



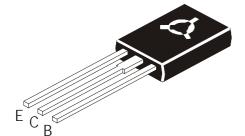
**BD139** 

**TO126** 

BD135 BD137

**Plastic Package** 

## NPN EPITAXIAL SILICON POWER TRANSISTORS



## Designed for use as Audio Amplifier and Drivers Utilizing

## Complementary BD136, BD138, BD140

#### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BD135	BD137	BD139	UNIT	
Collector -Emitter Voltage	V <sub>CEO</sub>	45	60	80	V	
Collector -Emitter Voltage (R <sub>BE</sub> =1k <b>W</b> )	V <sub>CER</sub>	45	60	100	V	
Collector -Base Voltage	V <sub>CBO</sub>	45	60	100	V	
Emitter Base Voltage	V <sub>EBO</sub>		V			
Collector Current	Ι <sub>C</sub>		А			
Collector Peak Current	I <sub>CM</sub>		А			
Base Current	Ι <sub>Β</sub>		А			
Power Dissipation @ T <sub>a</sub> =25 <sup>o</sup> C	P <sub>D</sub>		W			
Derate above 25ºC			mW/⁰C			
Power Dissipation @ T <sub>c</sub> =25 <sup>o</sup> C	PD		W			
Derate above 25°C			mW/⁰C			
Power Dissipation @ T <sub>c</sub> =70 <sup>o</sup> C	PD		W			
Operating And Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	- 55 to +150				

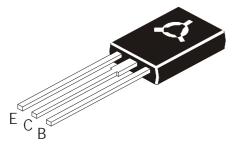
#### THERMAL CHARACTERISTICS

Junction to Ambient in free air	R <sub>th (j-a)</sub>	100	°C/W
Junction to Case	R <sub>th (j-c)</sub>	10	°C/W

#### ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Sustaining Voltage	*V <sub>CEO (sus)</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0			
		BD135	45		V
		BD137	60		V
		BD139	80		V
Collector Cut off Current	I <sub>CBO</sub>	V <sub>CB</sub> =30V, I <sub>E</sub> =0		0.1	μA
		V <sub>CB</sub> =30V, I <sub>E</sub> =0, T <sub>c</sub> =125°C		10	μA
Emitter Cut off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		10	μA
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> =0.005A, V <sub>CE</sub> =2V	25		
		I <sub>C</sub> =0.15A, V <sub>CE</sub> =2V	40	250	
		I <sub>C</sub> =0.5A, V <sub>CE</sub> =2V	25		

\*Pulse test:- Pulse width=300ms, duty cycle=2%



BD135 BD137 BD139

TO126 Plastic Package

## ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise)

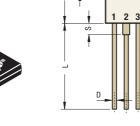
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT	
DC Current Gain	*h <sub>FE</sub> Group	I <sub>C</sub> =0.15A, V <sub>CE</sub> =2V				
		- 6	40	100		
		- 10	63	160		
		- 16	100	250		
		- 25	160	400		
Collector Emitter Saturation Voltage	*V <sub>CE (sat)</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> =0.05A		0.5	V	
Base Emitter On Voltage	*V <sub>BE(on)</sub>	*I <sub>C</sub> =0.5A, V <sub>CE</sub> =2V		1.0	V	

\*Pulse test:- Pulse width=300ms, duty cycle=2%

BD135 BD137 BD139

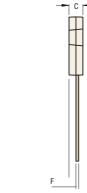
## TO126 Plastic Package





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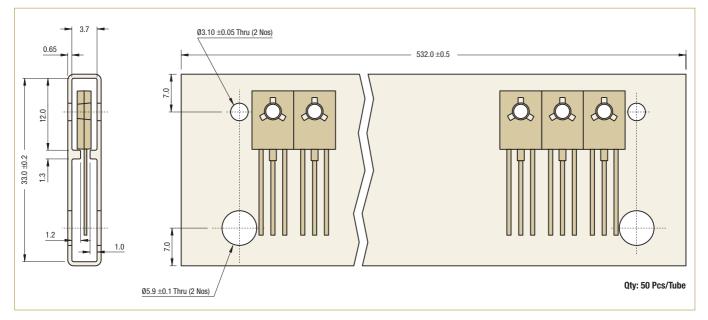


DIM	Min	Max	DIM	Min	Мах
А	7.12	8.38	G	4.07	5.08
В	10.16	11.43	L	15.00	16.63
С	2.29	3.04	М	0.89	1.65
D	0.64	0.88	Ν	3.31	4.44
Е	2.040	2.285	Р	2.54	3.30
F	0.39	0.63	S	_	2.54

Pin Configurations

Pin 1: Emitter Pin 2: Collector Pin 3: Base

# **TO-126 Series Packaging Tube**



## Packaging Specifications ...

T & A: Tape and Ammo Pack; 1	& R: Tape and Reel; Bulk	: Loose in Poly Bags; Tube:	Tube and Carton	<b>K: 1</b> ,000				
Package / Case Type	Packaging Type	Std. Packing Inner Carton			Outer Carton			
		Qty	Qty	Size L x W x H	Gross Weight	Qty	Size L x W x H	Gross Weight
				(cm)	(Kg)		(cm)	(Kg)
TO-126	Bulk	2,000	2K	19x19x8	1.4	20K	46 x 38 x 22	15.6
	Tube	1,000 (50 pcs/tube)	1K	55 x 8 x 10	1.5	10K	55 x 35 x 27	16.3

#### BD675\_683 Rev\_2 101002E

TO126 Plastic Package

#### **Component Disposal Instructions**

- 1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
- 2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

### Disclaimer

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