

General Purpose Transistor (50V, 0.15A)

2SC2412K / 2SC4081 / 2SC4617 / 2SC1740S

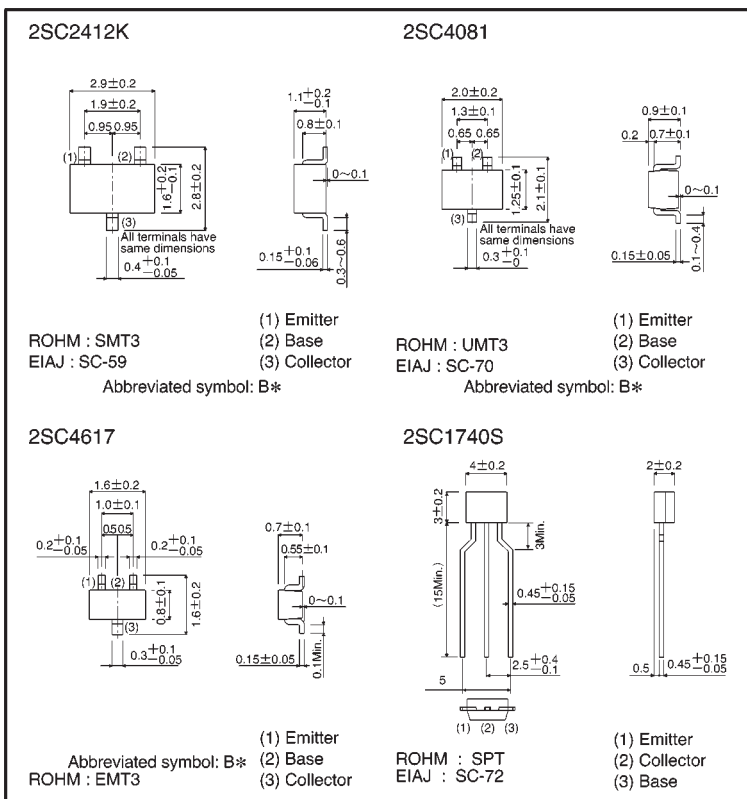
●Features

- 1) Low C_{ob} .
 $C_{ob} = 2.0\text{pF (Typ.)}$
- 2) Complements the 2SA1037AK / 2SA1576A / 2SA1774 / 2SA933AS.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Units: mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$) * Denotes hFE

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	0.15	A
Collector power dissipation	2SC2412K, 2SC4081	0.2	mW
	2SC4617	0.15	
	2SC1740S	0.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

(96-158-C22)

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	60	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	7	—	—	V	$I_E=50\mu A$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB}=60V$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB}=7V$
DC current transfer ratio	h_{FE}	120	—	560	—	$V_{CE}=6V, I_C=1mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_C/I_B=50mA/5mA$
Transition frequency	f_T	—	180	—	MHz	$V_{CE}=12V, I_E=-2mA, f=100MHz$
Output capacitance	C_{ob}	—	2	3.5	pF	$V_{CE}=12V, I_E=0A, f=1MHz$

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping			Bulk
		Code	T146	T106	TL	TP
		Basic ordering unit (pieces)	3000	3000	3000	5000
2SC2412K	QRS	○	—	—	—	—
2SC4081	QRS	—	○	—	—	—
2SC4617	QRS	—	—	○	—	—
2SC1740S	QRS	—	—	—	○	—

h_{FE} values are classified as follows :

Item	Q	R	S
h_{FE}	120~270	180~390	270~560

●Electrical characteristic curves

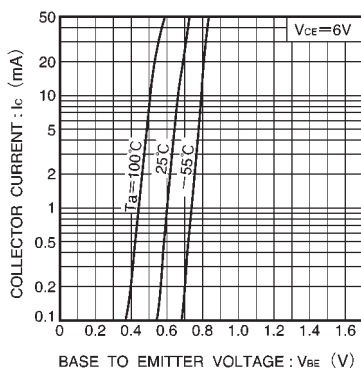


Fig.1 Grounded emitter propagation characteristics

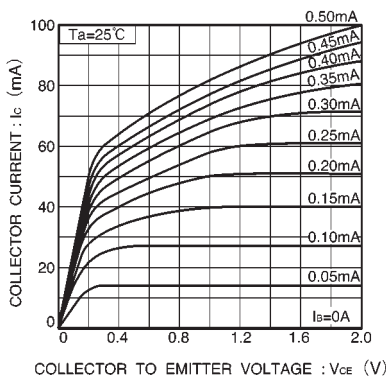


Fig.2 Grounded emitter output characteristics (I)

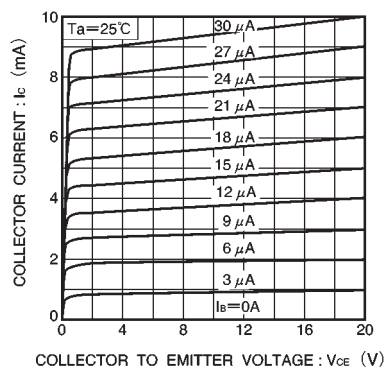


Fig.3 Grounded emitter output characteristics (II)

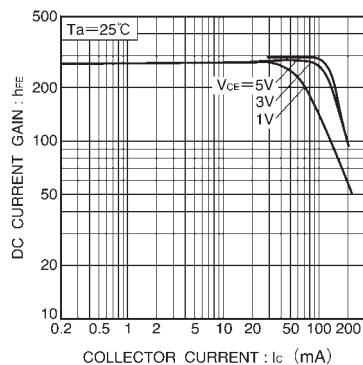


Fig. 4 DC current gain vs. collector current (I)

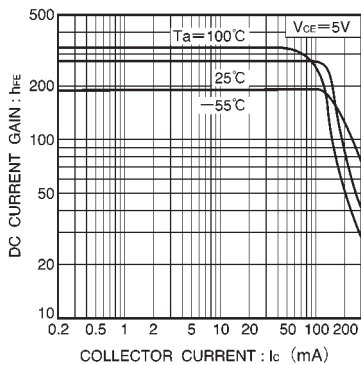


Fig. 5 DC current gain vs. collector current (II)

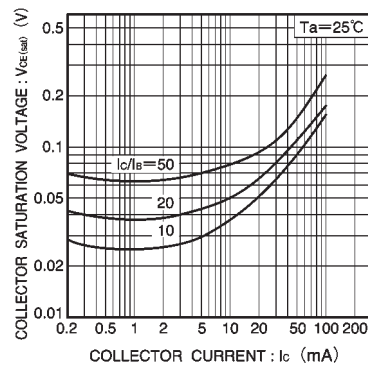


Fig. 6 Collector-emitter saturation voltage vs. collector current

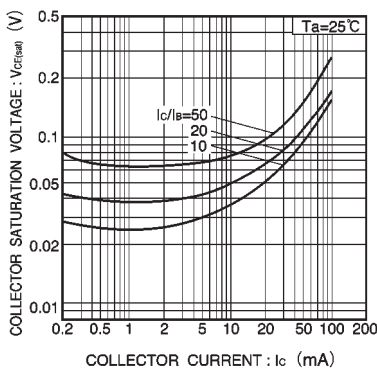


Fig. 7 Collector-emitter saturation voltage vs. collector current (I)

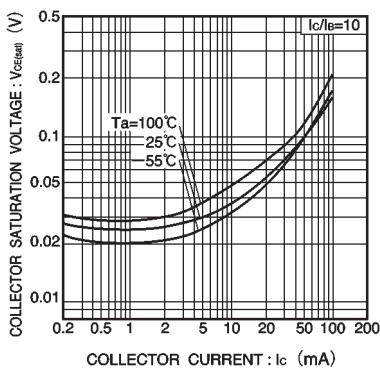


Fig. 8 Collector-emitter saturation voltage vs. collector current (II)

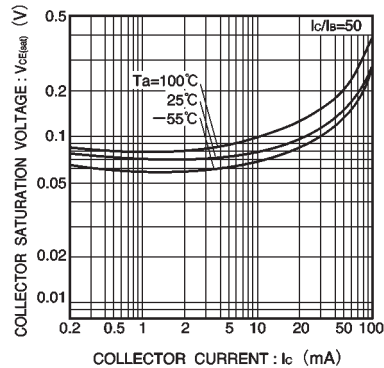


Fig. 9 Collector-emitter saturation voltage vs. collector current (III)

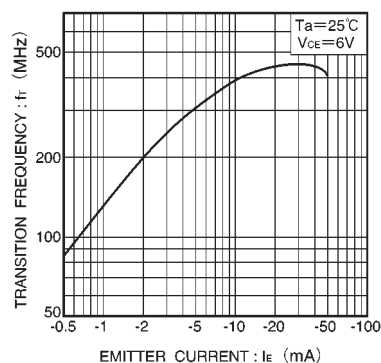


Fig. 10 Gain bandwidth product vs. emitter current

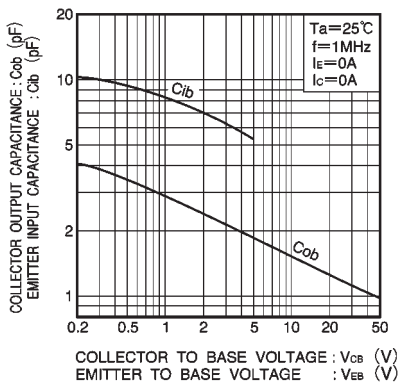


Fig. 11 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

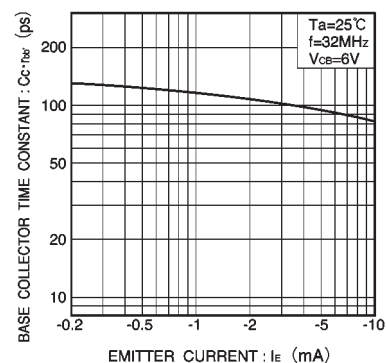


Fig. 12 Base-collector time constant vs. emitter current