

Continental Device India Limited







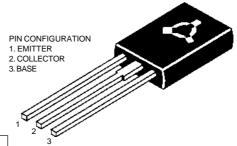
TO-126 (SOT-32) Plastic Package

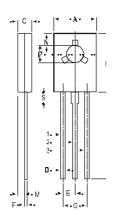
BD135, BD137, BD139

BD135, 137, 139 NPN PLASTIC POWER TRANSISTORS

Complementary BD136, 138, 140

Medium Power Linear and Switching Applications





DIM	MIN.	MAX.			
A	7.4	7.8			
В	10.5	10.8			
С	2.4	2.7			
D	0.7	0.9			
E	2.25 TYP.				
F	0.49	0.75			
G	4.5 TYP.				
L	15.7 TYP.				
М	1.27 TYP.				
N	3.75 TYP				
P	3.0	3.2			
\$	2.5	TYP.			
ALL DIMENSIONS IN MM					

ABSOLUTE MAXIMUM RATINGS

			135	137	<i>139</i>	
Collector-base voltage (open emitter)	V_{CBO}	max.	45	<i>60</i>	100	V
Collector-emitter voltage (open base)	$V_{C\!E\!O}$	max.	45	60	<i>80</i>	V
Collector current	I_C	max.		1.5		\boldsymbol{A}
Total power dissipation up to $T_C = 25^{\circ}C$	P_{tot}	max.		12.5		W
Junction temperature	T_{j}	max.		<i>150</i>		${}^{\circ}\!C$
Collector-emitter saturation voltage	· ·					
$I_C = 0.5 A$; $I_B = 0.05 A$	V_{CEsat}	max.		0.5		V
D.C. current gain						
$I_C = 0.15 A$; $V_{CE} = 2 V$	$h_{\!F\!E}$	min.		40		
		max.		<i>250</i>		

RATINGS (at T_A=25 C unless otherwise specified)

Limiting values			<i>135</i>	137	<i>139</i>	
Collector-base voltage (open emitter)	V_{CBO}	max.	45	60	100	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	<i>80</i>	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5.0		V

Collector current	I_C	max.		1.5		\boldsymbol{A}
Base current	I_B	max.		0.5		\boldsymbol{A}
Total power dissipation up to $T_A = 25^{\circ}C$	P_{tot}	max.		1.25		W
Derate above 25°C	_	max		10		mW/℃
Total power dissipation up to $T_C = 25^{\circ}C$	P_{tot}	max.		12.5		W
Derate above 25°C	_	max		100		mW/℃
Junction temperature	T_{ij} T_{stg}	max.	0.5	150	170	${}^{\!$
Storage temperature	1 _{stg}		-65	to +1	150	${\mathscr C}$
THERMAL RESISTANCE						
From junction to case	R_{thj-c}			10		CW
From junction to ambient	$R_{th j-a}$			100		CW
CHARACTERISTICS						
$T_{amb} = 25^{\circ}C$ unless otherwise specified						
1			<i>135</i>	137	139	
Collector cutoff current						
$I_E = 0; \ V_{CB} = 30 \ V$	I_{CBO}	max.		0.1		μA
$I_E = 0$; $V_{CB} = 30 \ V$; $T_C = 125 ^{\circ}C$	I_{CBO}	max.		10		μA
Emitter cut-off current						
$I_C = 0$; $V_{EB} = 5 V$	I_{EBO}	max.		10		μA
Breakdown voltages						
$I_C = 0.03 \; A; \; I_B = 0$	$V_{CEO(sus)}^*$	min.	45	<i>60</i>	<i>80</i>	V
$I_C = 1 \text{ mA}; I_E = 0$	V_{CBO}	min.	45	60	100	V
$I_E = 1 \text{ mA}; I_C = 0$	V_{EBO}	min.		5.0		V
Saturation voltage						
$I_C = 0.5 A; I_B = 0.05 A$	V_{CEsat}^*	max.		0.5		V
Base-emitter on voltage						
$I_C = 0.5A; V_{CE} = 2V$	$V_{BE(on)}^*$	max.		1.0		V
D.C. current gain						
$I_C = 0.005 \ A; \ V_{CE} = 2 \ V^*$	h_{FE}^*	min.		25		
$I_C = 0.15 A$; $V_{CE} = 2 V^{**}$	h_{FE}^*	min.		40		
C and A CE	1 L	max.		250		
$I_C = 0.5 A; V_{CE} = 2 V^*$	h_{FE}^*	min.		25		
** hfe classification:	-6	min.	40			
HFE CIASSIFICATION.	-0	max.	100			
		шах.	100			
	-10	min.	63			
		max.	160			
	-16	min.	100			
		max.				
	0.7					
	-25	min.	160			
* Pulse test mules width < 200 us duty ou	ala < 20/	max.	400			

^{*} Pulse test: pulse width \leq 300 μ s, duty cycle \leq 2%.

Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete 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 on the CDIL Web Site/CD is 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 Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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