

# Medium Power Transistor (32V, 0.5A)

## 2SC2411K / 2SC4097 / 2SC1741S

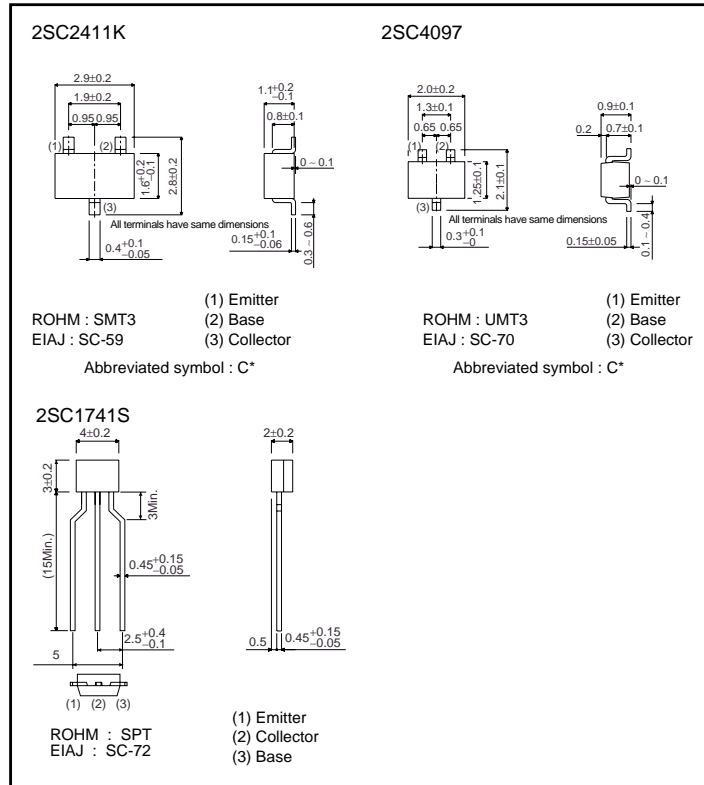
**●Features**

- 1) High  $I_{cMax.}$   
 $I_{cMax.} = 0.5mA$
- 2) Low  $V_{CE(sat)}$ .  
Optimal for low voltage operation.
- 3) Complements the  
2SA1036K / 2SA1577 / 2SA854S.

**●Structure**

Epitaxial planar type  
NPN silicon transistor

**●External dimensions (Units : mm)**



\* Denotes hFE

**●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	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

\*  $P_c$  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>CE0</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
DC current transfer ratio	2SC2411K, 2SC4097	82	–	390	–	V <sub>CE</sub> = 3V, I <sub>c</sub> = 100mA
	2SC1741S	120	–	560	–	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	–	–	0.4	V	I <sub>c</sub> /I <sub>B</sub> = 500mA/50mA
Transition frequency	f <sub>r</sub>	–	250	–	MHz	V <sub>CE</sub> = 5V, I <sub>E</sub> = –20mA, f = 100MHz
Output capacitance	C <sub>ob</sub>	–	6.0	–	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	T106	TP
		Basic ordering unit (pieces)	3000	3000	5000
2SC2411K	PQR		○	–	–
2SC4097	PQR		–	○	–
2SC1741S	QRS		–	–	○

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

Item	P	Q	R	S
h <sub>FE</sub>	82 ~ 180	120 ~ 270	180 ~ 390	270 ~ 560

●Electrical characteristic curves

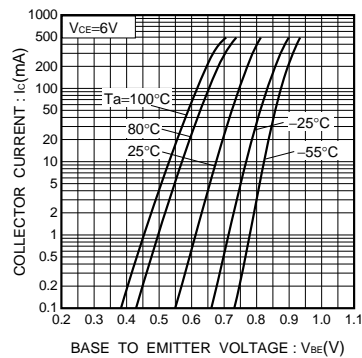


Fig.1 Grounded emitter propagation characteristics

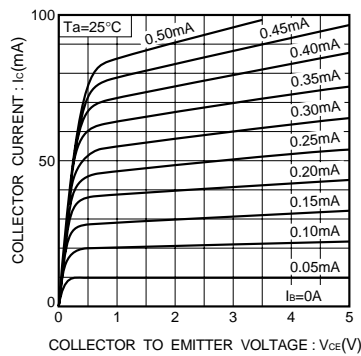


Fig.2 Grounded emitter output characteristics(I)

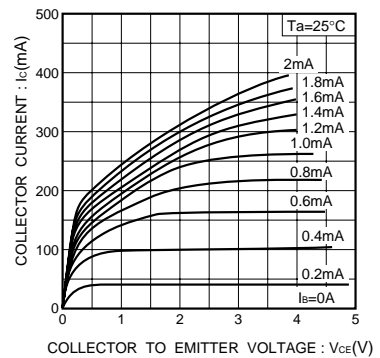


Fig.3 Grounded emitter output characteristics(II)

Transistors

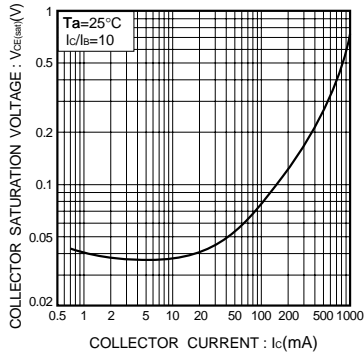


Fig.4 Collector-emitter saturation voltage vs. collector current

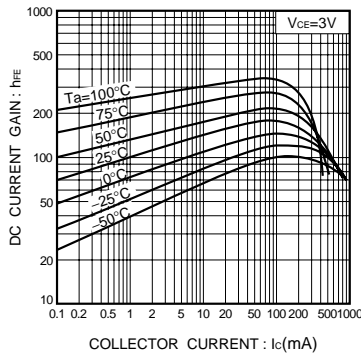


Fig.5 DC current gain vs. collector current

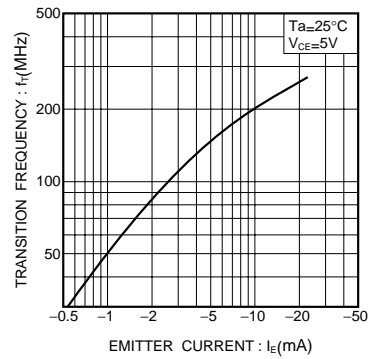


Fig.6 Gain bandwidth product vs. emitter current

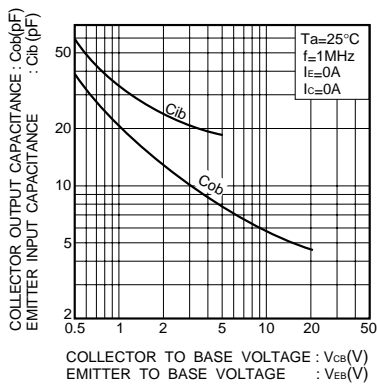


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage