

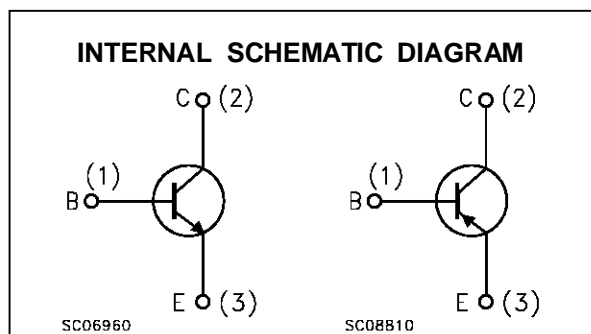
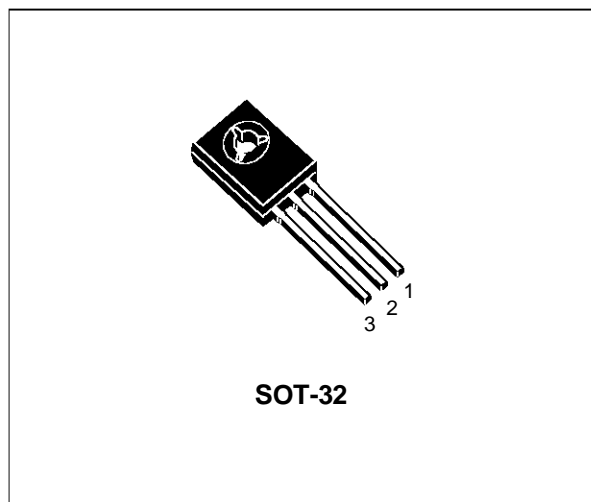
COMPLEMENTARY SILICON POWER TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The BD235 and BD237 are silicon epitaxial-base NPN power transistor in Jedec SOT-32 plastic package intended for use in medium power linear and switching applications.

The complementary PNP types are BD236 and BD238 respectively.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit	
		NPN	BD235		BD237
		PNP	BD236		BD238
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		60	100	V
V_{CER}	Collector-Base Voltage ($R_{BE} = 1K\Omega$)		60	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		60	80	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		5		V
I_C	Collector Current		2		A
I_{CM}	Collector Peak Current		6		A
P_{tot}	Total Dissipation at $T_c = 25^\circ C$		25		W
T_{stg}	Storage Temperature		-65 to 150		$^\circ C$
T_j	Max. Operating Junction Temperature		150		$^\circ C$

For PNP types voltage and current values are negative.

BD235/BD236/BD237/BD238

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	5	$^{\circ}C/W$
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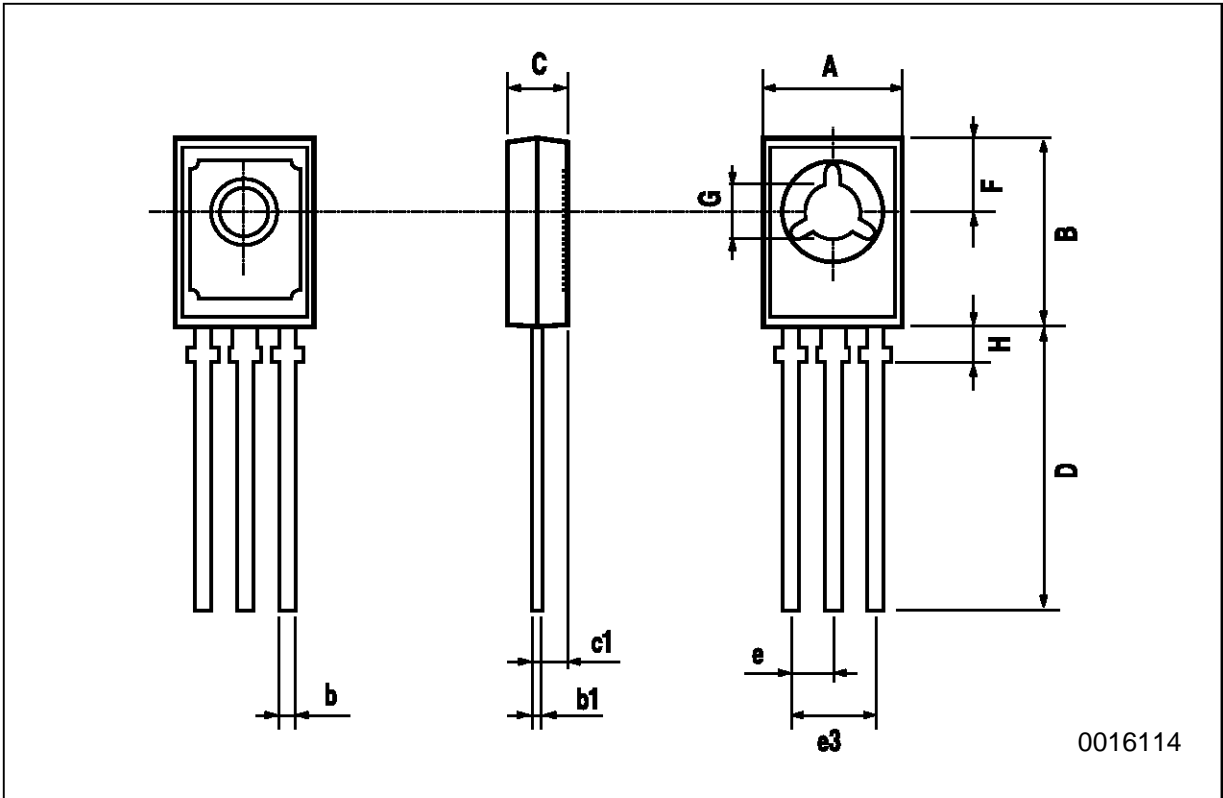
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CE} = \text{rated } V_{CEO}$ $V_{CE} = \text{rated } V_{CEO} \quad T_C = 150^{\circ}C$			0.1 2	mA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 V$			1	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 mA$ for BD235/BD236 for BD237/BD238	60 80			V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 1 A \quad I_B = 0.1 A$			0.6	V
V_{BE}^*	Base-Emitter Voltage	$I_C = 1 A \quad V_{CE} = 2 V$			1.3	V
h_{FE}^*	DC Current Gain	$I_C = 150 mA \quad V_{CE} = 2 V$ $I_C = 1 A \quad V_{CE} = 2 V$	40 25			
f_T	Transition frequency	$I_C = 250 mA \quad V_{CE} = 10 V$	3			MHz
h_{FE1}/h_{FE2}^*	Matched Pairs	$I_C = 150 mA \quad V_{CE} = 2 V$		1.6		

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

SOT-32 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100



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