

2SC1398, 2SC1398A

Silicon NPN Epitaxial Planar Type

Medium Power Amplifier
Complementary Pair with 2SA748

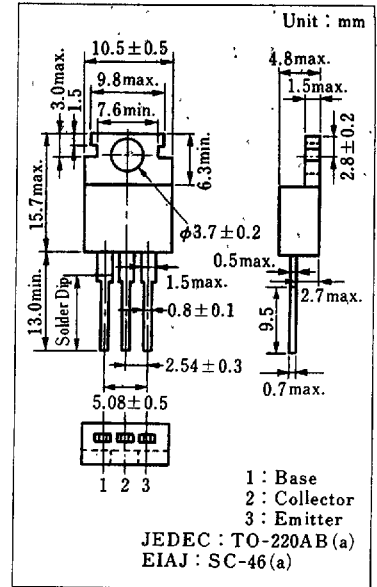
■ Feature

- Large collector power dissipation (P_C)
- 10W output in complementary pair with 2SA748

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

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	70	V
Collector-emitter voltage	2SC1398	50	V
	2SC1398A	70	
Emitter-base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	3	A
Collector current	I_C	2	A
Collector power dissipation ($T_c=25^\circ\text{C}$)	P_C	15	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



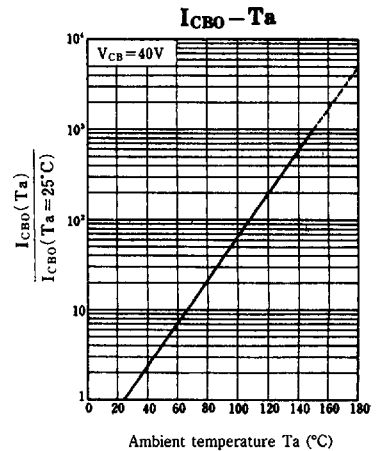
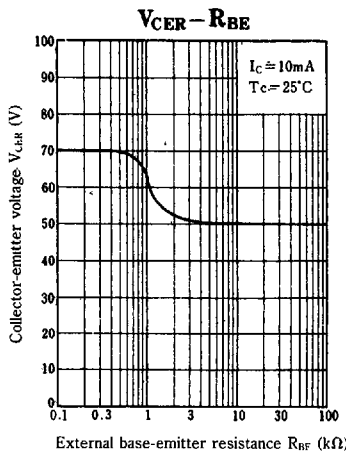
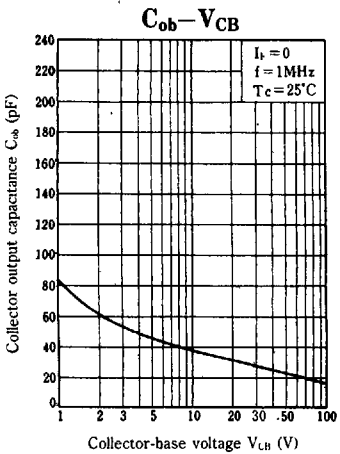
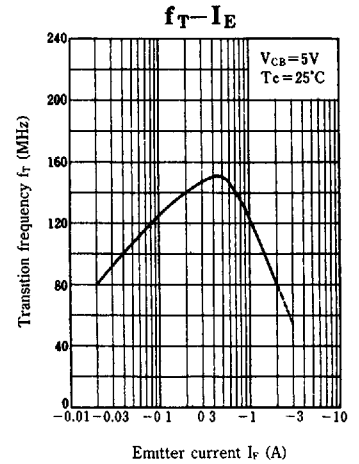
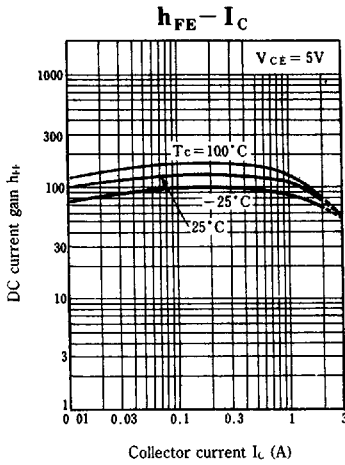
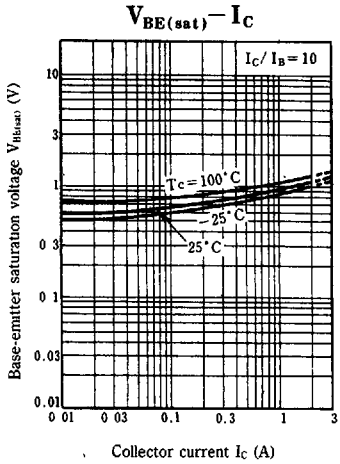
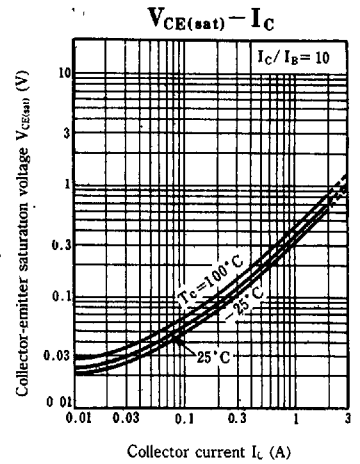
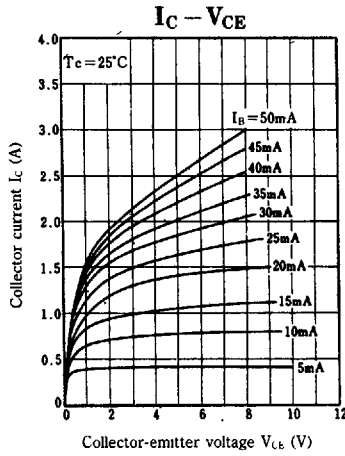
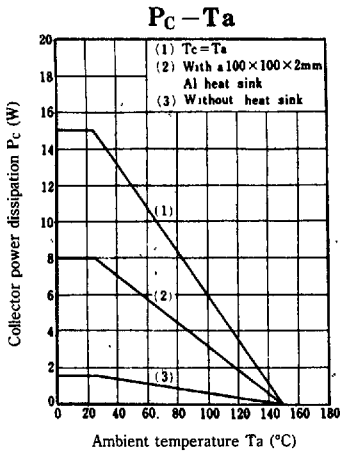
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=40\text{ V}, I_E=0$			1	μA
	I_{CEO}	$V_{CE}=20\text{ V}, I_B=0$			100	
Emitter cutoff current	I_{EBO}	$V_{EB}=5\text{ V}, I_C=0$			100	μA
Collector-base voltage	V_{CBO}	$I_C=1\text{ mA}, I_E=0$	70			V
Collector-emitter voltage	V_{CEO}	$I_C=10\text{ mA}, I_B=0$	2SC1398	50		V
			2SC1398A	70		
DC current gain	h_{FE1}	$V_{CE}=5\text{ V}, I_C=100\text{ mA}$	30			
	h_{FE2}^*	$V_{CE}=5\text{ V}, I_C=1\text{ A}$	2SC1398	50	220	
			2SC1398A	50	160	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1\text{ A}, I_B=100\text{ mA}$		0.6	1.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2\text{ A}, I_B=200\text{ mA}$		1.0	1.5	V
Transition frequency	f_T	$V_{CE}=5\text{ V}, I_C=500\text{ mA}, f=200\text{ MHz}$		120		MHz

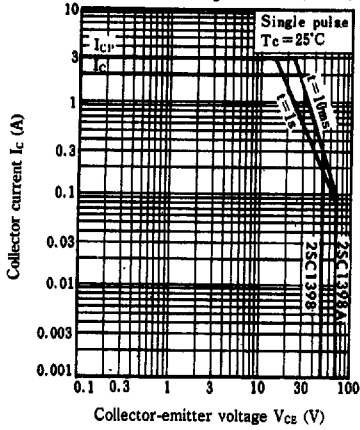
* h_{FE2} Classifications

Type No.	Class	P	Q	R
2SC1398	h_{FE2}	50 ~ 100	80 ~ 160	120 ~ 220
2SC1398A	h_{FE2}	50 ~ 100	80 ~ 160	—

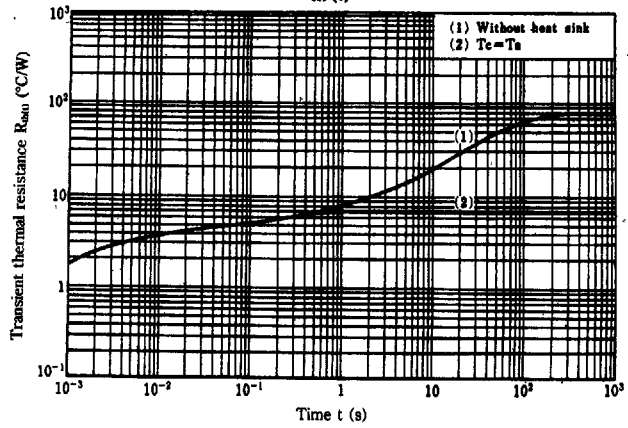
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Area of safe operation (ASO)



$R_{th}(t) - t$



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