



NPN BD136 – BD138 – BD140

SILICON PLANAR EPITAXIAL POWER TRANSISTORS.

The BD136-BD138-BD140 are PNP Transistors
 They are recommended for driver stages in hi-fi amplifiers and television circuits.
 They are mounted in Jedec TO-126 plastic package.
 NPN complements are BD135-BD137-BD139.
 Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
$-V_{CBO}$	Collector-Base Voltage ($I_E = 0$)	BD135	45	V
		BD137	60	
		BD139	100	
$-V_{CEO}$	Collector-Emitter Voltage ($I_B = 0$)	BD135	45	V
		BD137	60	
		BD139	80	
$-V_{CER}$	Collector-Emitter Voltage ($R_{BE} = 1\text{ k}\Omega$)	BD135	45	V
		BD137	60	
		BD139	100	
$-V_{EBO}$	Emitter-Base Voltage ($I_E = 0$)	5	V	
$-I_C$	Collector Current	$-I_C$	1.5	A
		$-I_{CM}$	2	
$-I_B$	Base current	0.5	A	
P_T	Total power Dissipation @ $T_{mb} = 70^\circ\text{C}$	8	Watts	
T_J	Junction Temperature	150	$^\circ\text{C}$	
T_{Stg}	Storage Temperature	-65 to +150	$^\circ\text{C}$	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-mb}	Thermal Resistance, Junction to mounting base	10	K/W
R_{thJ-a}	Thermal Resistance, Junction to ambient in free air	100	K/W

NPN BD136 – BD138 – BD140

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

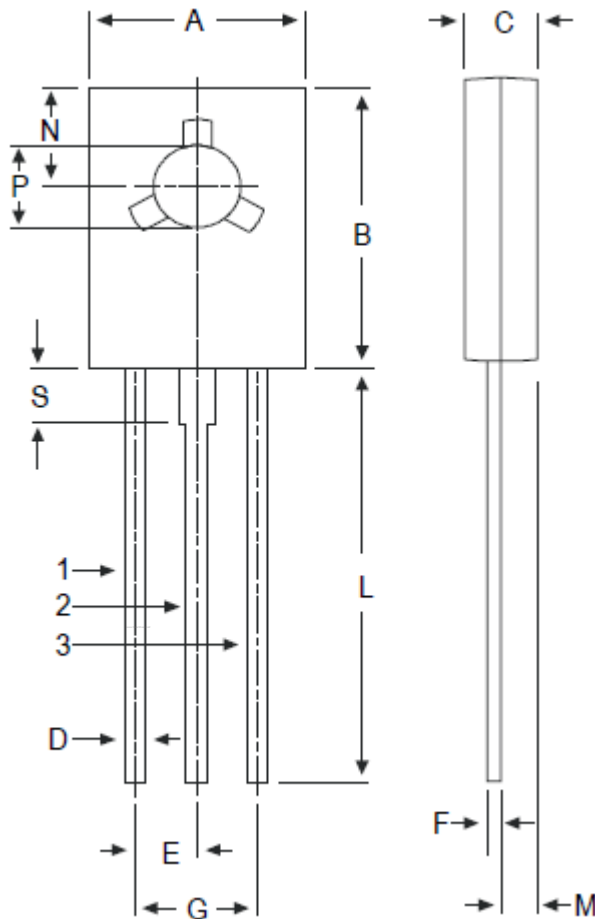
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$-I_{CBO}$	Collector cut-off current	$I_E=0, -V_{CB}=30\text{ V}$	BD135	-	-	0,1	μA
			BD137	-	-	0,1	
			BD139	-	-	0,1	
		$I_E=0, -V_{CB}=30\text{ V}$ $T_J=125^\circ\text{C}$	BD135	-	-	10	
			BD137	-	-	10	
			BD139	-	-	10	
$-I_{EBO}$	Emitter cut-off current	$I_C=0, -V_{EB}=5\text{ V}$	-	-	10	μA	
$-V_{CEO(SUS)}$	Collector-Emitter sustaining Voltage (*)	$I_B=0, -I_C=30\text{ mA}$	BD135	45	-	-	V
			BD137	60	-	-	
			BD139	80	-	-	
$-V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$-I_C=0.5\text{ A}, -I_B=50\text{ mA}$	-	-	0,5	V	
h_{FE}	DC Current Gain (*)	$-V_{CE}=2\text{ V}, -I_C=5\text{ mA}$	BDxxx	40	-	250	
			BDxxx -10	63	-	160	
			BDxxx -16	100	-	250	
			$-V_{CE}=2\text{ V}, -I_C=500\text{ mA}$	25	-	-	
$-V_{BE}$	Base-Emitter Voltage(*)	$-V_{CE}=2\text{ V}, -I_C=500\text{ mA}$	-	-	1	V	
f_T	Transition frequency	$-V_{CE}=5\text{ V}, -I_C=50\text{ mA}$ $f=35\text{ MHz}$	-	75	-	MHz	

(*) Measured under pulse conditions : $t_p < 300\mu\text{s}$, $\delta < 2\%$.

NPN BD136 – BD138 – BD140
MECHANICAL DATA CASE TO-126

	DIMENSIONS	
	min	max
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 typ.	
F	0.49	0.75
G	4.4 typ.	
L	15.7 typ.	
M	1.27 typ.	
N	3.75 typ.	
P	3.0	3.2
S	2.54 typ.	

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



Revised August 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.