SGS-THOMSON
MICROELECTRONICS

BD135
BD137-BD139

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

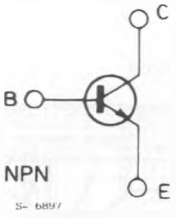
DESCRIPTION

The BD135, BD137, BD139 are silicon epitaxial planar NPN transistors in Jedec TO-126 plastic package, designed for audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

The complementary PNP types are the BD136, BD138 and BD140 respectively.

TO-126

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	BD135	BD137	BD139	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	45	60	80	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	45	60	80	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	5			V
I_C	Collector Current	1.5			A
I_{CM}	Collector Peak Current	3			A
I_B	Base Current	0.5			A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$ $T_{amb} \leq 25°C$	12.5 1.25			W W
T_{stg}	Storage Temperature	– 55 to 150			°C
T_j	Junction Temperature	150			°C

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	10	°C/W

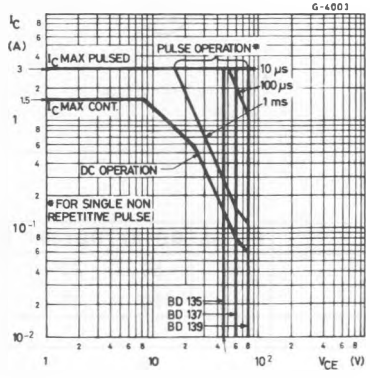
ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 30V			0.1	µA
		T_{case} = 125°C				
		V_{CB} = 30V			10	µA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 5V			10	µA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 30mA				
		for **BD135**	45			V
		for **BD137**	60			V
		for **BD139**	80			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 500mA I_B = 50mA			0.5	V
V_{BE}*	Base-emitter on Voltage	I_C = 0.5A V_{CE} = 2V			1	V
h_{FE}*	DC current Gain	I_C = 5mA V_{CE} = 2V	25			
		I_C = 0.5A V_{CE} = 2V	25			
		All Types				
		I_C = 150mA V_{CE} = 2V				
		for **BD135**	40		250	
		for **BD137, BD139**	40		160	

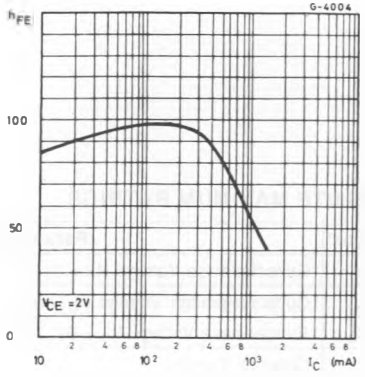
* Pulsed : pulse duration = 300µs, duty cycle ≤ 2%.

Available in h_{FE} groups (I_C = 150mA ; V_{CE} = 2V)		Min.	Max.
	h_{FE} group 6	40	100
	10	63	160
	16	100	250

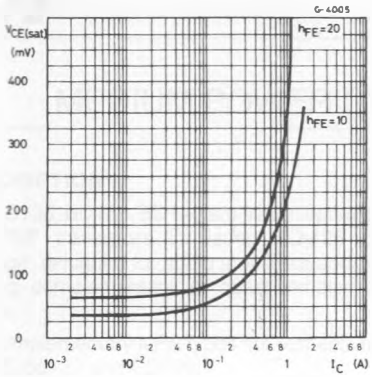
Safe Operating Area



DC Current Gain



Collector-emitter Saturation Voltage.



Base-emitter Voltage.