

2SD2178

Silicon NPN Epitaxial Planar Type

AF Output Amplifier

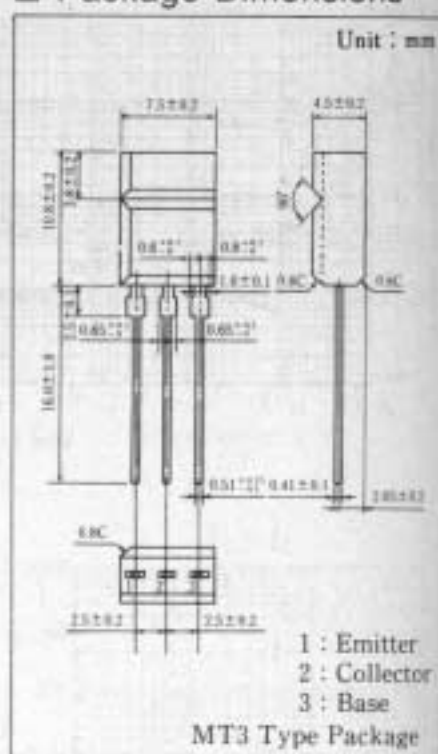
■ Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- High collector current (I_C)

■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	4	A
Collector current	I_C	3	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			0.1	μA
Collector-base voltage	V_{CBO}	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-emitter voltage	V_{CEO}	$I_C=1\text{mA}, I_B=0$	50			V
Emitter-base voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	5			V
DC current gain	h_{FE1}^*	$V_{CE}=2\text{V}, I_C=200\text{mA}$	120		340	
	h_{FE2}	$V_{CE}=2\text{V}, I_C=1.0\text{A}$	80			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=50\text{mA}$		0.15	0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=50\text{mA}$		0.85	1.2	V
Transition frequency	f_T	$V_{CB}=10\text{V}, I_E=-50\text{mA}, f=200\text{MHz}$		110		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		23	35	pF

* h_{FE1} Classifications

Class	R	S
h_{FE1}	120 ~ 240	170 ~ 340