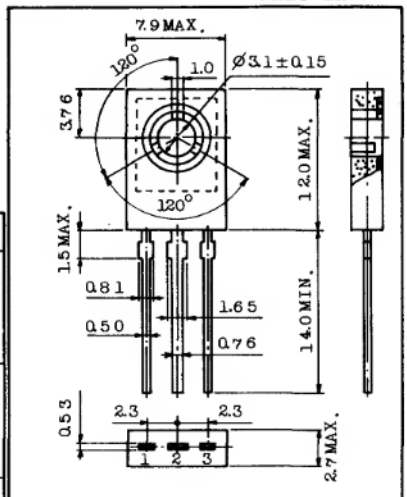
SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

BD135
BD137
BD139

MEDIUM POWER AMPLIFIER APPLICATIONS.

Unit in mm



1. EMITTER
2. COLLECTOR (HEAT SINK)
3. BASE

JEDEC	TO-126
EIAJ	—
TOSHIBA	2-8F1A

Weight : 0.72g

FEATURES:

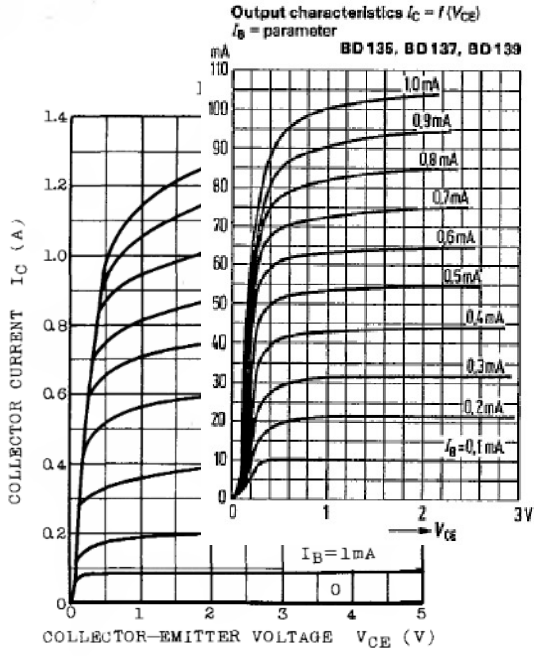
. Designed for Complementary Use with BD136, BD138 and BD140.

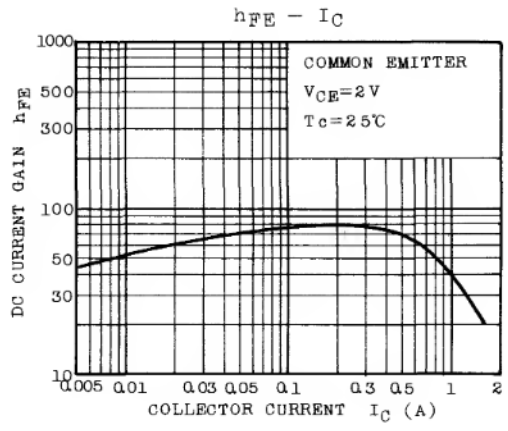
MAXIMUM RATINGS (Ta=25°C)

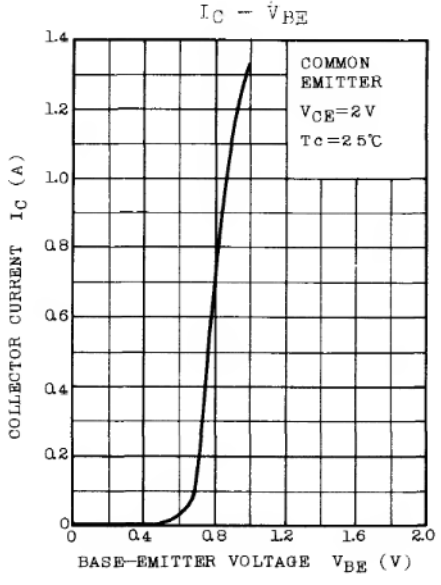
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	BD135	V_{CBO}	45	V
	BD137		60	
	BD139		80	
Collector-Emitter Voltage	BD135	V_{CEO}	45	V
	BD137		60	
	BD139		80	
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	0.5	A
	Peak	I_{CM}	1.5	
Collector Power Dissipation	Ta=25°C	P_C	1	W
	Tc≦60°C		6.5	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55 ~ 150	°C

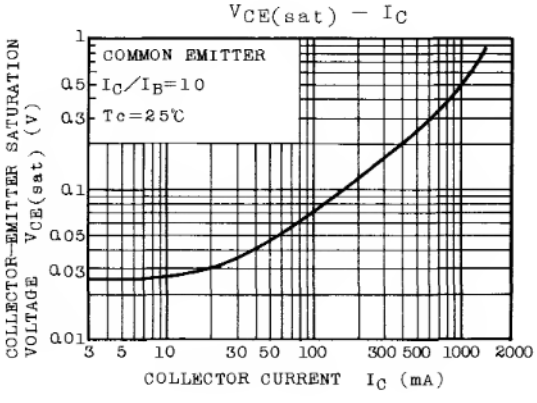
ELECTRICAL CHARACTERISTICS (Ta=25°C)

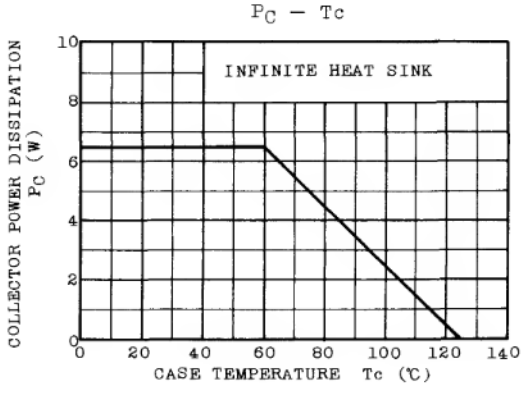
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=30V, I_E=0	-	-	0.1	μA
			V_{CB}=30V, I_E=0, Ta=125°C	-	-	10	
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	10	μA
Collector-Emitter Breakdown Voltage	BD135	$V_{(BR)CEO}$	I_C=30mA, I_B=0	45	-	-	V
	BD137			60	-	-	
	BD139			80	-	-	
DC Current Gain		$h_{FE(1)}$	V_{CE}=2V, I_C=5mA	25	-	-	
		$h_{FE(2)}$	V_{CE}=2V, I_C=150mA	40	-	250	
		$h_{FE(3)}$	V_{CE}=2V, I_C=500mA	25	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=500mA, I_B=50mA	-	-	0.5	V
Base-Emitter Voltage		V_{BE}	V_{CE}=2V, I_C=500mA	-	-	1.0	V
Transition Frequency		f_T	V_{CE}=2V, I_C=50mA	50	250	-	MHz


Output characteristics $I_C = f(V_{CE})$
I_B = parameter
BD135, BD137, BD139
mA
1.0mA
0.9mA
0.8mA
0.7mA
0.6mA
0.5mA
0.4mA
0.3mA
0.2mA
I_B=0.1mA
I_B=1mA
V_{CE}
COLLECTOR CURRENT I_C (A)
COLLECTOR–EMITTER VOLTAGE V_{CE} (V)

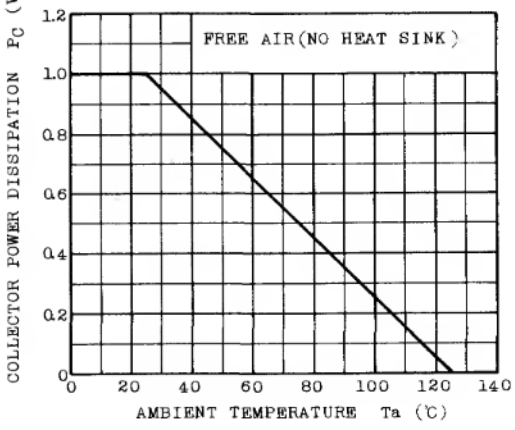

h_{FE} – I_C
COMMON EMITTER
V_{CE}=2V
Tc=25℃
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (A)


I_C – V_{BE}
COMMON EMITTER
V_{CE}=2V
Tc=25℃
COLLECTOR CURRENT I_C (A)
BASE–EMITTER VOLTAGE V_{BE} (V)


$V_{CE(sat)}$ – I_C
COMMON EMITTER
I_C/I_B=10
Tc=25℃
COLLECTOR–EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
COLLECTOR CURRENT I_C (mA)


P_C – Tc
INFINITE HEAT SINK
COLLECTOR POWER DISSIPATION P_C (W)
CASE TEMPERATURE Tc (℃)

P_C – Ta



SAFE OPERATING AREA