

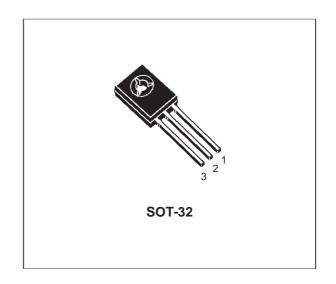
NPN SILICON TRANSISTORS

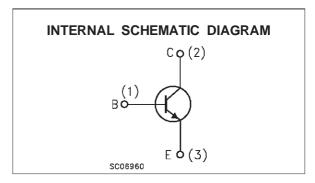
 STMicroelectronics PREFERRED SALESTYPES

DESCRIPTION

The BD135 and BD139 are silicon epitaxial planar NPN transistors in Jedec SOT-32 plastic package, designed for audio amplifiers and drivers utilizing complementary or quasi compenentary circuits.

The complementary PNP types are BD136 and BD140 respectively.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BD135	BD139	
V _{CBO}	Collector-Base Voltage (I _E = 0)	45	80	V
V_{CEO}	Collector-Emitter Voltage (I _B = 0)	45 80		V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	5		V
Ic	Collector Current	1.5		Α
I _{CM}	Collector Peak Current	3		Α
I _B	Base Current	0.5		Α
P _{tot}	Total Dissipation at T _c ≤ 25 °C	12.5		W
P _{tot}	Total Dissipation at T _{amb} ≤ 25 °C	1.25		W
T _{stg}	Storage Temperature	-65 to 150		°C
Tj	Max. Operating Junction Temperature	150		°C

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THERMAL DATA

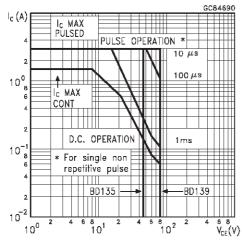
R _{thj-case} Thermal Resistance Junction-case	Max	10	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 30 V V _{CB} = 30 V T _C = 125 °C			0.1 10	μA μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			10	μΑ
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 30 mA for BD135 for BD139	45 80			V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	$I_C = 0.5 \text{ A}$ $I_B = 0.05 \text{ A}$			0.5	V
V _{BE} *	Base-Emitter Voltage	I _C = 0.5 A V _{CE} = 2 V			1	V
h _{FE} *	DC Current Gain	I _C = 5 mA	25 25 40		250	
h _{FE}	h _{FE} Groups	Ic = 150 mA V _{CE} = 2 V for BD139 group 10	63		160	

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

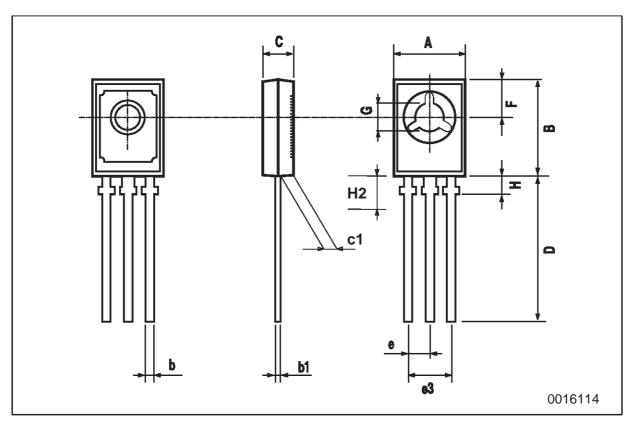
Safe Operating Area



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SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm		inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	7.4		7.8	0.291		0.307
В	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
С	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
е		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
Н			2.54			0.100



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