

2SD1742, 2SD1742A

Silicon PNP Triple-Diffused Planar Type

AF Power Amplifier

Complementary Pair with 2SB1172, 2SB1172A

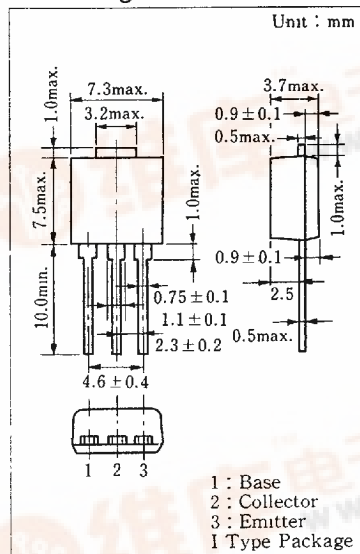
■ Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- "I Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

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

Item	Symbol	Value	Unit
Collector-base voltage	2SD1742	60	V
	2SD1742A	80	
Collector-emitter voltage	2SD1742	60	V
	2SD1742A	80	
Emitter-base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	5	A
Collector current	I_C	3	A
Collector power dissipation	$T_c=25^\circ\text{C}$	15	W
	$T_a=25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

■ Package Dimensions



*Surface-mount type is also available.
(Refer to p.81.)

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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SD1742	$V_{CE} = 60\text{ V}, V_{BE} = 0$			200	μA
	2SD1742A	$V_{CE} = 80\text{ V}, V_{BE} = 0$			200	
Collector cutoff current	2SD1742	$V_{CE} = 30\text{ V}, I_B = 0$			300	μA
	2SD1742A	$V_{CE} = 60\text{ V}, I_B = 0$			300	
Emitter cutoff current	I_{FBO}	$V_{EB} = 6\text{ V}, I_C = 0$			1	mA
Collector-emitter voltage	2SD1742	$I_C = 30\text{ mA}, I_B = 0$	60			V
	2SD1742A	$I_C = 30\text{ mA}, I_B = 0$	80			
DC current gain	h_{FE1}^*	$V_{CE} = 4\text{ V}, I_C = 1\text{ A}$	40		320	
	h_{FE2}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	10			
Base-emitter voltage	V_{BE}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$			1.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.375\text{ A}$			1.2	V
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 10\text{ MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = 1\text{ A}, I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}$ $V_{CC} = 50\text{ V}$		0.5		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			0.4		μs

* h_{FE1} Classifications

Class	R	Q	P	O
h_{FE1}	40 ~ 90	70 ~ 150	120 ~ 250	160 ~ 320

