

General Purpose Transistor (50V, 0.15A)

2SC2412K / 2SC4081 / 2SC4617 / 2SC1740S

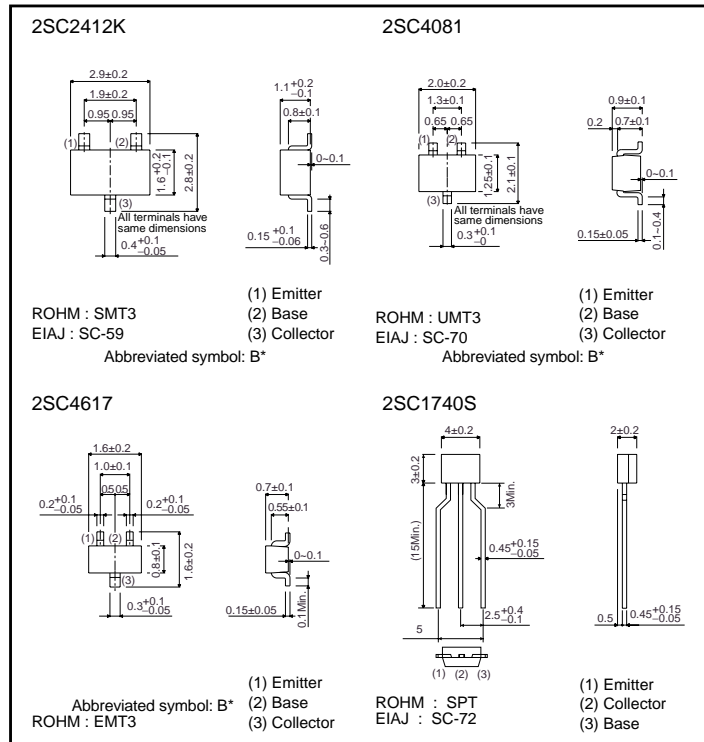
●Features

- 1) Low Cob.
Cob=2.0pF (Typ.)
- 2) Complements the 2SA1037AK /
2SA1576A / 2SA1774 /
2SA933AS.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Units : mm)



●Absolute maximum (Ta=25°C)

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	°C
Storage temperature	T_{stg}	-55~+150	°C

2SC2412K / 2SC4081 / 2SC4617 / 2SC1740S

Transistors

●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

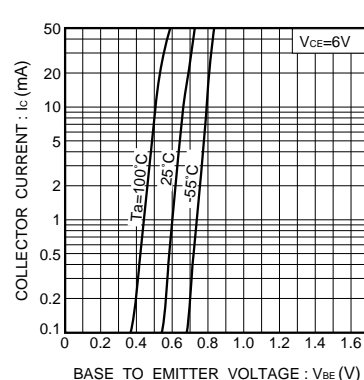


Fig.1 Grounded emitter propagation characteristics

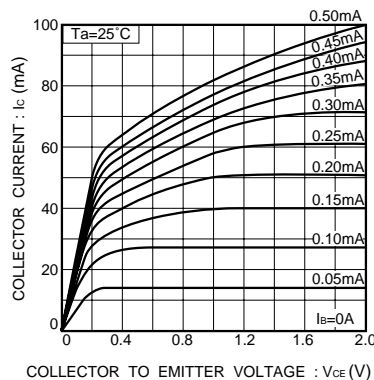


Fig.2 Grounded emitter output characteristics (I)

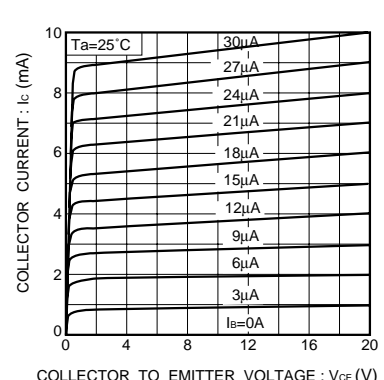


Fig.3 Grounded emitter output characteristics (II)

Transistors

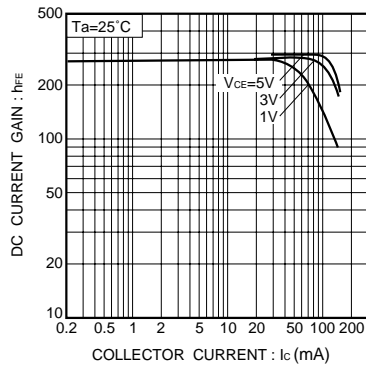


Fig.4 DC current gain vs. collector current (I)

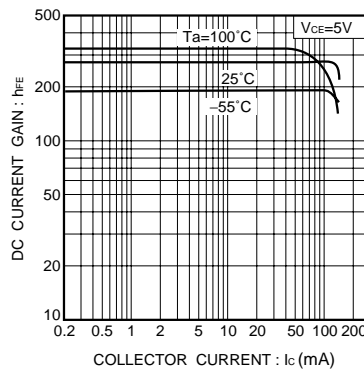


Fig.5 DC current gain vs. collector current (II)

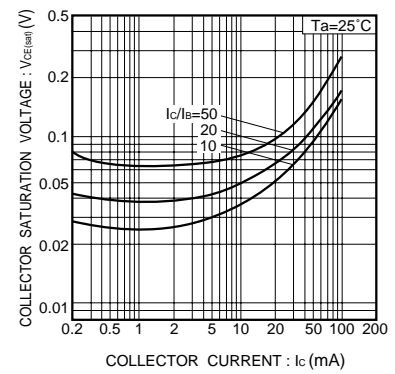


Fig.6 Collector-emitter saturation voltage vs. collector current

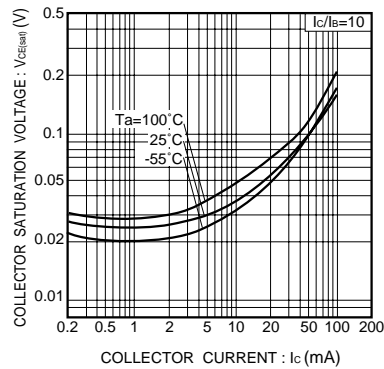


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

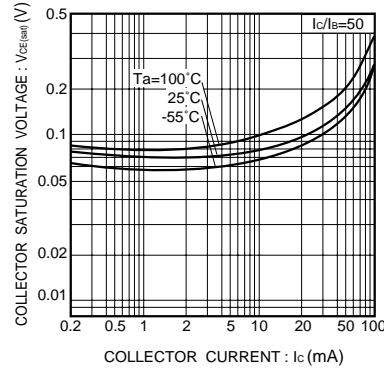


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

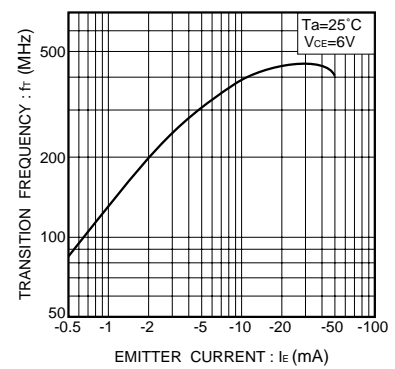


Fig.9 Gain bandwidth product vs. emitter current

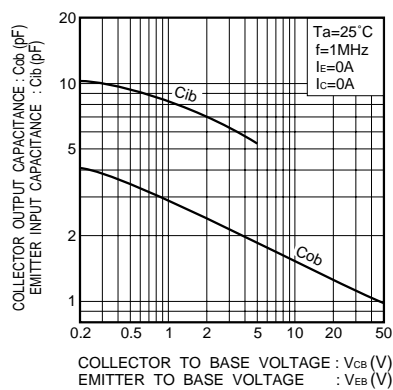


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

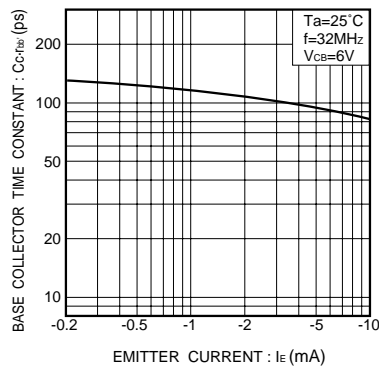


Fig.11 Base-collector time constant vs. emitter current