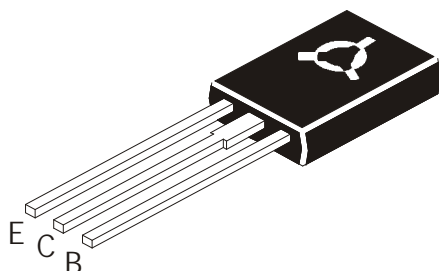


NPN EPITAXIAL SILICON POWER TRANSISTORS

**BD135 BD137
BD139**

**TO126
Plastic Package**



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_{CEO}	45	60	80	V
Collector -Emitter Voltage ($R_{BE}=1kW$)	V_{CER}	45	60	100	V
Collector -Base Voltage	V_{CBO}	45	60	100	V
Emitter Base Voltage	V_{EBO}	5.0			V
Collector Current	I_C	1.5			A
Collector Peak Current	I_{CM}	2.0			A
Base Current	I_B	0.5			A
Power Dissipation @ $T_a=25^{\circ}C$	P_D	1.25			W
Derate above $25^{\circ}C$		10			mW/ $^{\circ}C$
Power Dissipation @ $T_c=25^{\circ}C$	P_D	12.5			W
Derate above $25^{\circ}C$		100			mW/ $^{\circ}C$
Power Dissipation @ $T_c=70^{\circ}C$	P_D	8.0			W
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150			$^{\circ}C$

THERMAL CHARACTERISTICS

Junction to Ambient in free air	$R_{th(j-a)}$	100	$^{\circ}C/W$
Junction to Case	$R_{th(j-c)}$	10	$^{\circ}C/W$

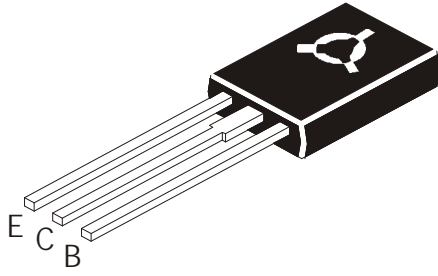
ELECTRICAL CHARACTERISTICS ($T_c=25^{\circ}C$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Sustaining Voltage	* $V_{CEO(sus)}$	$I_C=30mA, I_B=0$			
		BD135	45		V
		BD137	60		V
		BD139	80		V
Collector Cut off Current	I_{CBO}	$V_{CB}=30V, I_E=0$		0.1	μA
		$V_{CB}=30V, I_E=0, T_c=125^{\circ}C$		10	μA
Emitter Cut off Current	I_{EBO}	$V_{EB}=5V, I_C=0$		10	μA
DC Current Gain	* h_{FE}	$I_C=0.005A, V_{CE}=2V$	25		
		$I_C=0.15A, V_{CE}=2V$	40	250	
		$I_C=0.5A, V_{CE}=2V$	25		

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

NPN EPITAXIAL SILICON POWER TRANSISTORS

BD135 BD137
BD139



TO126
Plastic Package

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
DC Current Gain	* h_{FE} Group	$I_C=0.15\text{A}$, $V_{CE}=2\text{V}$			
		- 6	40	100	
		- 10	63	160	
		- 16	100	250	
		- 25	160	400	
Collector Emitter Saturation Voltage	* $V_{CE(sat)}$	$I_C=0.5\text{A}$, $I_B=0.05\text{A}$		0.5	V
Base Emitter On Voltage	* $V_{BE(on)}$	* $I_C=0.5\text{A}$, $V_{CE}=2\text{V}$		1.0	V

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

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

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119
email@cdil.com www.cdilsemi.com