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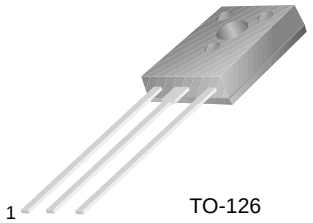
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
SEMICONDUCTOR TM

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

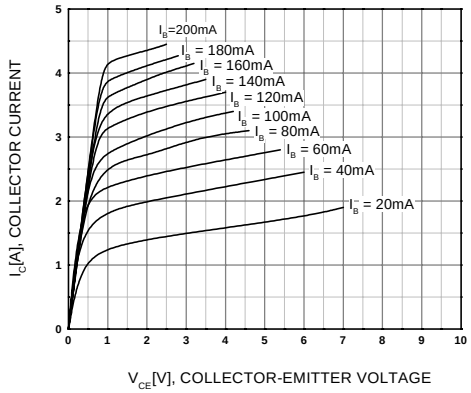


Figure 1. Static Characteristic

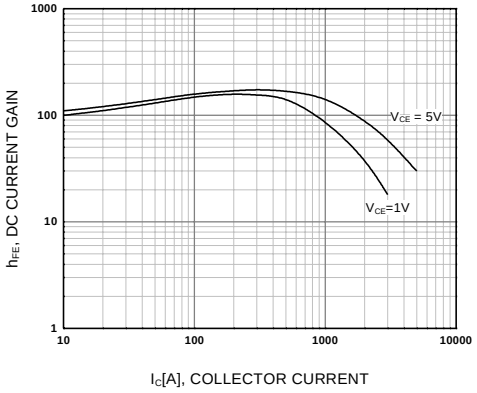


Figure 2. DC current Gain

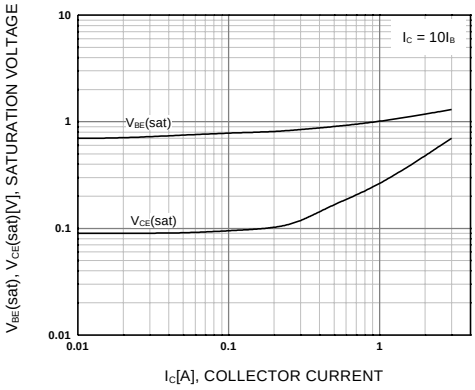


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

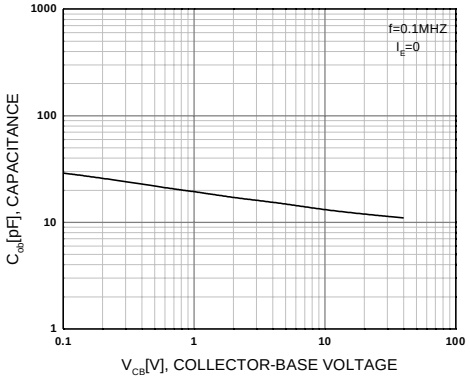


Figure 4. Collector Output Capacitance

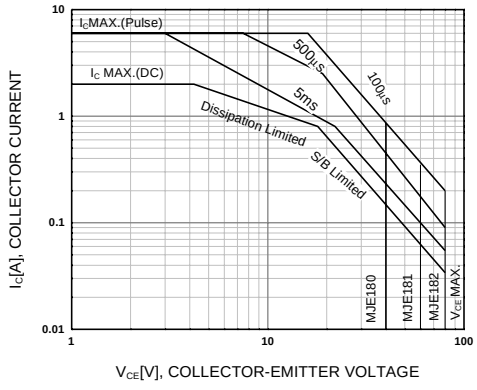


Figure 5. Safe Operating Area

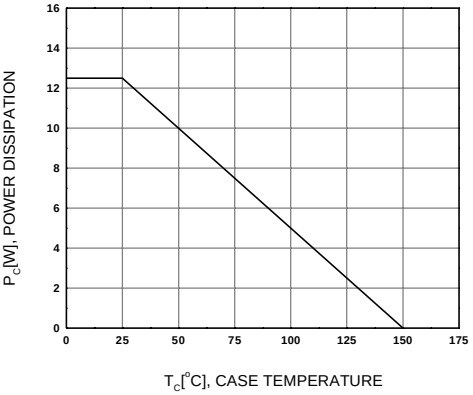
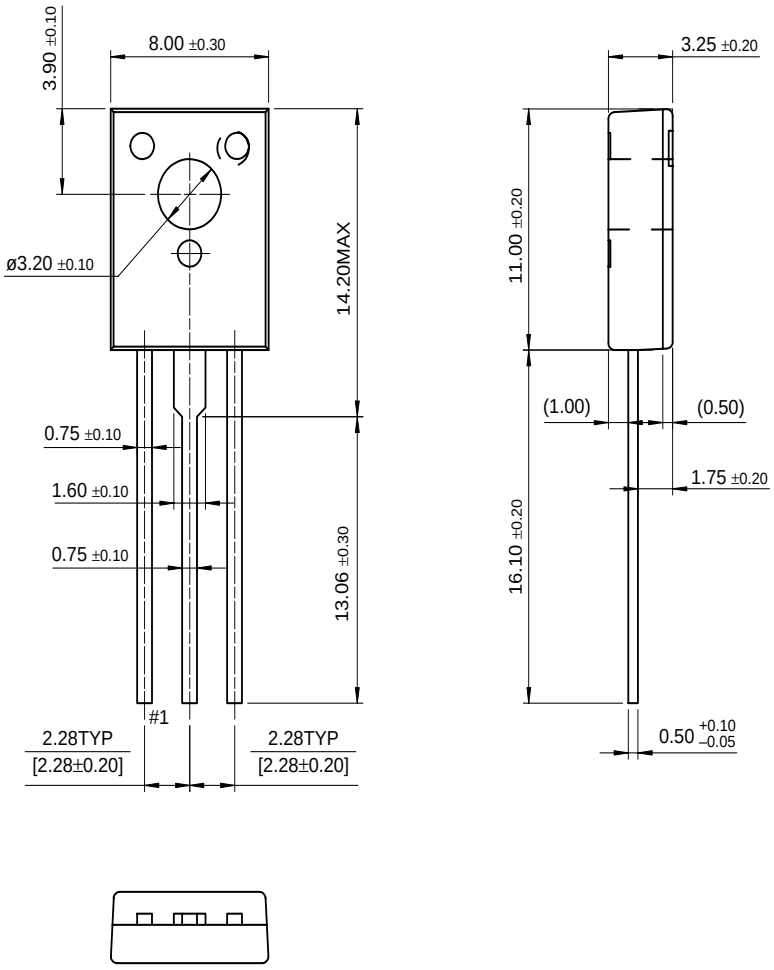


Figure 6. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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