

# Medium Power Transistor

## (-32V, -0.5A)

### 2SA1036K / 2SA1577 / 2SA854S

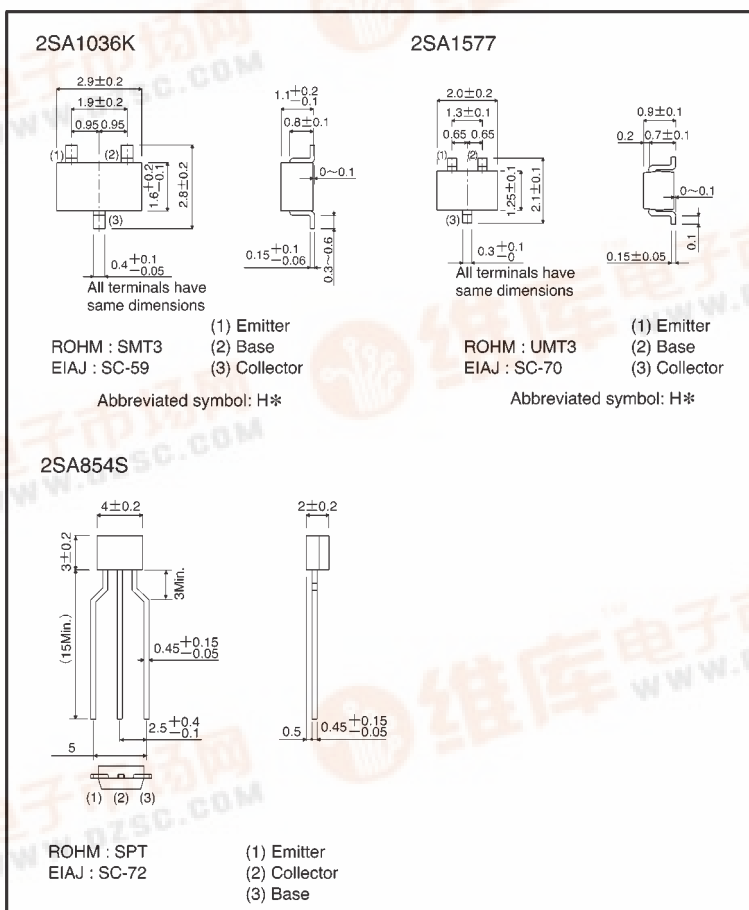
#### ●Features

- 1) Large  $I_c$ .  
 $I_{cMax.} = -500mA$
- 2) Low  $V_{CE(sat)}$ . Ideal for low-voltage operation.
- 3) Complements the 2SC2411K / 2SC1741S / 2SC4097.

#### ●Structure

Epitaxial planar type  
PNP silicon transistor

#### ●External dimensions (Units: mm)



\* Denotes hFE

## Transistors

## 2SA1036K / 2SA1577 / 2SA854S

### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	−40	V
Collector-emitter voltage	V <sub>CE0</sub>	−32	V
Emitter-base voltage	V <sub>EBO</sub>	−5	V
Collector current	I <sub>c</sub>	−0.5	A *
Collector power dissipation	P <sub>c</sub>	0.2	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	−55~+150	°C

\* P<sub>C</sub> MAX. must not be exceeded.

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV <sub>CBO</sub>	−40	—	—	V	I <sub>c</sub> = −100 μA
Collector-emitter breakdown voltage		BV <sub>CE0</sub>	−32	—	—	V	I <sub>c</sub> = −1mA
Emitter-base breakdown voltage		BV <sub>EBO</sub>	−5	—	—	V	I <sub>E</sub> = −100 μA
Collector cutoff current		I <sub>CBO</sub>	—	—	−1	μA	V <sub>CB</sub> = −20V
Emitter cutoff current		I <sub>EBO</sub>	—	—	−1	μA	V <sub>EB</sub> = −4V
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	—	—	−0.4	V	I <sub>c</sub> /I <sub>E</sub> = −100mA/−10mA
DC current transfer ratio	2SA1036K, 2SA1577	h <sub>FE</sub>	82	—	390	—	V <sub>CE</sub> = −3V, I <sub>c</sub> = −10mA
	2SA854S		120	—	390	—	I <sub>c</sub> /I <sub>E</sub> = −500mA/−50mA
Transition frequency		f <sub>r</sub>	—	200	—	MHz	V <sub>CE</sub> = −5V, I <sub>E</sub> = 20mA, f = 100MHz
Output capacitance	2SA1036K, 2SA1577	C <sub>ob</sub>	—	7	—	pF	V <sub>CB</sub> = −10V, I <sub>E</sub> = 0A, f = 1MHz
	2SA854S		—	8	—	pF	

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

Type	h <sub>FE</sub>	Package	Taping		
		Code	T146	T106	TP
		Basic ordering unit (pieces)	3000	3000	5000
2SA1036K	PQR		○	—	—
2SA1577	PQR		—	○	—
2SA854S	QR		—	—	○

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

Item	P	Q	R
h <sub>FE</sub>	82~180	120~270	180~390

● Electrical characteristic curves

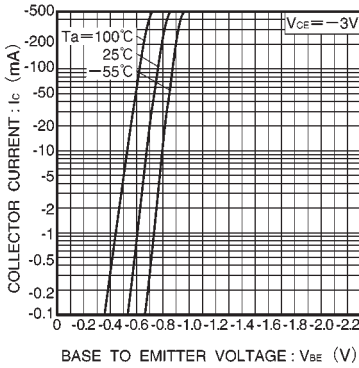


Fig.1 Grounded emitter propagation

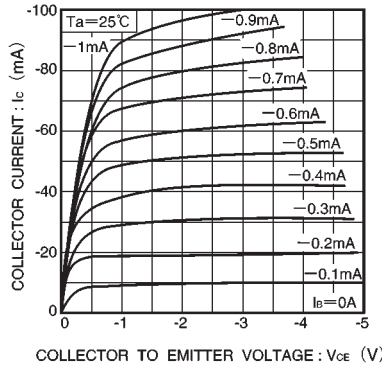


Fig.2 Grounded emitter output characteristics ( I )

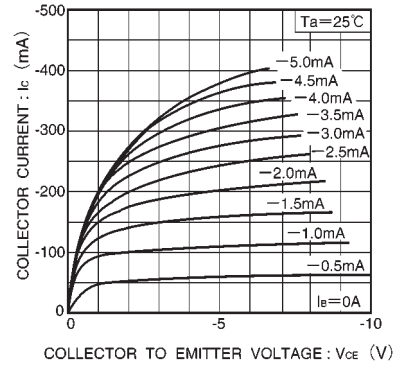


Fig.3 Grounded emitter output characteristics ( II )

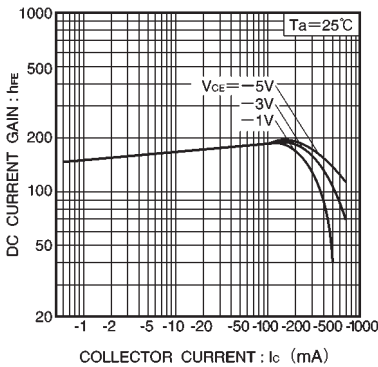


Fig.4 DC current gain vs. collector current ( I )

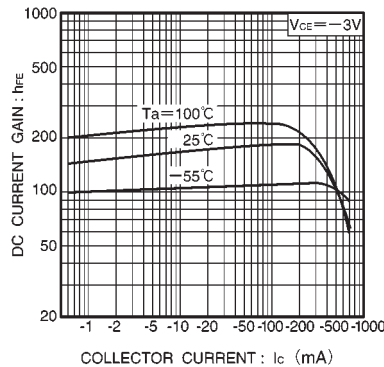


Fig.5 DC current gain vs. collector current ( II )

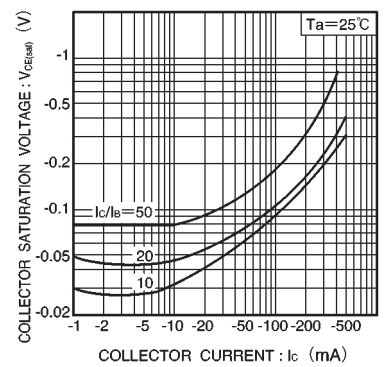


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

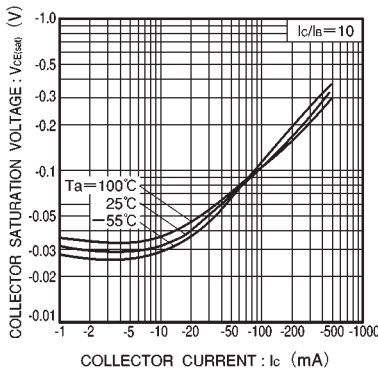


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

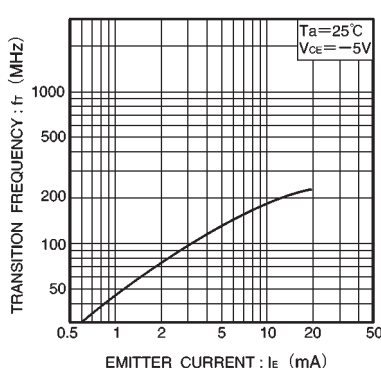


Fig.8 Gain bandwidth product vs. emitter current

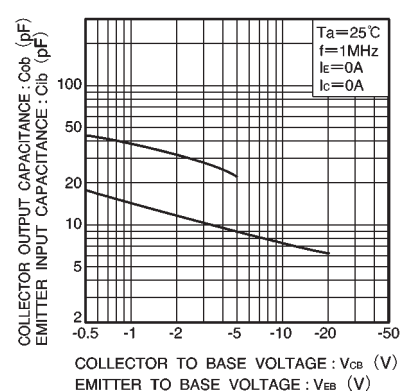


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage