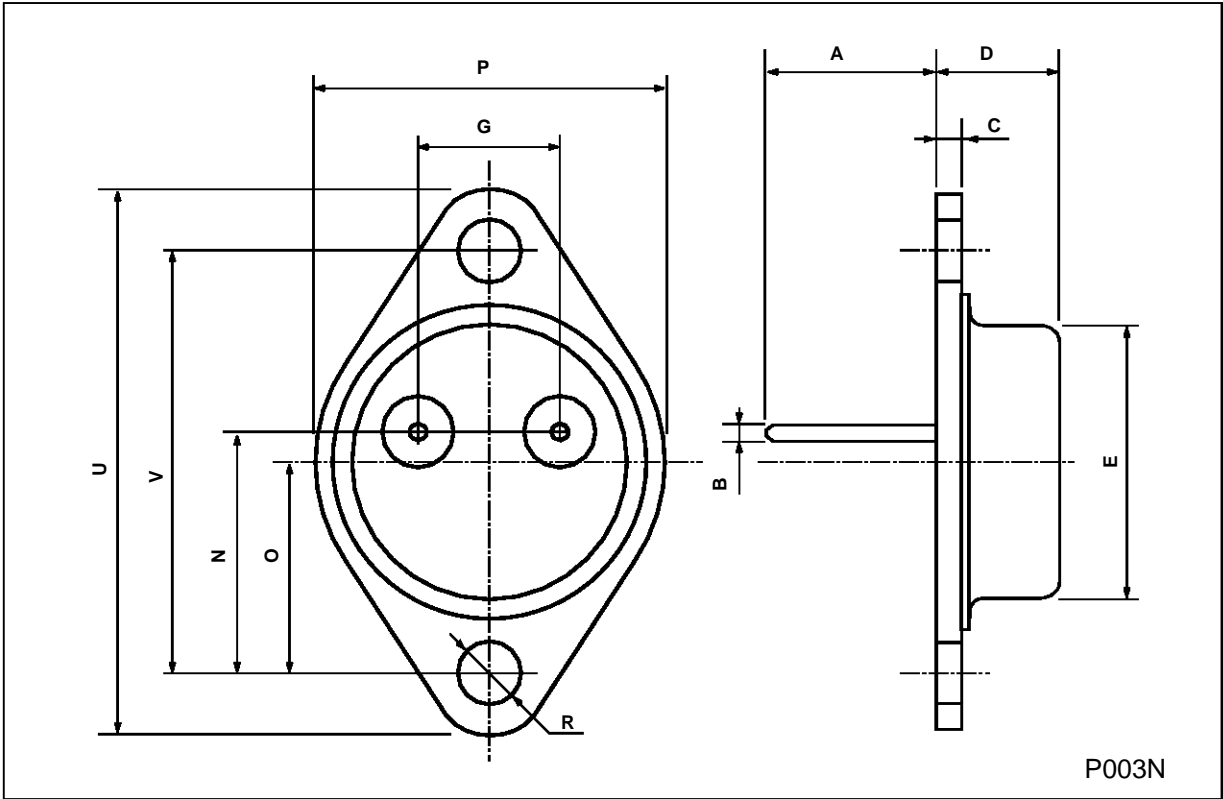
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 100 V$ $V_{CB} = 100 V$ $T_{case} = 150^{\circ}C$			500 5	μA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 50 V$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 V$			2	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 mA$	100			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 5 A$ $I_B = 0.5 A$ $I_C = 10 A$ $I_B = 2.5 A$			1 3	V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 10 A$ $I_B = 2.5 A$			2.5	V V
V_{BE}^*	Base-Emitter Voltage	$I_C = 5 A$ $V_{CE} = 4 V$			1.5	V
h_{FE}^*	DC Current Gain	$I_C = 5 A$ $V_{CE} = 4 V$ $I_C = 10 A$ $V_{CE} = 4 V$	20 5		150	
f_T	Transition frequency	$I_C = 1 A$ $V_{CE} = 4 V$	3			MHz

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP types voltage and current values are negative.

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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