Medium Power Transistor (−32V, −0.5A)

2SA1036K / 2SA1577 / 2SA854S

●Features

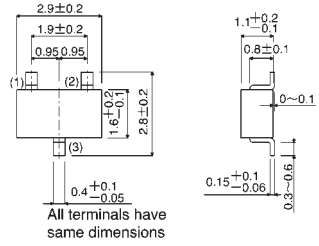
1) Large I_C.
   $I_{CMax.}$ = −500mA
2) Low $V_{CE(sat)}$. Ideal for low-voltage operation.
3) Complements the 2SC2411K / 2SC1741S / 2SC4097.

●Structure

Epitaxial planar type
PNP silicon transistor

●External dimensions (Units: mm)

2SA1036K

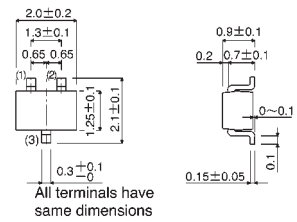


ROHM : SMT3
EIAJ : SC-59

(1) Emitter
(2) Base
(3) Collector

Abbreviated symbol: H✻

2SA1577

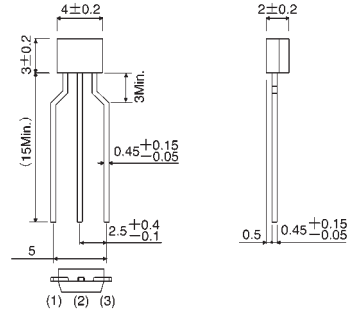


ROHM : UMT3
EIAJ : SC-70

(1) Emitter
(2) Base
(3) Collector

Abbreviated symbol: H✻

2SA854S



ROHM : SPT
EIAJ : SC-72

(1) Emitter
(2) Collector
(3) Base

✻ Denotes h_{FE}

(96-86-B11)

●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	0.2	W	
Junction temperature	Tj	150	℃	
Storage temperature	Tstg	−55～+150	℃	

* $P_{C\ MAX.}$ 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=−100 μA
Collector-emitter breakdown voltage		BV_{CEO}	−32	—	—	V	I_C=−1mA
Emitter-base breakdown voltage		BV_{EBO}	−5	—	—	V	I_E=−100 μA
Collector cutoff current		I_{CBO}	—	—	−1	μA	V_{CB}=−20V
Emitter cutoff current		I_{EBO}	—	—	−1	μA	V_{EB}=−4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	−0.4	V	I_C/I_B=−100mA/−10mA
DC current transfer ratio	2SA1036K, 2SA1577	h_{FE}	82	—	390	—	V_{CE}=−3V, I_C=−10mA
	2SA854S		120	—	390	—	I_C/I_B=−500mA/−50mA
Transition frequency		f_T	—	200	—	MHz	V_{CE}=−5V, I_E=20mA, f=100MHz
Output capacitance	2SA1036K, 2SA1577	Cob	—	7	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz
	2SA854S		—	8	—	pF	

●Packaging specifications and h_{FE}

		Package	Taping		
		Code	T146	T106	TP
Type	h_{FE}	Basic ordering unit (pieces)	3000	3000	5000
2SA1036K	PQR		○	—	—
2SA1577	PQR		—	○	—
2SA854S	QR		—	—	○

h_{FE} values are classified as follows.

Item	P	Q	R
h_{FE}	82～180	120～270	180～390

●Electrical characteristic curves

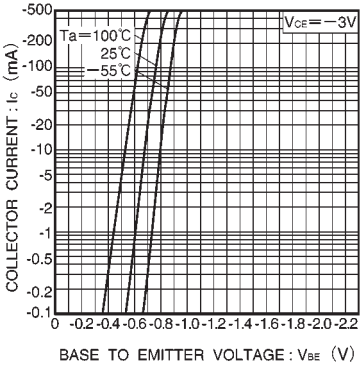


Fig.1 Grounded emitter propagation

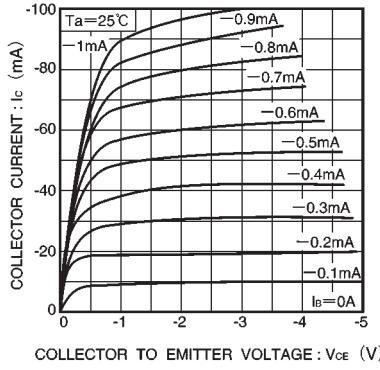


Fig.2 Grounded emitter output characteristics (Ⅰ)

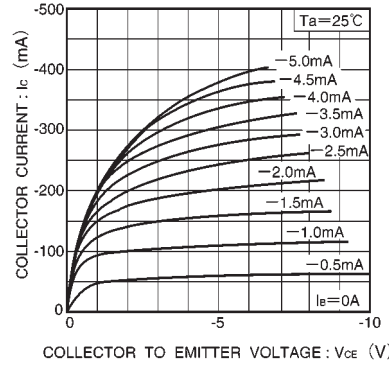


Fig.3 Grounded emitter output characteristics (Ⅱ)

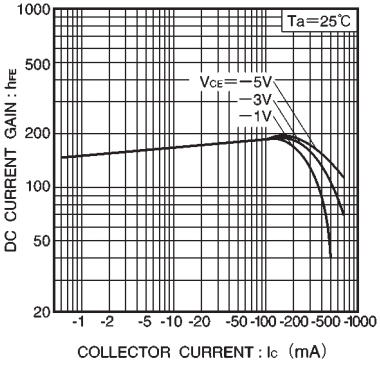


Fig.4 DC current gain vs. collector current (Ⅰ)

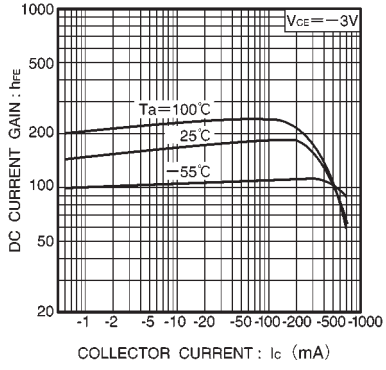


Fig.5 DC current gain vs. collector current (Ⅱ)

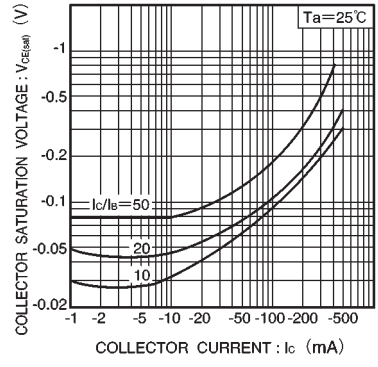


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅰ)

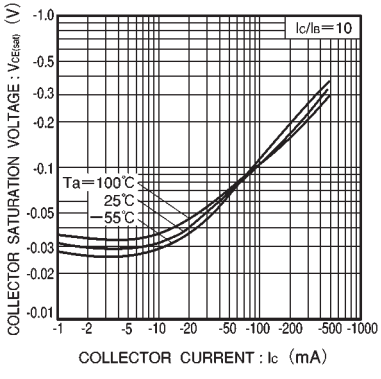


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅱ)

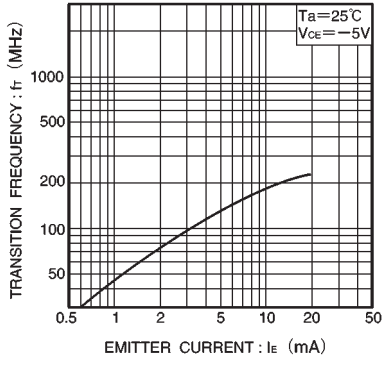


Fig.8 Gain bandwidth product vs. emitter current

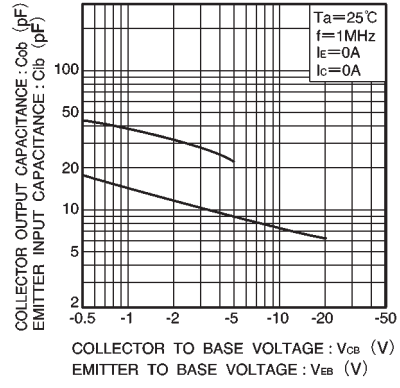


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage