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

2SA854S

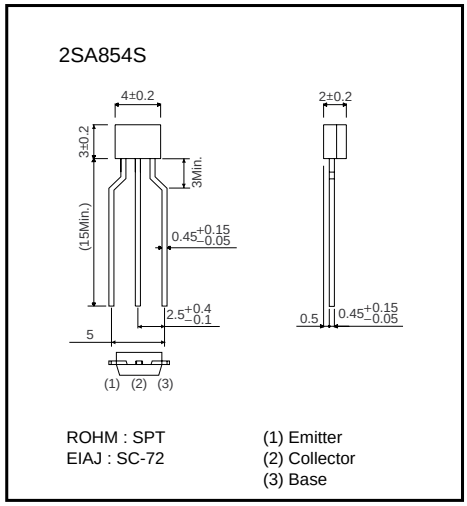
●**Features**

1) Large I_C.
   $I_{CMAX.}$ = -500mA
2) Low $V_{CE(sat)}$. 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** (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	–40	V	
Collector-emitter voltage	V_{CEO}	–32	V	
Emitter-base voltage	V_{EBO}	–5	V	
Collector current	I_C	–0.5	A	∗
Collector power dissipation	P_C	0.3	W	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	–55 to +150	°C	

∗ $P_{C\ MAX.}$ must not be exceeded.

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	–40	–	–	V	I_C=–100μA
Collector-emitter breakdown voltage	BV_{CEO}	–32	–	–	V	I_C=–1mA
Emitter-base breakdown voltage	BV_{EBO}	–5	–	–	V	I_E=–100μA
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_B=–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	Cob	–	8	–	pF	V_{CB}=–10V, I_E=0A, f=1MHz

●**Packaging specifications and h_{FE}**

		Package	Taping
		Code	T146
Type	h_{FE}	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**

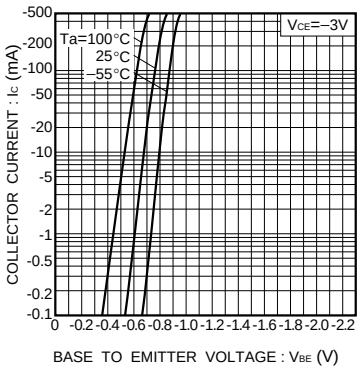


Fig.1 Grounded emitter propagation

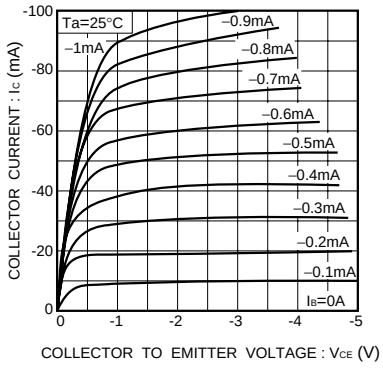


Fig.2 Grounded emitter output characteristics (I)

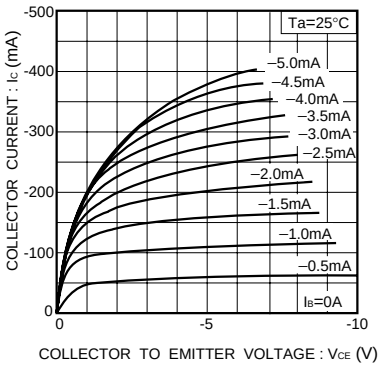


Fig.3 Grounded emitter output characteristics (II)

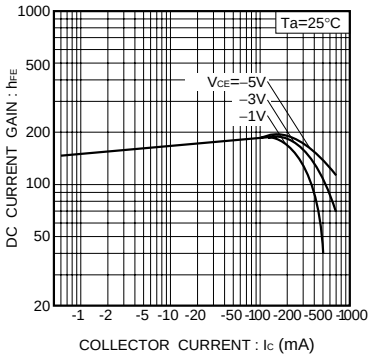


Fig.4 DC current gain vs. collector current (I)

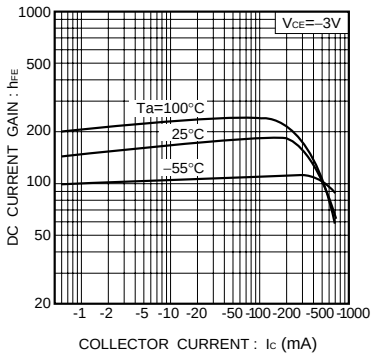


Fig.5 DC current gain vs. collector current (II)

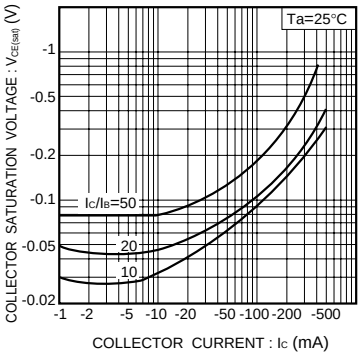


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

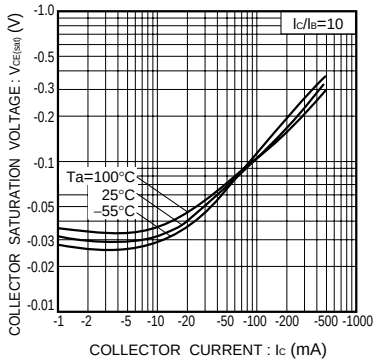


Fig.7 Collector-emitter saturation voltage vs. collector current ($_{II}$)

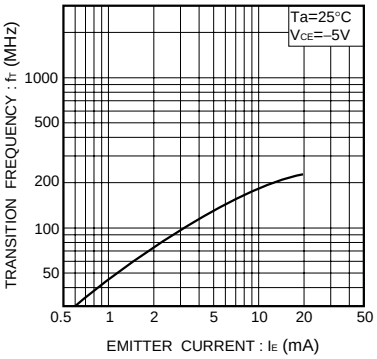


Fig.8 Gain bandwidth product vs. emitter current

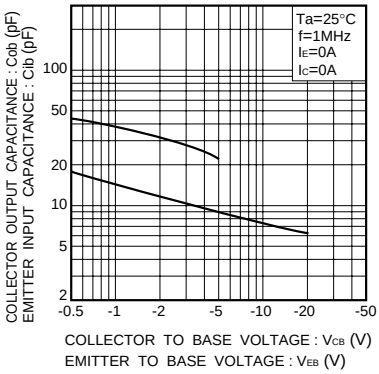


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

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