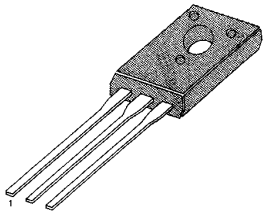
MJE170/171/172 PNP EPITAXIAL SILICON TRANSISTOR

LOW POWER AUDIO AMPLIFIER
LOW CURRENT, HIGH SPEED
SWITCHING APPLICATIONS

TO-126



1. Emitter 2. Collector 3. Base

ABSOLUTE MAXIMUM RATINGS

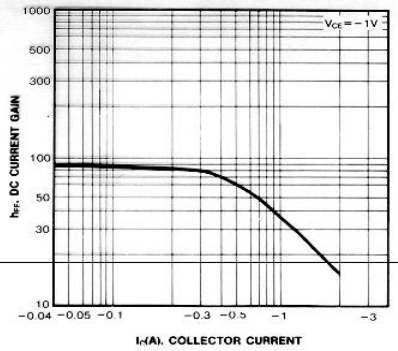
Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : MJE170	V_{CBO}	-60	V
: MJE171		-80	V
: MJE172		-100	V
Collector-Emitter Voltage			
: MJE170	V_{CEO}	-40	V
: MJE171		-60	V
: MJE172		-80	V
Emitter-Base Voltage	I_{EBO}	-7	V
Collector Current (DC)	I_C	-3	A
Collector Current (Pulse)	I_C	-6	A
Base Current (DC)	I_B	-1	A
Collector Dissipation (T_A=25°C)	P_C	1.5	W
Collector Dissipation (T_C=25°C)	P_C	12.5	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_C=25°C)

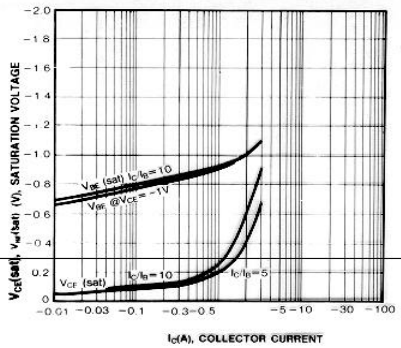
Characteristic	Symbol	Test Conditions	Min	Max	Unit
Collector Emitter Sustaining Voltage					
: MJE170	V_{CEO}(sus)	I_C = 10mA, I_B = 0	-40		V
: MJE171			-60		V
: MJE172			-80		V
Collector Cutoff Current : MJE170	I_{CBO}	V_{CB} = - 60V, I_B = 0		-0.1	μA
: MJE171		V_{CB} = - 80V, I_E = 0		-0.1	μA
: MJE172		V_{CB} = - 100V, I_E = 0		-0.1	μA
: MJE170		V_{CB} = - 60V, I_E = 0, T_C = 150°C		-0.1	mA
: MJE171		V_{CB} = - 80V, I_E = 0, T_C = 150°C		-0.1	mA
: MJE172		V_{CB} = - 100V, I_E = 0, T_C = 150°C		-0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = - 7V, I_C = 0		-0.1	μA
DC Current Gain	h_{FE}	V_{CE} = - 1V, I_C = - 100mA	50	250	
		V_{CE} = - 1V, I_C = - 500mA	30		
		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 = - 1.5A, I_B = - 150mA		-0.9	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		-2.0	V
Base Emitter On Voltage	V_{BE}(on)	V_{CE} = - 1V, I_C = - 500mA		-1.2	V
Current Gain-Bandwidth Product	f_T	V_{CE} = - 10V, I_C = - 100mA, f = 10MHz	50		MHz
Output Capacitance	C_{OB}	V_{CB} = - 10V, I_E = 0, f = 0.1MHz		50	pF

FAIRCHILD SEMICONDUCTOR TM

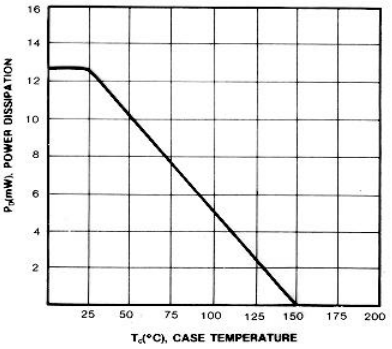
DC CURRENT GAIN



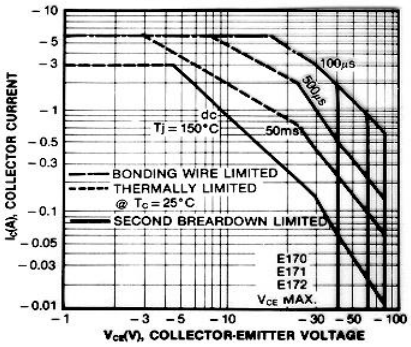
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



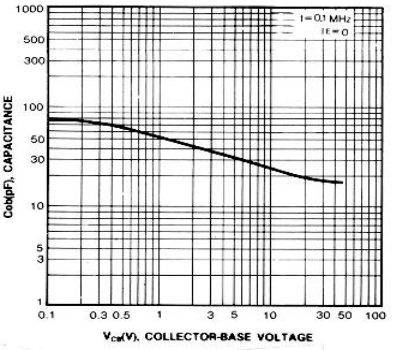
POWER DERATING



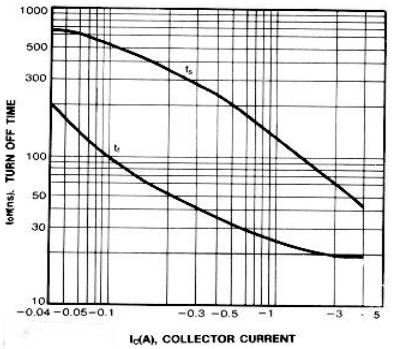
SAFE OPERATING AREA

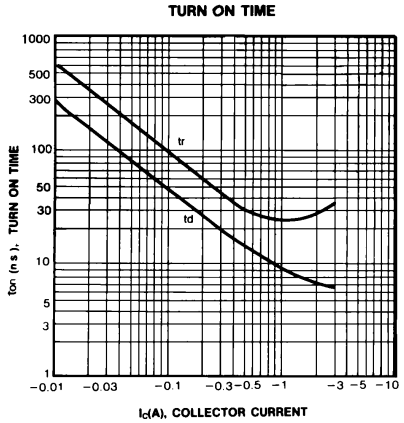


COLLECTOR OUTPUT CAPACITANCE



TURN OFF TIME




TURN ON TIME
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−0.5
−1
−3
−5
−10
IC(A), COLLECTOR CURRENT

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