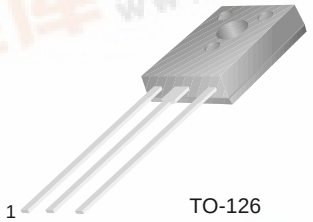
FAIRCHILD SEMICONDUCTOR™

MJE180/181/182

Low Power Audio Amplifier
Low Current High Speed Switching Applications



TO-126

1. Emitter 2.Collector 3.Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : MJE180	60	V
	: MJE181	80	V
	: MJE182	100	V
V_{CEO}	Collector-Emitter Voltage : MJE180	40	V
	: MJE181	60	V
	: MJE182	80	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	3	A
I_{CP}	Collector Current (Pulse)	6	A
I_B	Base Current	1	A
P_C	Collector Dissipation (T_a=25°C)	1.5	W
P_C	Collector Dissipation (T_C=25°C)	12.5	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CEO}	Collector -Emitter Breakdown Voltage				
	: MJE180	I_C = 10mA, I_B = 0	40		V
	: MJE181		60		V
	: MJE182		80		V
I_{CBO}	Collector Cut-off Current : MJE180	V_{CB} = 60V, I_B = 0		0.1	µA
	: MJE181	V_{CB} = 80V, I_E = 0		0.1	µA
	: MJE182	V_{CB} = 100V, I_E = 0		0.1	µA
	: MJE180	V_{CB} = 60V, I_E = 0 @ T_C = 150°C		0.1	mA
	: MJE181	V_{CB} = 80V, I_E = 0 @ T_C = 150°C		0.1	mA
	: MJE182	V_{CB} = 100V, I_E = 0 @ T_C = 150°C		0.1	mA
I_{EBO}	Emitter Cut-off Current	V_{BE} = 7V, I_C = 0		0.1	µA
h_{FE}	DC Current Gain	V_{CE} = 1V, I_C = 100mA	50	250	
		V_{CE} = 1V, I_C = 500mA	30		
		V_{CE} = 1V, I_C = 1.5A	12		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 500mA, I_B = 50mA		0.3	V
		I_C = 1.5A, I_B = 150mA		0.9	V
		I_C = 3A, I_B = 600mA		1.7	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 1.5A, I_B = 150mA		1.5	V
		I_C = 3A, I_B = 600mA		2.0	V
V_{BE}(on)	Base-Emitter ON Voltage	V_{CE} = 1V, I_C = 500mA		1.2	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 100mA	50		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 0.1MHz		30	pF

Typical Characteristics

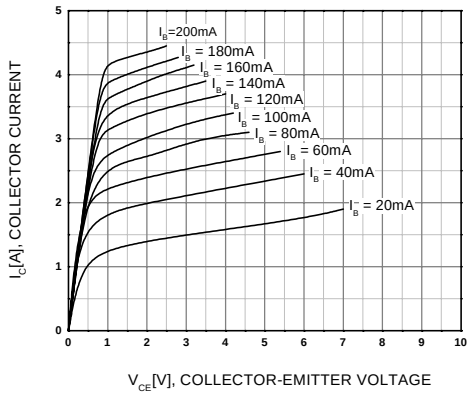


Figure 1. Static Characteristic

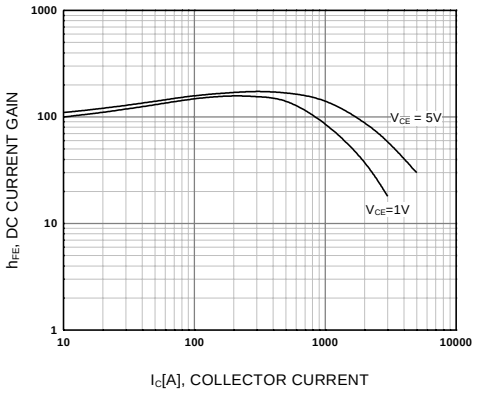


Figure 2. DC current Gain

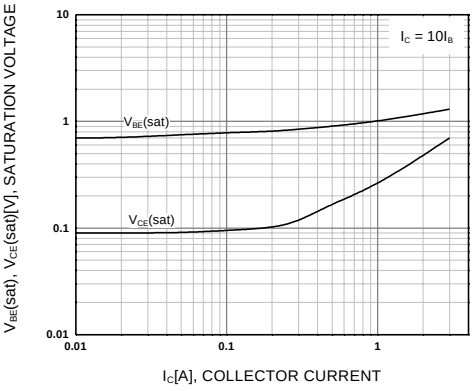


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

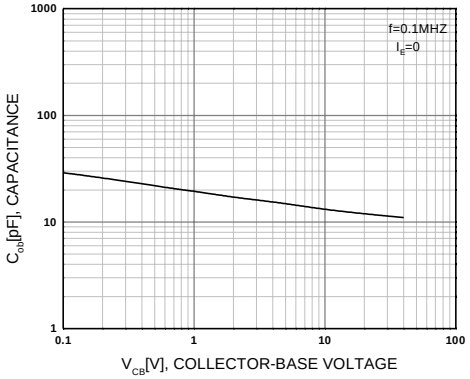


Figure 4. Collector Output Capacitance

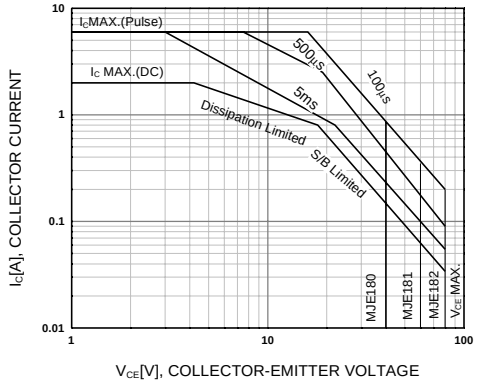


Figure 5. Safe Operating Area

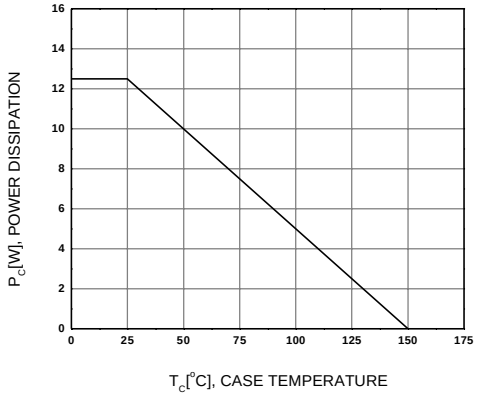


Figure 6. Power Derating

Package Demensions

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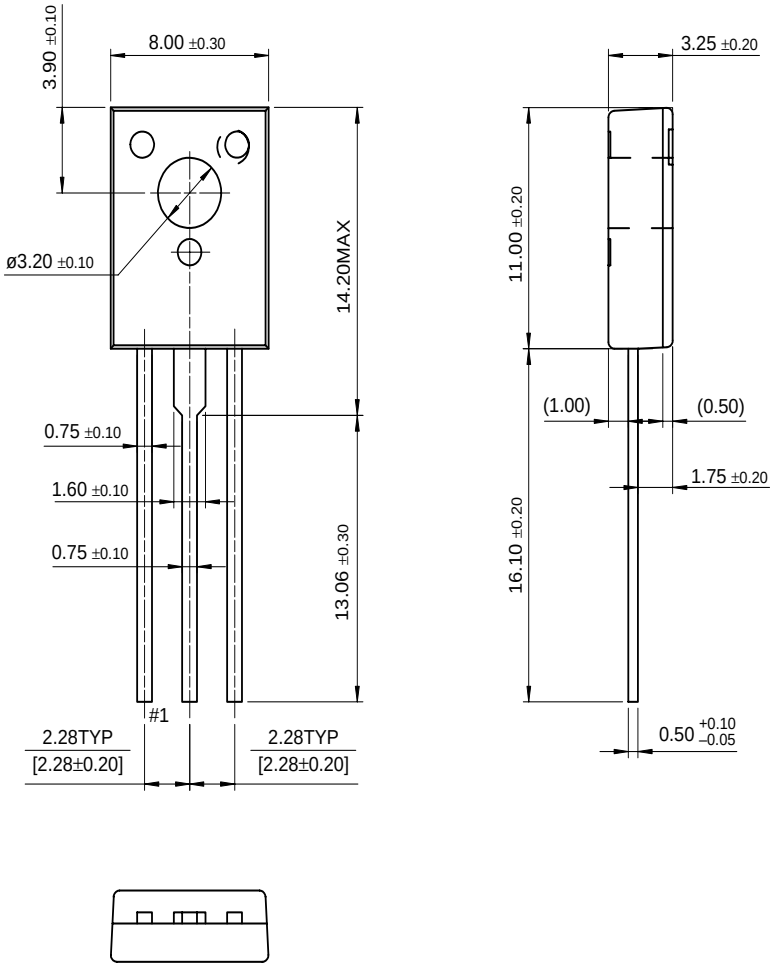

Dimensions in Millimeters

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