

# High-voltage Amplifier Transistor (−120V, −50mA)

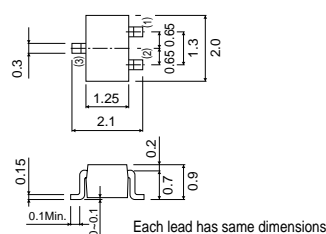
## 2SA1579 / 2SA1514K / 2SA1038S

### ●Features

- 1) High breakdown voltage. ( $BV_{CEO} = -120V$ )
- 2) Complements the 2SC4102 / 2SC3906K / 2SC2389S.

### ●External dimensions (Unit : mm)

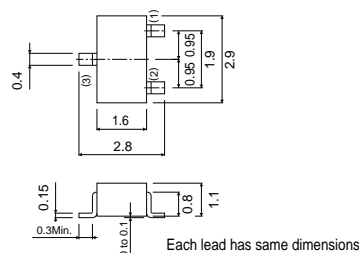
#### 2SA1579



ROHM : UMT3  
EIAJ : SC-70  
JEDEC : SOT-323

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

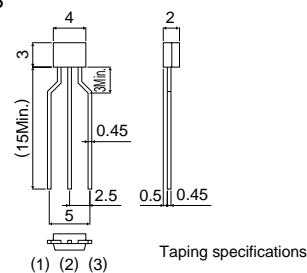
#### 2SA1514K



ROHM : SMT3  
EIAJ : SC-59  
JEDEC : SOT-346

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

#### 2SA1038S



ROHM : SPT  
EIAJ : SC-72

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

# 2SA1579 / 2SA1514K / 2SA1038S

## Transistors

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	−120	V
Collector-emitter voltage	V <sub>CE0</sub>	−120	V
Emitter-base voltage	V <sub>EB0</sub>	−5	V
Collector current	I <sub>c</sub>	−50	mA
Collector power dissipation	P <sub>c</sub>	0.2	W
		0.3	
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	−55 to +150	°C

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

Type	2SA1579	2SA1514K	2SA1038S
Package	UMT3	SMT3	SPT
h <sub>FE</sub>	RS	RS	RS
Marking	R*	R*	—
Code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

\*Denotes h<sub>FE</sub>

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	−120	—	—	V	I <sub>c</sub> = −50μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	−120	—	—	V	I <sub>c</sub> = −1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	−5	—	—	V	I <sub>E</sub> = −50μA
Collector cutoff current	I <sub>CB0</sub>	—	—	−0.5	μA	V <sub>CB</sub> = −100V
Emitter cutoff current	I <sub>EB0</sub>	—	—	−0.5	μA	V <sub>EB</sub> = −4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	−0.5	V	I <sub>c</sub> /I <sub>B</sub> = −10mA/−1mA
DC current transfer ratio	h <sub>FE</sub>	180	—	560	—	V <sub>CE</sub> = −6V, I <sub>c</sub> = −2mA
Transition frequency	f <sub>T</sub>	—	140	—	MHz	V <sub>CE</sub> = −12V, I <sub>E</sub> =2mA, f=100MHz
Output capacitance	C <sub>ob</sub>	—	3.2	—	pF	V <sub>CB</sub> = −12V, I <sub>E</sub> =0A, f=1MHz

## Transistors

## ●Electrical characteristic curves

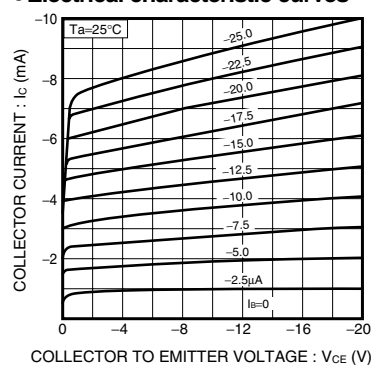


Fig.1 Ground emitter output characteristics

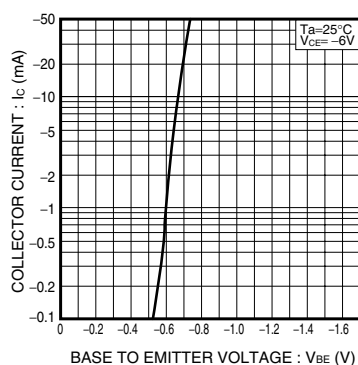


Fig.2 Ground emitter propagation characteristics

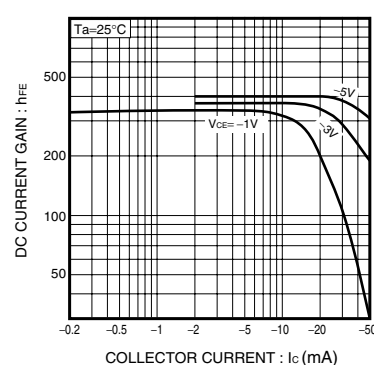


Fig.3 DC current gain vs. collector current

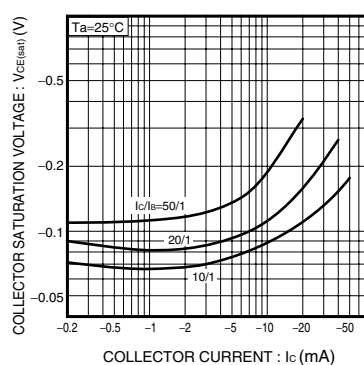


Fig.4 Collector-Emitter saturation voltage vs. collector current

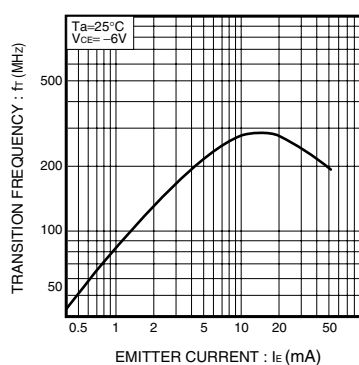


Fig.5 Transition frequency vs. emitter current

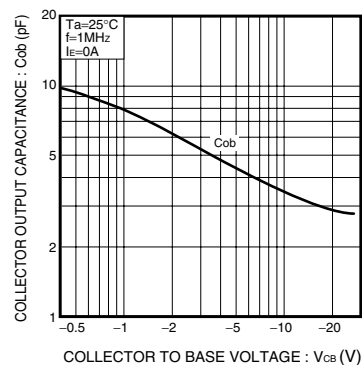


Fig.6 Collector output capacitance vs. collector-base voltage

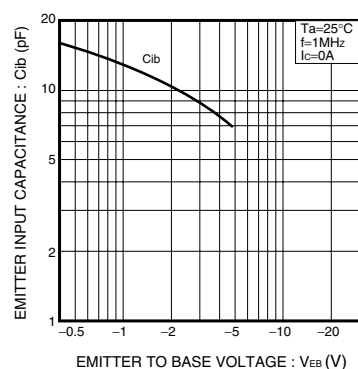


Fig.7 Emitter input capacitance vs. emitter-base voltage

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