

## SILICON PNP POWER DARLINGTON TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- PNP DARLINGTON
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE

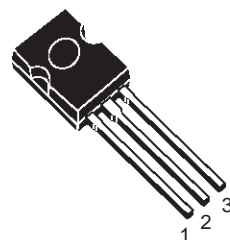
### APPLICATIONS

- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

### DESCRIPTION

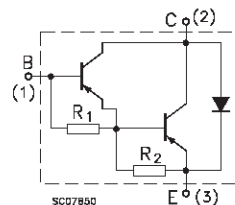
The BD336 is a silicon epitaxial-base PNP transistor in Darlington configuration mounted in SOT-82 plastic package.

It is intended for use in audio output stages general amplifier and switching applications.



**SOT-82**

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-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	-6	A
$I_{CM}$	Collector Peak Current ( $t_p < 10ms$ )	-10	A
$I_B$	Base Current	-0.15	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ C$	60	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ C$
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$

## THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	2.08	$^{\circ}C/W$
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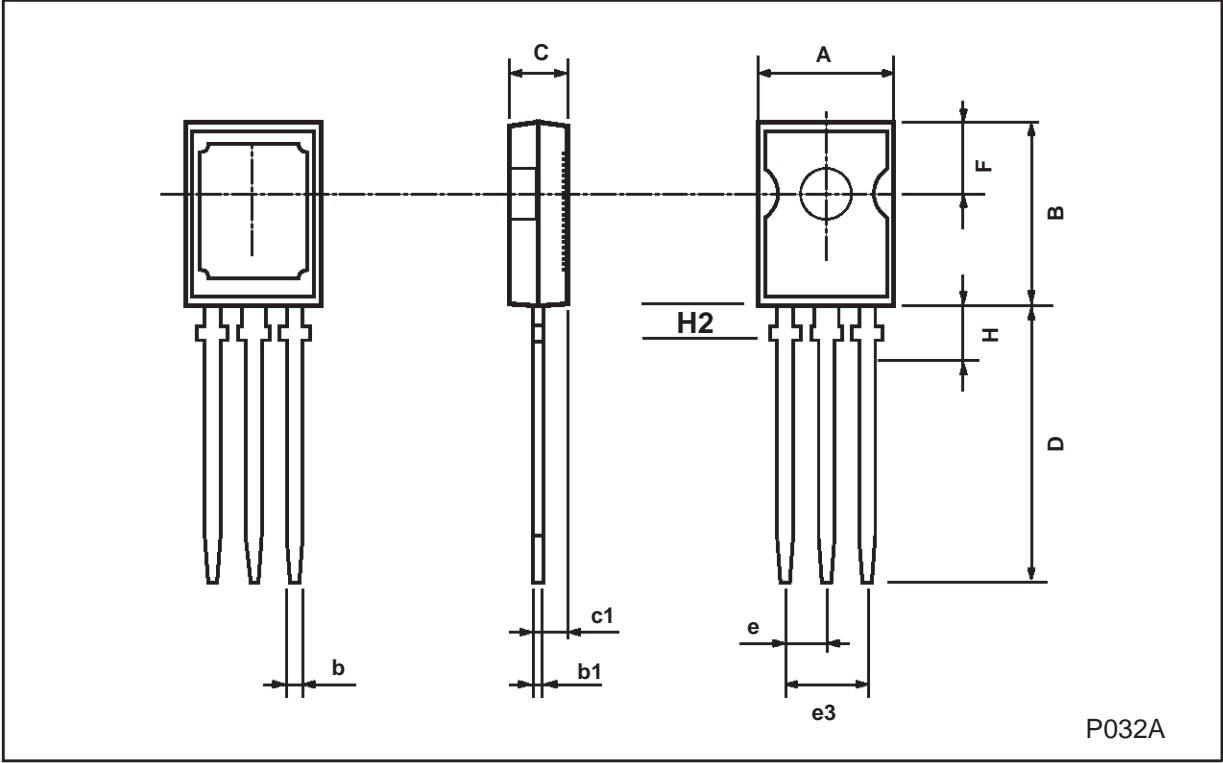
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = -100 V$ $V_{CB} = -100 V \quad T_C = 150^{\circ}C$			-0.2 -2	mA mA
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = -50 V$			-0.5	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = -5 V$			-5	mA
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = -3 A \quad I_B = -12 mA$			-2	V
$V_{BE}^*$	Base-Emitter Voltage	$I_C = -3 A \quad V_{CE} = -3 V$			-2.5	V
$h_{FE}^*$	DC Current Gain	$I_C = -0.5 A \quad V_{CE} = -3 V$ $I_C = -3 A \quad V_{CE} = -3 V$ $I_C = -6 A \quad V_{CE} = -3 V$	750	2700 400		
$V_F^*$	Parallel Diode Forward Voltage	$I_F = -3 A$		-1.8		V
$h_{fe}$	Small Signal Current Gain	$I_C = -3 A \quad V_{CE} = -3 V \quad f = 1MHz$		150		
$t_{on}$	Turn on Time	$I_C = -3 A \quad V_{CC} = -30 V$		1	2	$\mu s$
$t_{off}$	Turn off Time	$I_{B1} = -I_{B2} = -12 mA$		5	10	$\mu s$

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle  $\leq 1.5\%$

SOT-82 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		0.444
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	1.0		1.3	0.039		0.05
D	15.4		16	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
H			2.54		0.100	
H2		2.15			0.084	



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