Ordering number:EN4644

PNP Epitaxial Planar Silicon Transistor

2SA1857

FM, RF, MIX, IF Amplifier High-Frequency General-Purpose Amplifier Applications

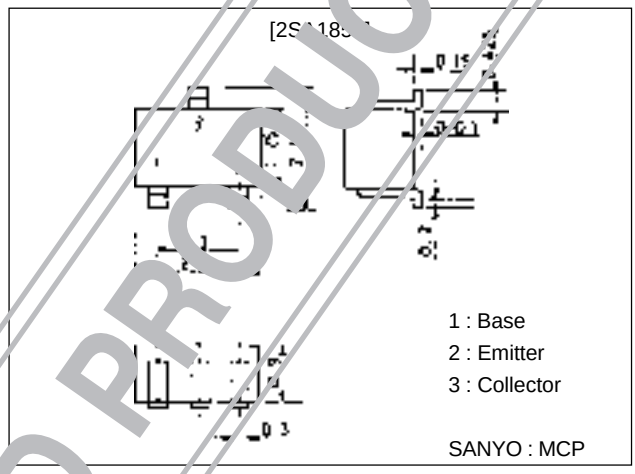
Features

- High power gain : PG=25dB typ (f=100MHz).
- High cutoff frequency : f_T=750MHz typ.
- Low collector-to-emitter saturation voltage.
- Complementary pair with the 2SC4400.

Package Dimensions

unit:mm

2059A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–15	V
Collector-to-Emitter Voltage	V_{CEO}		–12	V
Emitter-to-Base Voltage	V_{EBO}		–3	V
Collector Current	I_C		–50	mA
Collector Dissipation	P_C		150	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–12V, I_E=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–2V, I_C=0			–0.1	μA
DC Current Gain	h_{FE}	V_{CE}=–10V, I_C=–5mA	60*		270*	
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–5mA		750		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		1.2	1.6	pF
Reverse Transfer Capacitance	Cre	V_{CB}=–10V, f=1MHz		0.9		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=–10mA, I_B=–1mA		–0.1	–0.3	V
Power Gain	PG	V_{CE}=–10V, I_C=–10mA, f=100MHz		25		dB

* : The 2SA1857 is classified by 5mA h_{FE} as follows :

60	3	90	4	180	135 5 270

Marking : JS

h_{FE} rank : 3, 4, 5

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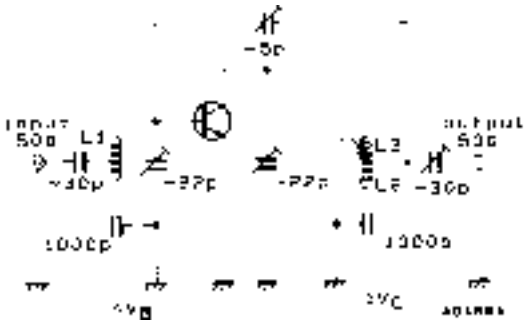
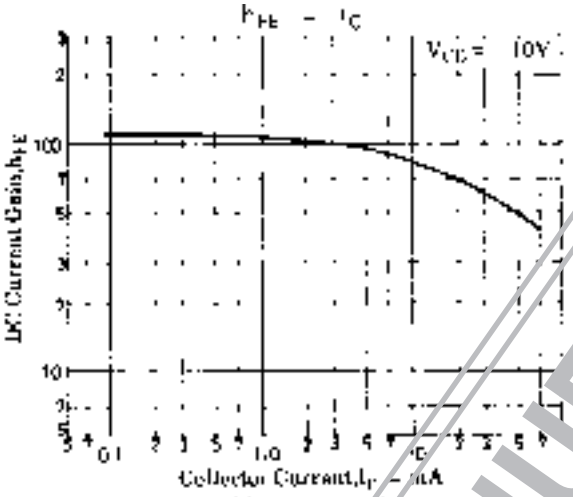
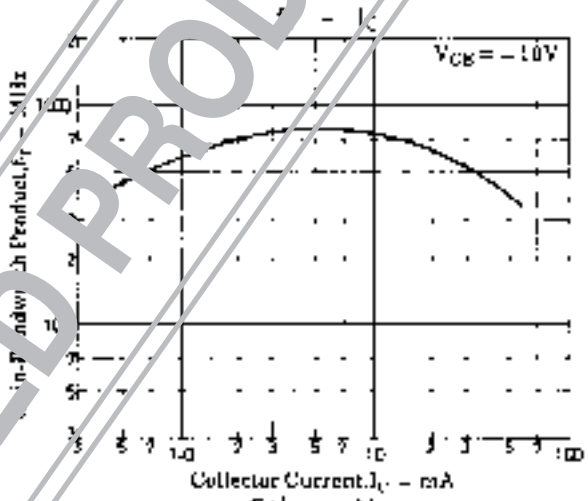
PG Test Circuit

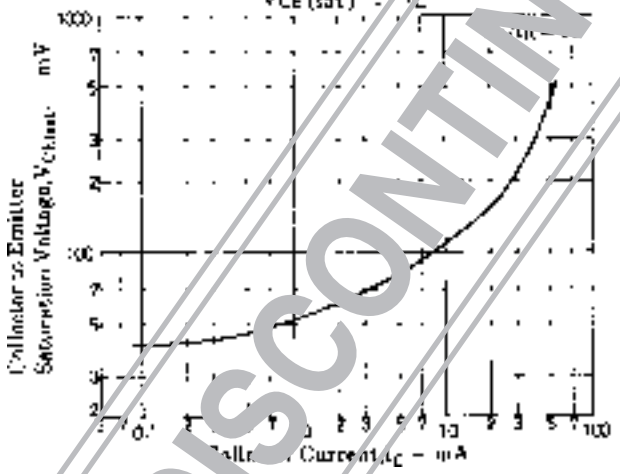


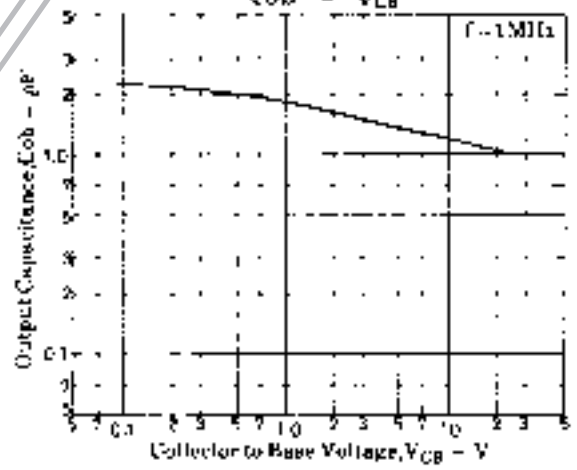
Unit (capacitance : F)

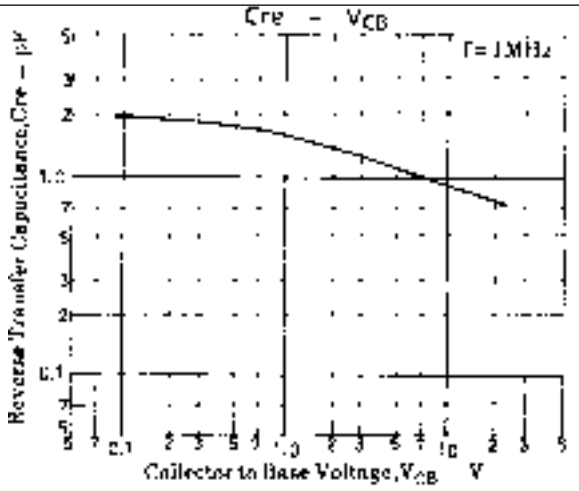
L1 : 1mmø plated wire 10mmø 5T, pitch 15mm, tap : 2T from base side
L2 : 1mmø plated wire 10mmø 7T, pitch 10mm, tap : 2T from V_C side
L3 : 1mmø plated wire 10mmø 3T, pitch 10mm

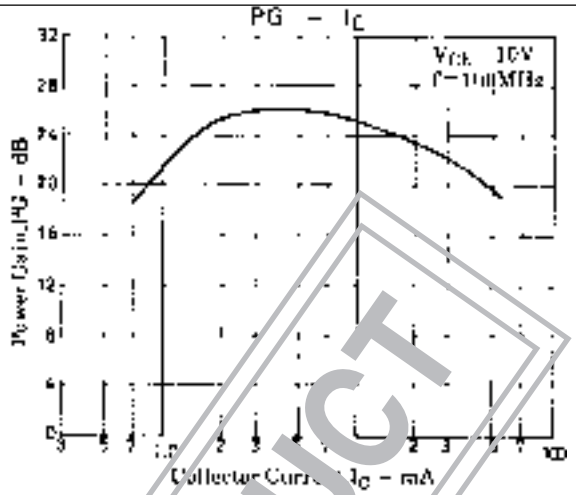


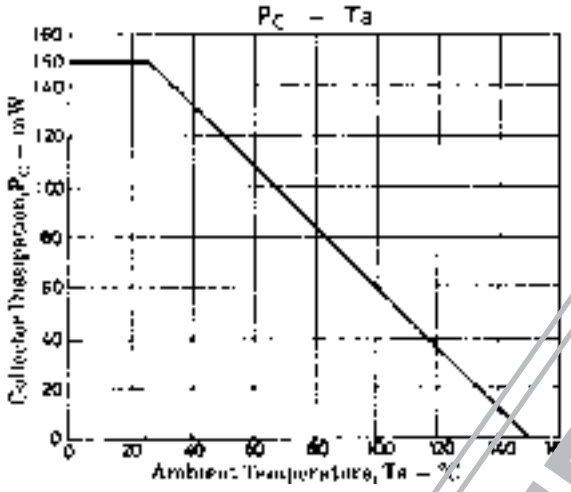












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