2SA0963 (2SA963)

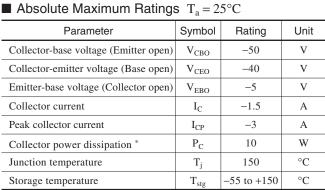
Silicon PNP epitaxial planar type

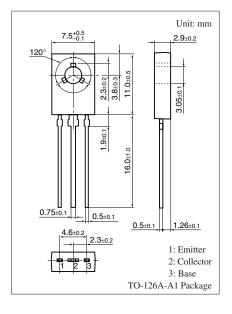
For low-frequency power amplification Complementary to 2SC2209

■ Features

- Large collector power dissipation P_C
- Output of 4 W to 5 W can be obtained by a complementary pair with

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CBO}	-50	V
Collector-emitter voltage (Base open)	V _{CEO}	-40	V
Emitter-base voltage (Collector open)	V_{EBO}	-5	V
Collector current	I_C	-1.5	A
Peak collector current	I_{CP}	-3	A
Collector power dissipation *	P _C	10	W
Junction temperature	T_{j}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C





Note) *: $T_C = 25^{\circ}C$

■ Electrical Characteristics $T_a = 25$ °C ± 3 °C

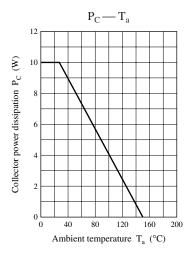
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_C = -1 \text{ mA}, I_E = 0$	-50			V
Collector-emitter voltage (Base open)	V _{CEO}	$I_C = -2 \text{ mA}, I_B = 0$	-40			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -20 \text{ V}, I_E = 0$			-1	μΑ
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = -10 \text{ V}, I_B = 0$			-100	μΑ
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -5 \text{ V}, I_{C} = 0$			-10	μΑ
Forward current transfer ratio *	h _{FE}	$V_{CE} = -5 \text{ V}, I_{C} = -1 \text{ A}$	80		220	_
Collector-emitter saturation voltage	V _{CE(sat)}	$I_C = -1.5 \text{ A}, I_B = -0.15 \text{ A}$			-1.0	V
Base-emitter saturation voltage	V _{BE(sat)}	$I_C = -2 A, I_B = -0.2 A$			-1.5	V
Transition frequency	f_T	$V_{CB} = -5 \text{ V}, I_E = 0.5 \text{ A}, f = 200 \text{ MHz}$		150		MHz
Collector output capacitance	C _{ob}	$V_{CB} = -5 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		70		pF
(Common base, input open circuited)						

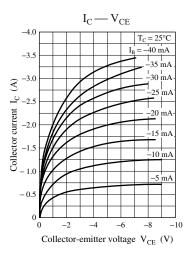
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

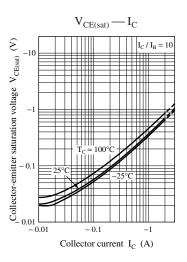
2. *: Rank classification

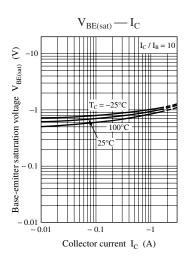
Rank	Q	R
h_{FE}	80 to 160	120 to 220

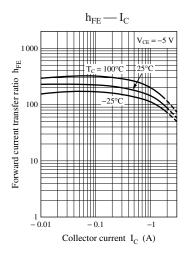
Note) The part number in the parenthesis shows conventional part number.

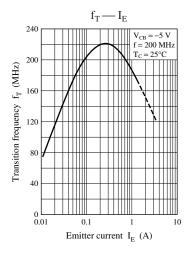


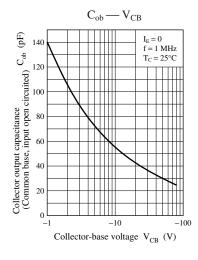


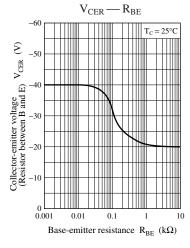


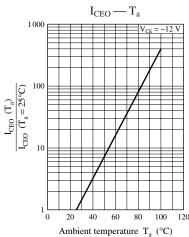


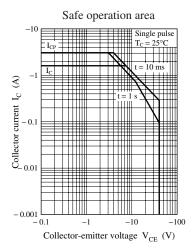












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