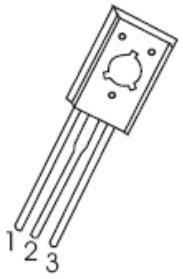
MJE170 TRANSISTOR (PNP)

TO – 126

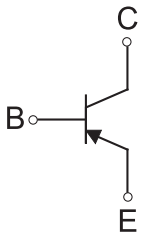


1. EMITTER
2. COLLECTOR
3. BASE

FEATURES

- Low Power Audio Amplifier
- Low Current, High Speed Switching Applications

Equivalent Circuit

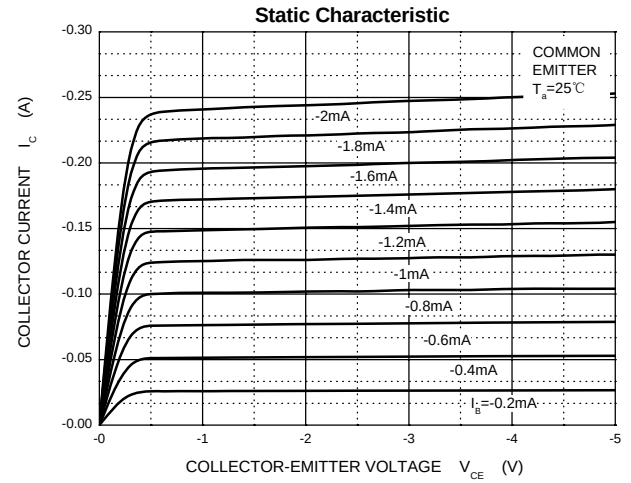


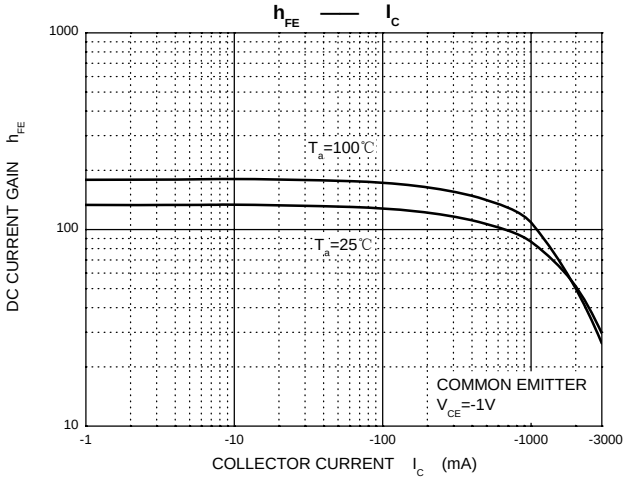
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

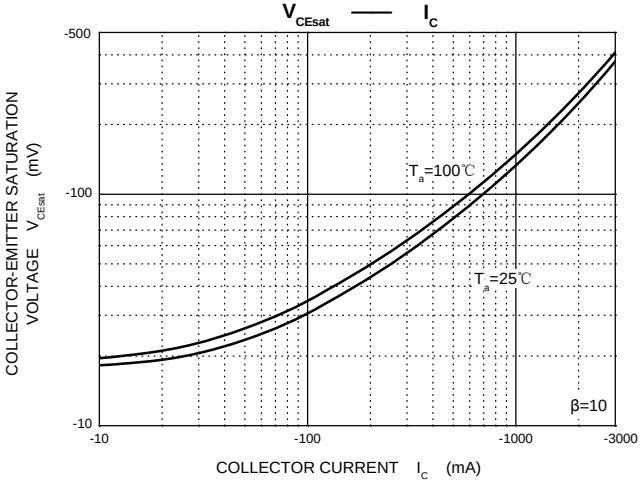
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-7	V
I_C	Collector Current	-3	A
P_C	Collector Power Dissipation	1.5	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	83	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

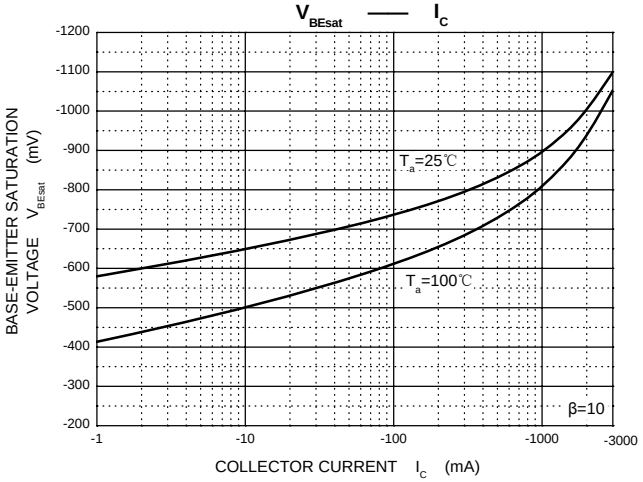
T_a=25℃ unless otherwise specified

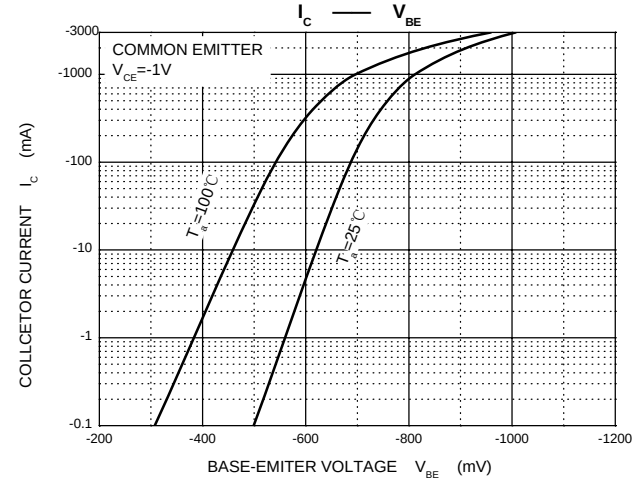
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-1mA,I_E=0	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-1mA,I_C=0	-7			V
Collector cut-off current	I_{CBO}	V_{CB}=-60V,I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-7V,I_C=0			-0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=-1V, I_C=-100mA	50		250	
	$h_{FE(2)}$	V_{CE}=-1V, I_C=-500mA	30			
	$h_{FE(3)}$	V_{CE}=-1V, I_C=-1.5A	12			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-500mA,I_B=-50mA			-0.3	V
		I_C=-3A,I_B=-600mA			-1.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-1.5A,I_B=-150mA			-1.5	V
		I_C=-3A,I_B=-600mA			-2	V
Base-emitter voltage	V_{BE}	V_{CE}=-1V, I_C=-500mA			-1.2	V
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0, f=10MHz			50	pF
Transition frequency	f_T	V_{CE}=-10V,I_C=-100mA, f=10MHz	50			MHz

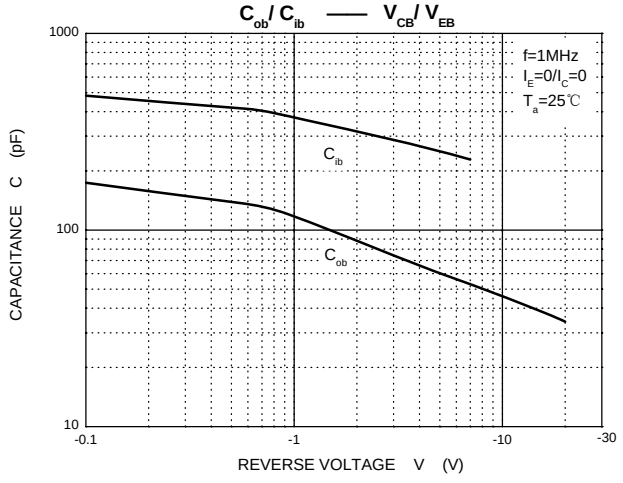

Static Characteristic
COMMON EMITTER
T_a=25℃
-2mA
-1.8mA
-1.6mA
-1.4mA
-1.2mA
-1mA
-0.8mA
-0.6mA
-0.4mA
I_B=-0.2mA
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

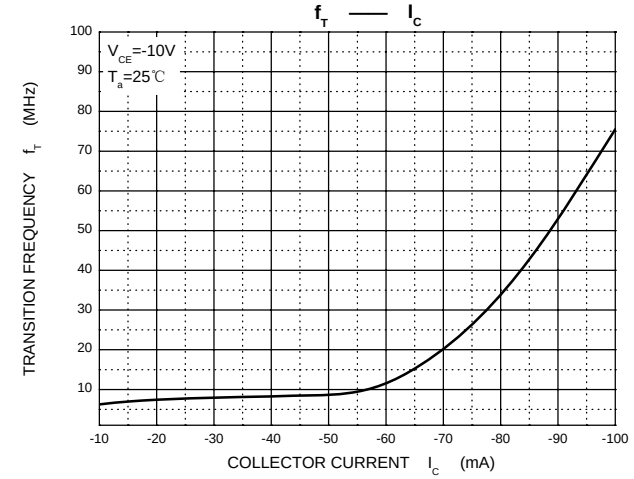

h_{FE} — I_C
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=-1V
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)

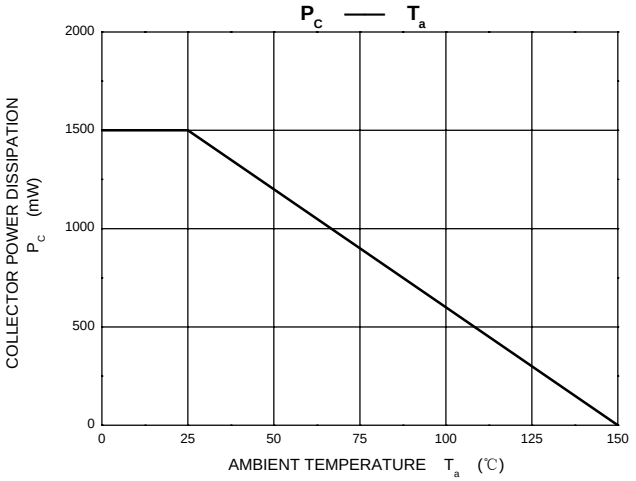

V_{CEsat} — I_C
T_a=100℃
T_a=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURRENT I_C (mA)

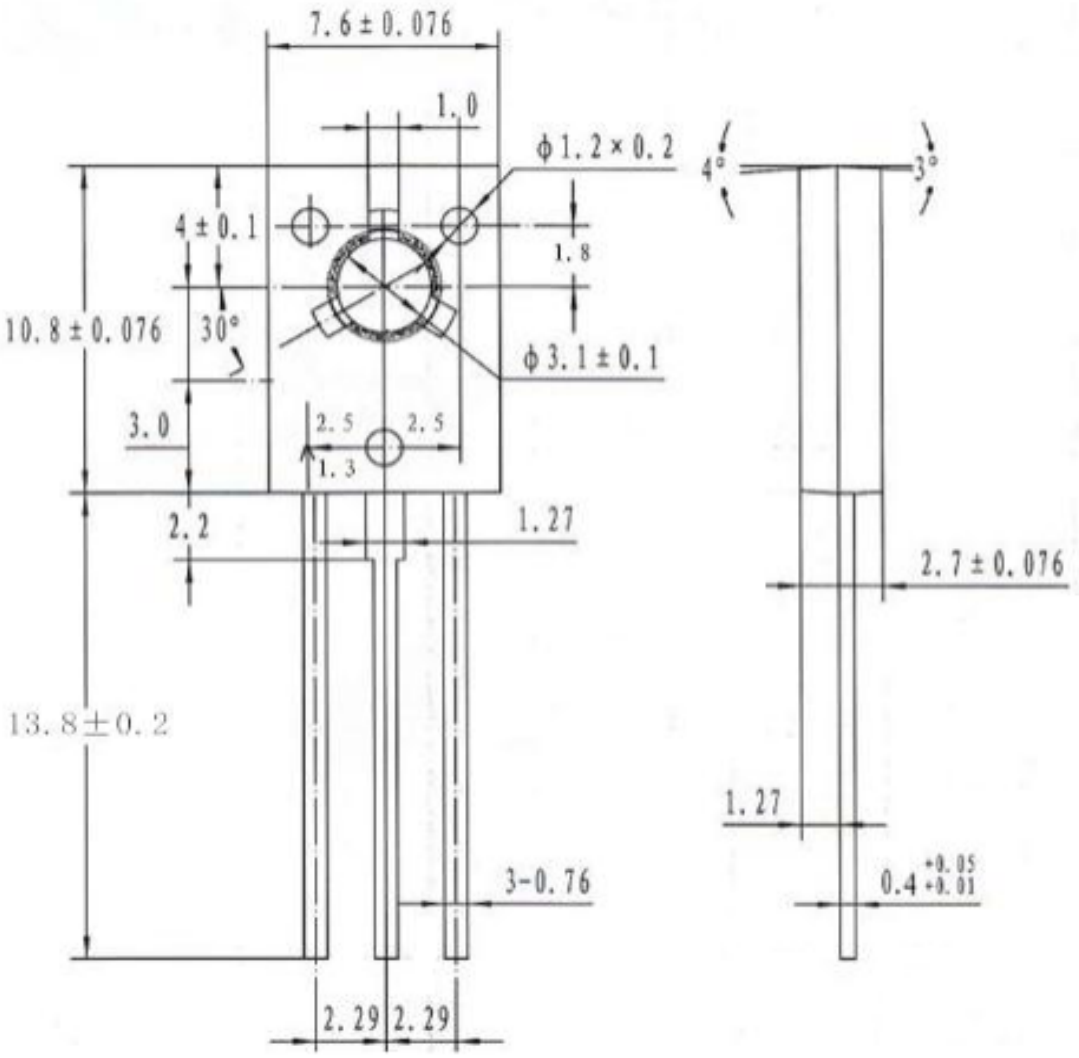

V_{BEsat} — I_C
T_a=25℃
T_a=100℃
β=10
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURRENT I_C (mA)

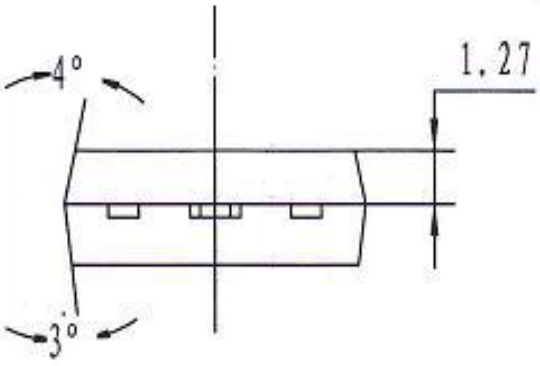

I_C — V_{BE}
COMMON EMITTER
V_{CE}=-1V
T_a=100℃
T_a=25℃
COLLCETOR CURRENT I_C (mA)
BASE-EMITER VOLTAGE V_{BE} (mV)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


f_T — I_C
V_{CE}=-10V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
AMBIENT TEMPERATURE T_a (℃)


7.6±0.076
1.0
φ1.2×0.2
4±0.1
1.8
10.8±0.076
30°
φ3.1±0.1
3.0
2.5
2.5
1.3
2.2
1.27
13.8±0.2
3-0.76
2.29
2.29
4°
3°
2.7±0.076
1.27
0.4 +0.05 +0.01


4°
1.27
3°