BD336

SILICON PNP POWER DARLINGTON TRANSISTOR

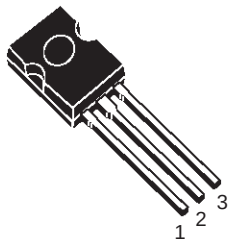
- STMicroelectronics PREFERRED SALESTYPE
- PNP DARLINGTON
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE

APPLICATIONS
- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

DESCRIPTION

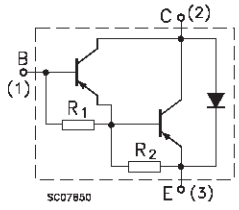
The BD336 is a silicon epitaxial-base PNP transistor in Darlingon configuration mounted in SOT-82 plastic package.

It is inteded 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 $T_c \leq 25\ ^oC$	60	W
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	2.08	$^oC/W$

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_{CB} = -100 V V_{CB} = -100 V T_C = 150 ^oC			-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 I_B = -12 mA			-2	V
V_{BE}*	Base-Emitter Voltage	I_C = -3 A V_{CE} = -3 V			-2.5	V
h_{FE}*	DC Current Gain	I_C = -0.5 A V_{CE} = -3 V I_C = -3 A V_{CE} = -3 V I_C = -6 A 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 V_{CE} = -3 V f = 1MHz		150		
t_{on}	Turn on Time	I_C = -3 A V_{CC} = -30 V I_{B1} = -I_{B2} = -12 mA		1	2	µs
t_{off}	Turn off Time			5	10	µs

* Pulsed: Pulse duration = 300 µs, duty cycle ≤ 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