

Medium Power Transistor (-32V, -0.5A)

2SA854S

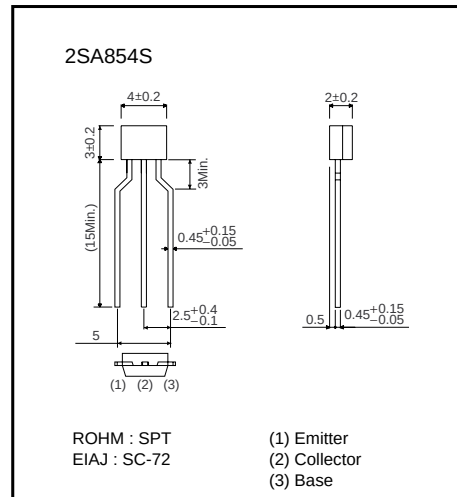
●Features

- 1) Large I_C .
 $I_{C\text{MAX}} = -500\text{mA}$
- 2) Low $V_{CE(\text{sat})}$. Idea for low-voltage operation.
- 3) Complements the 2SC1741S.

●Structure

Epitaxial planar type
PNP silicon transistor

●External dimensions (Unit : mm)



* Denotes h_{FE}

●Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	-40	V
Collector-emitter voltage	V_{CE0}	-32	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current	I_C	-0.5	A *
Collector power dissipation	P_C	0.3	W
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $P_{C\text{MAX}}$ must not be exceeded.

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-40	-	-	V	$I_C = -100\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-32	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-5	-	-	V	$I_E = -100\mu A$
Collector cutoff current	I_{CBO}	-	-	-1	μA	$V_{CB} = -20V$
Emitter cutoff current	I_{EBO}	-	-	-1	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.6	V	$I_C/I_E = -500mA/-50mA$
DC current transfer ratio	h_{FE}	120	-	390	-	$V_{CE} = -3V, I_C = -100mA$
Transition frequency	f_T	-	200	-	MHz	$V_{CE} = -5V, I_E = 20mA, f = 100MHz$
Output capacitance	C_{ob}	-	8	-	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping
		Code	T146
		Basic ordering unit (pieces)	3000
2SA854S	QR		-

h_{FE} values are classified as follows :

Item	Q	R
h_{FE}	120~270	180~390

●Electrical characteristic curves

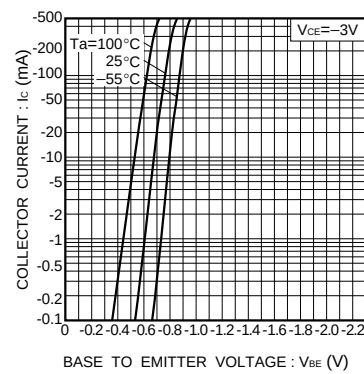


Fig.1 Grounded emitter propagation

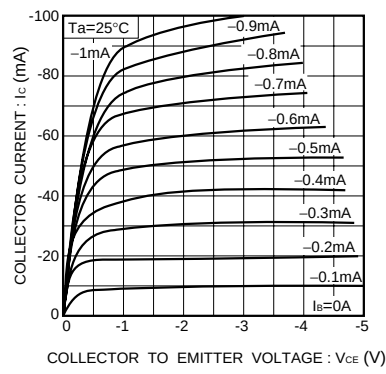


Fig.2 Grounded emitter output characteristics (I)

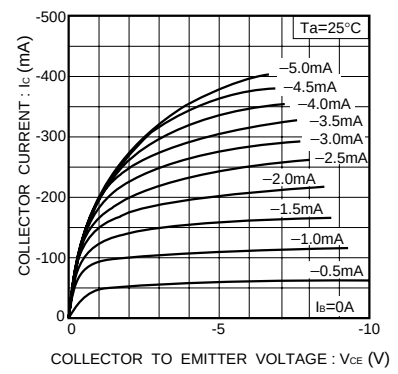


Fig.3 Grounded emitter output characteristics (II)

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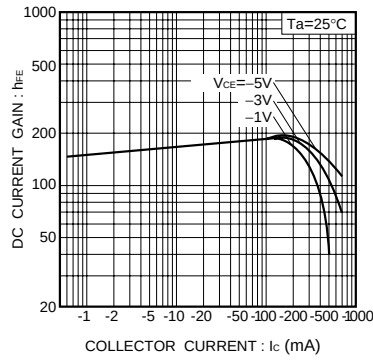


Fig.4 DC current gain vs. collector current (I)

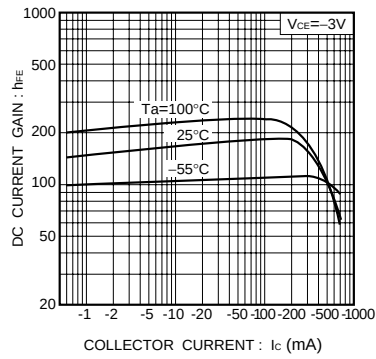


Fig.5 DC current gain vs. collector current (II)

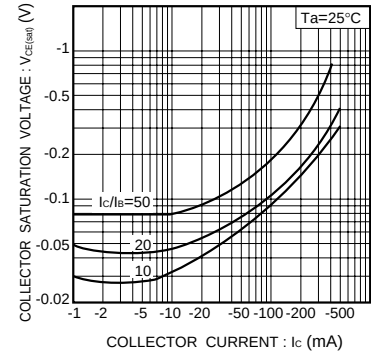


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

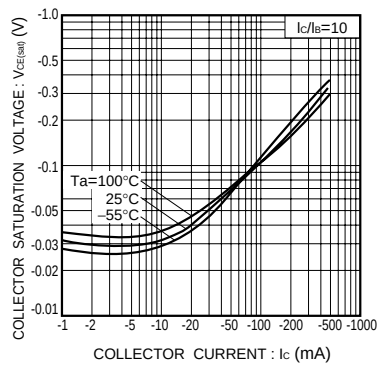


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

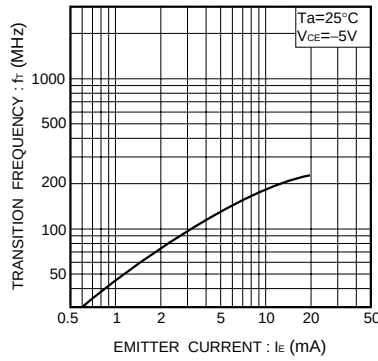


Fig.8 Gain bandwidth product vs. emitter current

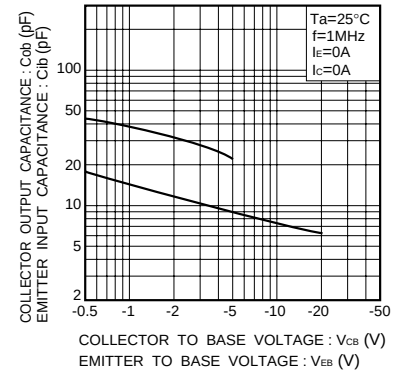


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

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