2SA743, 2SA743A

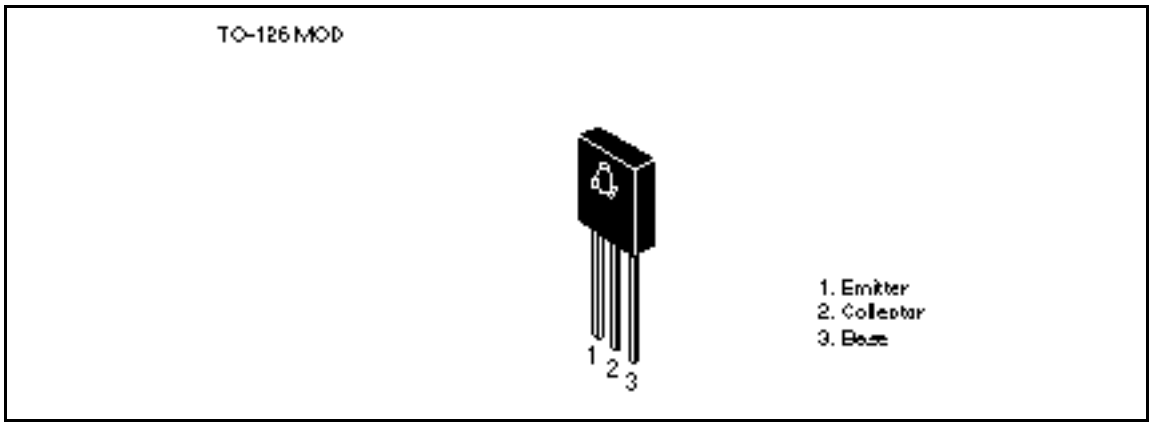
Silicon PNP Epitaxial

HITACHI

Application

Low frequency power amplifier complementary pair with 2SC1212 and 2SC1212A

Outline



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings		Unit
		2SA743	2SA743A	
Collector to base voltage	V_{CBO}	–50	–80	V
Collector to emitter voltage	V_{CEO}	–50	–80	V
Emitter to base voltage	V_{EBO}	–4	–4	V
Collector current	I_C	–1	–1	A
Collector power dissipation	P_C	0.75	0.75	W
	P_C*[1]	8	8	
Junction temperature	Tj	150	150	°C
Storage temperature	Tstg	–55 to +150	–55 to +150	°C

Note: 1. Value at T_C = 25°C.

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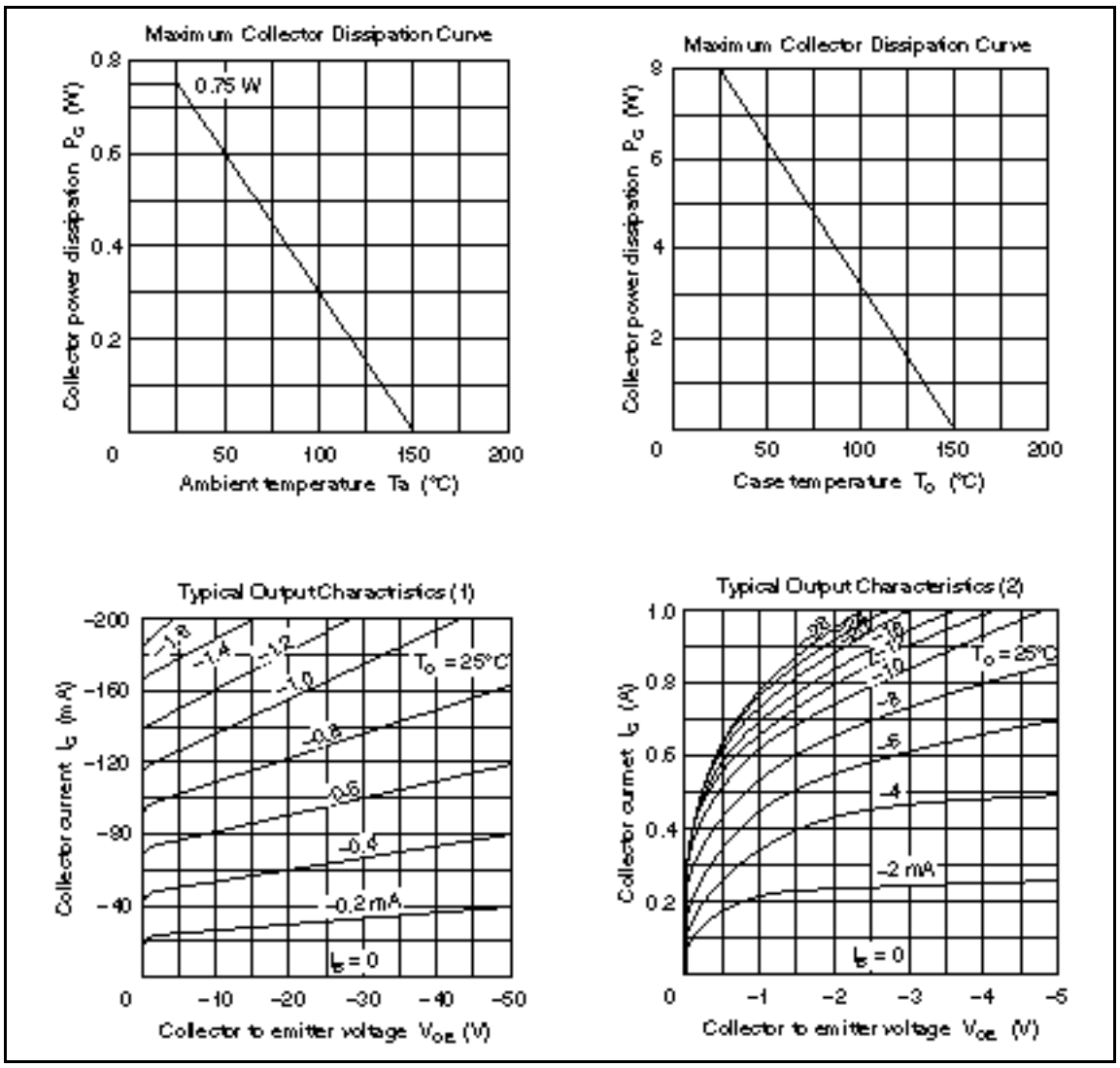
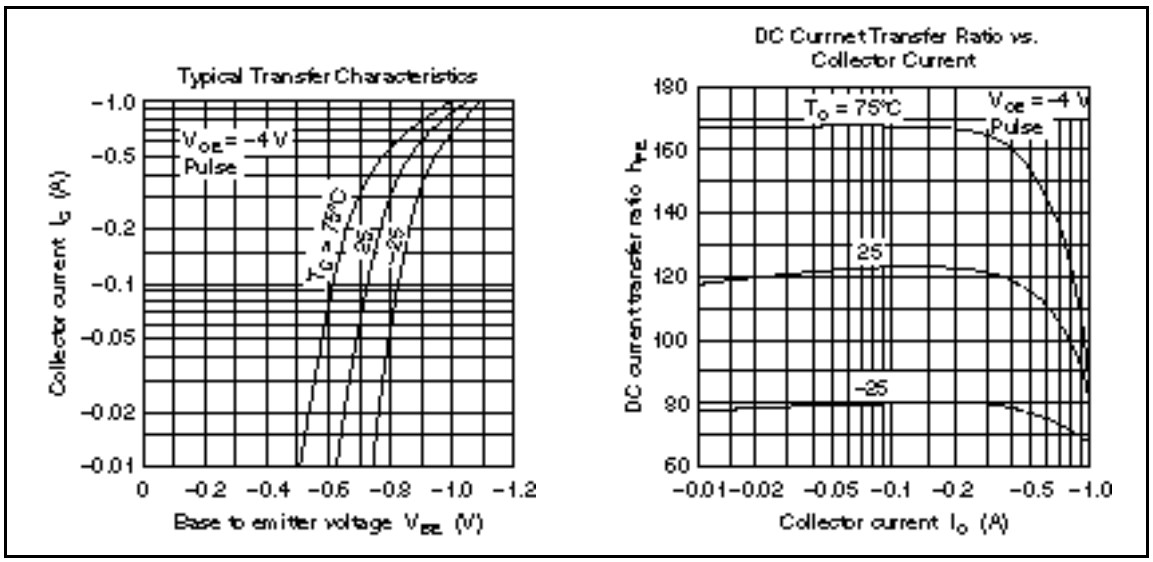
Electrical Characteristics (Ta = 25°C)

Item	Symbol	2SA743 Min	2SA743 Typ	2SA743 Max	2SA743A Min	2SA743A Typ	2SA743A Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	–50	—	—	–80	—	—	V	I_C = –1 mA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–50	—	—	–80	—	—	V	I_C = –10 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–4	—	—	–4	—	—	V	I_E = –1 mA, I_C = 0
Collector cutoff current	I_{CER}	—	—	–20	—	—	—	µA	V_{CE} = –50 V, R_{BE} = 1 kΩ
	I_{CER}	—	—	—	—	—	–20		V_{CE} = –80 V, R_{BE} = 1 kΩ
DC current tarnsfer ratio	h_{FE}*[1]	60	120	200	60	120	200		V_{CE} = –4 V, I_C = –50 mA
	h_{FE}	20	—	—	20	—	—		V_{CE} = –4 V, I_C = –1 A (pulse)
Base to emitter voltage	V_{BE}	—	–0.65	–1.0	—	–0.65	1.0	V	V_{CE} = –4 V, I_C = –50 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	–0.75	–1.5	—	–0.75	–1.5	V	I_C = –1 A, I_B = –0.1 A
Gain bandwidth product	f_T	—	120	—	—	120	—	MHz	V_{CE} = –4 V, I_C = –30 mA

Note: 1. The 2SA743 and 2SA743A is grouped by h_{FE} as follows.

B	C
60 to 120	100 to 200


Maximum Collector Dissipation Curve
Collector power dissipation P_C (W)
0.75 W
Ambient temperature Ta (°C)
Maximum Collector Dissipation Curve
Collector power dissipation P_C (W)
Case temperature T_C (°C)
Typical Output Characteristics (1)
Collector current I_C (mA)
T_C = 25°C
−0.2 mA
I_B = 0
Collector to emitter voltage V_{CE} (V)
Typical Output Characteristics (2)
Collector current I_C (A)
T_C = 25°C
−2 mA
I_B = 0
Collector to emitter voltage V_{CE} (V)


Typical Transfer Characteristics
Collector current I_C (A)
−1.0
−0.5
−0.2
−0.1
−0.05
−0.02
−0.01
V_{CE} = −4 V
Pulse
T_C = 75°C
25
−25
0
−0.2
−0.4
−0.6
−0.8
−1.0
−1.2
Base to emitter voltage V_{BE} (V)
DC Current Transfer Ratio vs.
Collector Current
DC current transfer ratio h_{FE}
180
160
140
120
100
80
60
T_C = 75°C
V_{CE} = −4 V
Pulse
25
−25
−0.01
−0.02
−0.05
−0.1
−0.2
−0.5
−1.0
Collector current I_C (A)

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