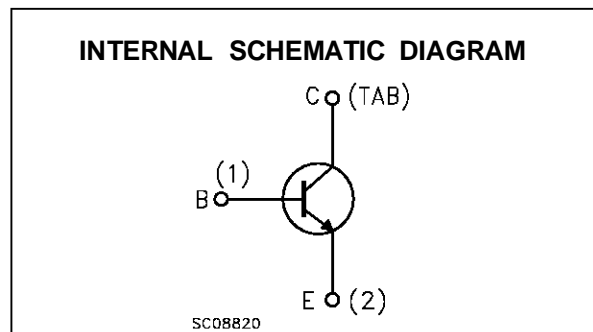
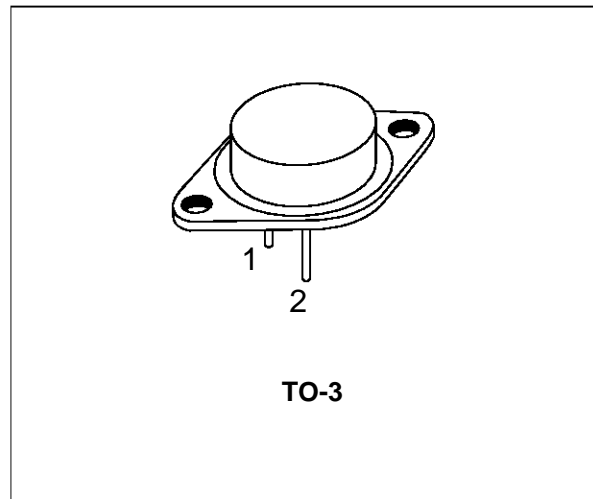


HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

DESCRIPTION

The BDY58 is a silicon multiepitaxial planar NPN transistor in Jedec TO-3 metal case. It is intended for use in switching and linear applications in military and industrial equipment.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	160	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	125	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	25	A
I_B	Base Current	6	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$	175	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	200	$^\circ\text{C}$

BDY58

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1	$^{\circ}C/W$
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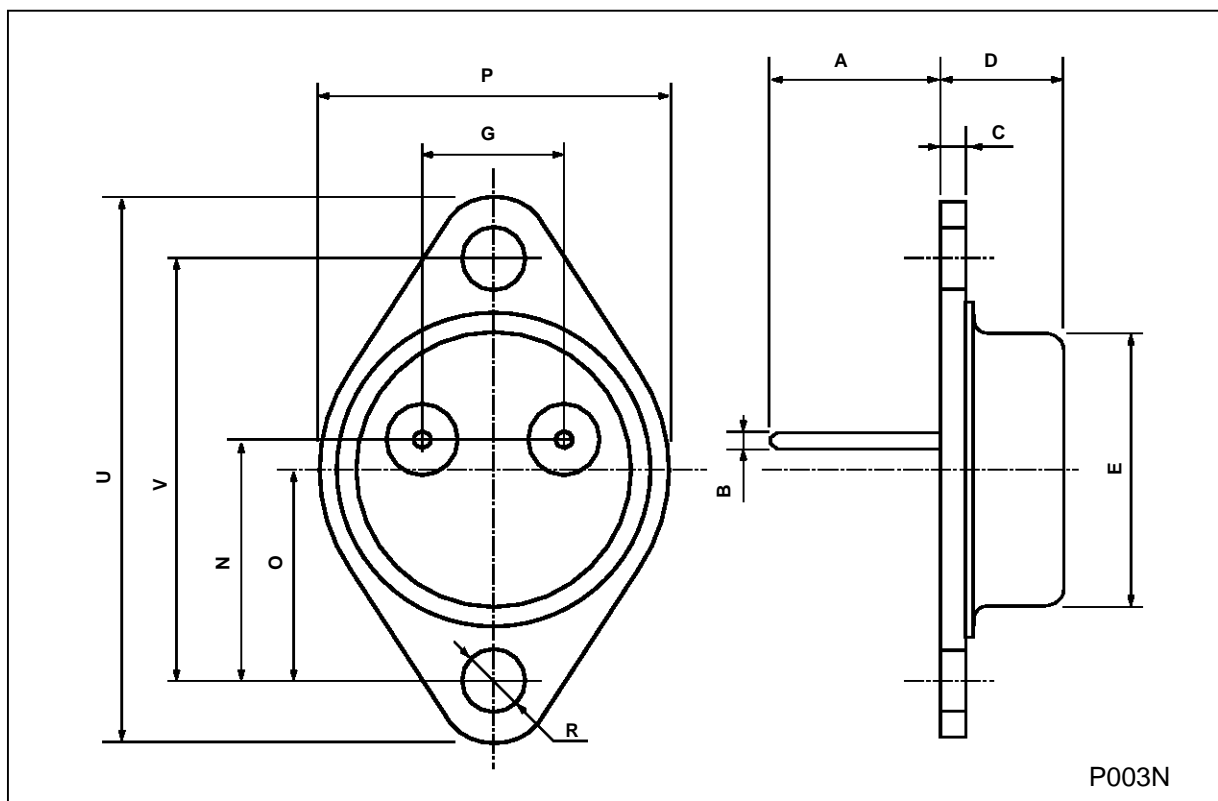
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 120 V$			1	mA
I_{CER}	Collector Cut-off Current	$V_{CE} = 80 V$ $R_{BE} = 10 \Omega$ $T_{case} = 100^{\circ}C$			10	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 10 V$			0.5	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 mA$	125			V
$V_{(BR)CBO}^*$	Collector-base Breakdown Voltage	$I_C = 5 mA$	160			V
$V_{(BR)EBO}^*$	Base-Emitter Breakdown Voltage ($I_C = 0$)	$I_E = 5 mA$	10			V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 10 A$ $I_B = 1 A$		0.5	1.4	V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 10 A$ $I_B = 1 A$		1.4	2	V
h_{FE}^*	DC Current Gain	$I_C = 10 A$ $V_{CE} = 4 V$ $I_C = 20 A$ $V_{CE} = 4 V$ $T_{case} = -30^{\circ}C$ $I_C = 10 A$ $V_{CE} = 4 V$	20 10	15	60	
f_T	Transition Frequency	$I_C = 1 A$ $V_{CE} = 15 V$ $f = 10 MHz$	7			MHz
t_{on}	Turn-on time	$I_C = 15 A$ $I_{B1} = 1.5 A$			1	μs
t_{off}	Turn-off time	$I_C = 15 A$ $I_{B1} = -I_{B2} = 1.5 A$			2	μs
	Clamped $E_{s/b}$ Collector Current	$V_{(clamp)} = 125 V$ $L = 500 \mu H$	15			A

* 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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