



**THE DATASHEET OF  
2SA854STPR**



# Medium Power Transistor

## (-32V, -0.5A)

### 2SA854S

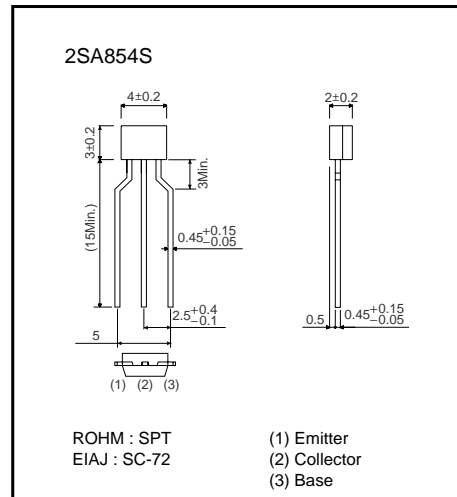
#### ●Features

- 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 ( $T_a=25^\circ C$ )

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	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

\*  $P_{cMAX}$ . must not be exceeded.

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	-40	-	-	V	I <sub>c</sub> =-100μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	-32	-	-	V	I <sub>c</sub> =-1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	-5	-	-	V	I <sub>E</sub> =-100μA
Collector cutoff current	I <sub>CB0</sub>	-	-	-1	μA	V <sub>CB</sub> =-20V
Emitter cutoff current	I <sub>EB0</sub>	-	-	-1	μA	V <sub>EB</sub> =-4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	-0.6	V	I <sub>c</sub> /I <sub>B</sub> =-500mA/-50mA
DC current transfer ratio	h <sub>FE</sub>	120	-	390	-	V <sub>CE</sub> =-3V, I <sub>c</sub> =-100mA
Transition frequency	f <sub>T</sub>	-	200	-	MHz	V <sub>CE</sub> =-5V, I <sub>E</sub> =20mA, f=100MHz
Output capacitance	C <sub>ob</sub>	-	8	-	pF	V <sub>CB</sub> =-10V, I <sub>E</sub> =0A, f=1MHz

●Packaging specifications and h<sub>FE</sub>

Type	h <sub>FE</sub>	Package	Taping
		Code	T146
		Basic ordering unit (pieces)	3000
2SA854S	QR		-

h<sub>FE</sub> values are classified as follows :

Item	Q	R
h <sub>FE</sub>	120~270	180~390

●Electrical characteristic curves

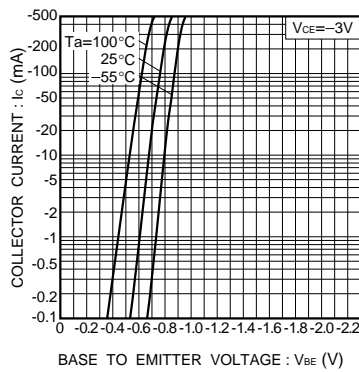


Fig.1 Grounded emitter propagation

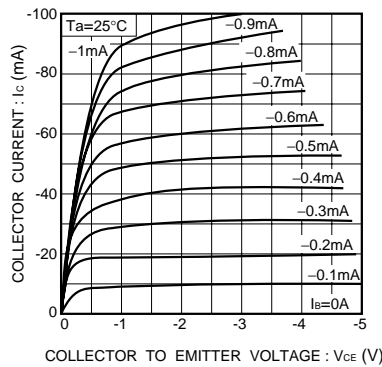


Fig.2 Grounded emitter output characteristics (I)

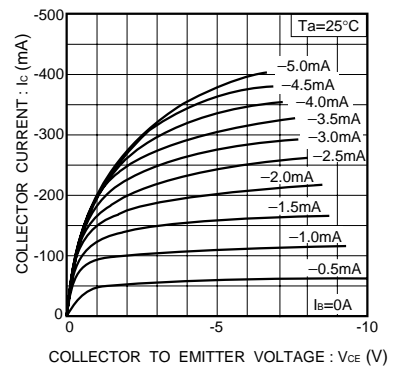


Fig.3 Grounded emitter output characteristics (II)

Transistors

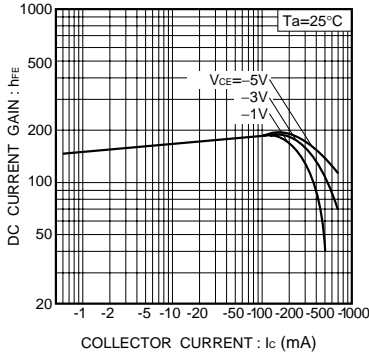


Fig.4 DC current gain vs. collector current (I)

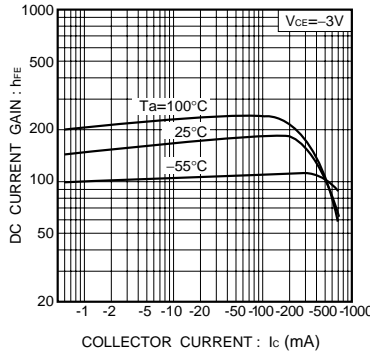


Fig.5 DC current gain vs. collector current (II)

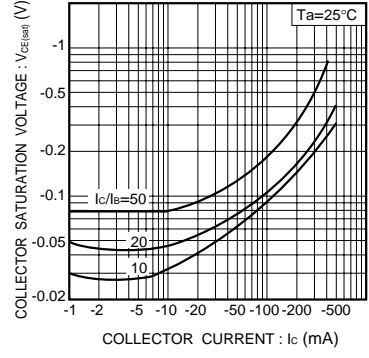


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

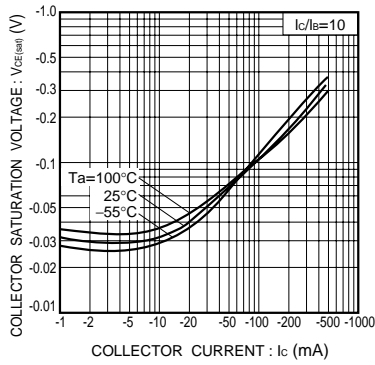


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

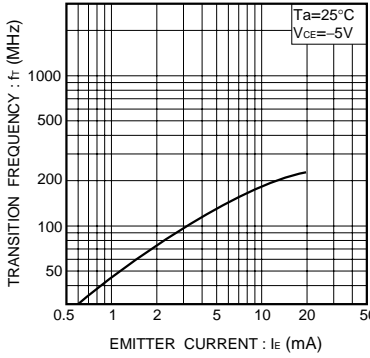


Fig.8 Gain bandwidth product vs. emitter current

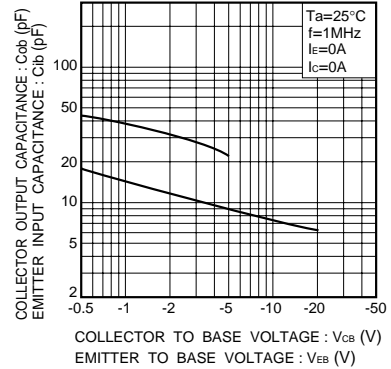


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

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