

General purpose transistor (50V, 0.15A)

2SC2412K / 2SC4081 / 2SC4617 / 2SC5658 / 2SC1740S

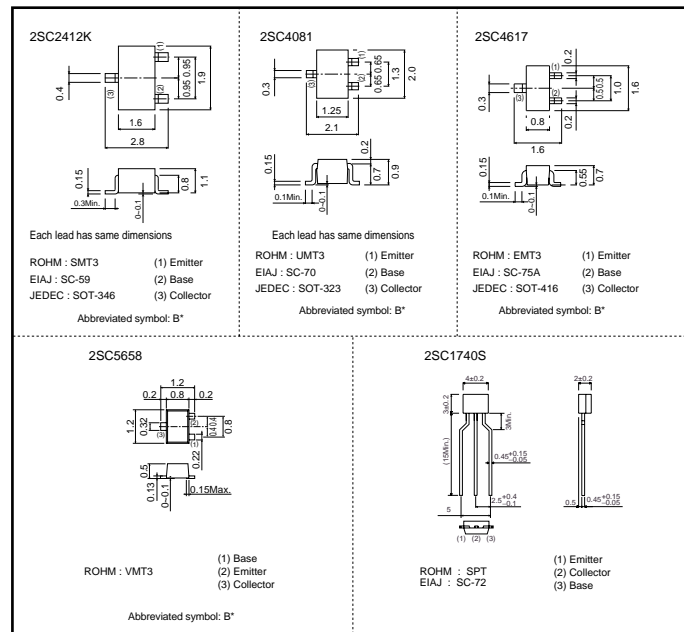
●Features

- Low Cob.
Cob=2.0pF (Typ.)
- Complements the 2SA1037AK /
2SA1576A / 2SA1774H /
2SA2029 / 2SA933AS.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Units : mm)



* Denotes hrfc

●Absolute maximum (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	60	V
Collector-emitter voltage	V _{CE0}	50	V
Emitter-base voltage	V _{EB0}	7	V
Collector current	I _c	0.15	A
Collector power dissipation	2SC2412K, 2SC4081	0.2	W
	2SC4617, 2SC5658	0.15	
	2SC1740S	0.3	
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~+150	°C

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	60	–	–	V	I _c =50μA
Collector-emitter breakdown voltage	BV _{CEO}	50	–	–	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	7	–	–	V	I _E =50μA
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 _r	–	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	T2L	TP
		Basic ordering unit (pieces)	3000	3000	3000	8000	5000
2SC2412K	QRS	○	–	–	–	–	
2SC4081	QRS	–	○	–	–	–	
2SC4617	QRS	–	–	○	–	–	
2SC5658	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

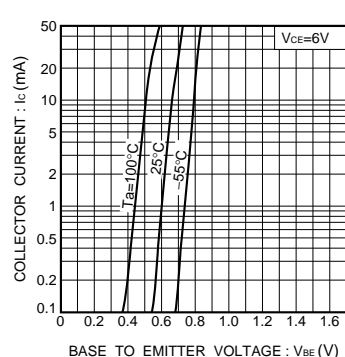


Fig.1 Grounded emitter propagation characteristics

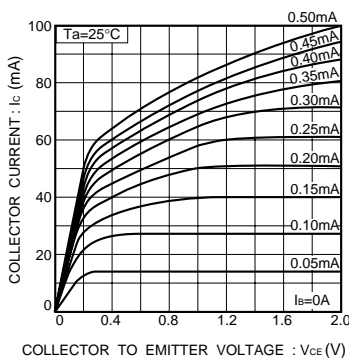


Fig.2 Grounded emitter output characteristics (I)

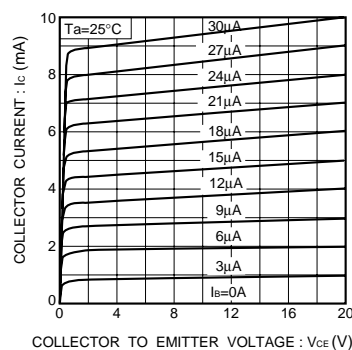


Fig.3 Grounded emitter output characteristics (II)

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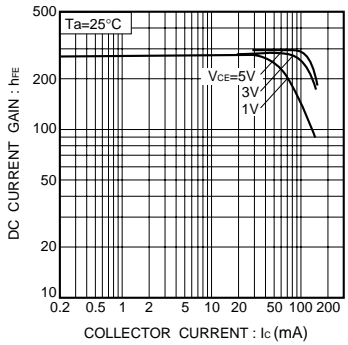


Fig.4 DC current gain vs. collector current (I)

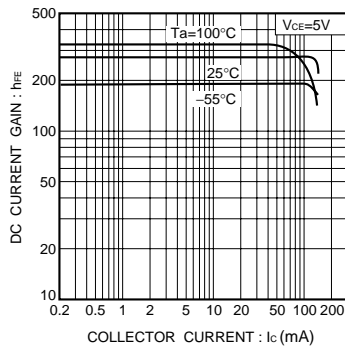


Fig.5 DC current gain vs. collector current (II)

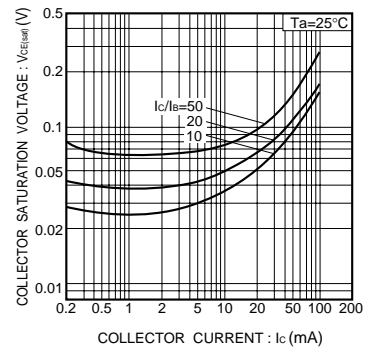


Fig. 6 Collector-emitter saturation voltage vs. collector current

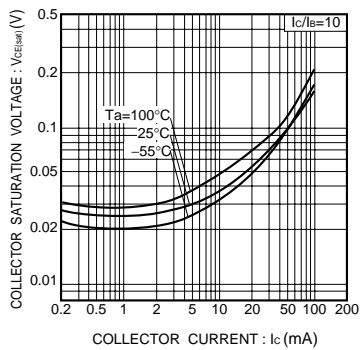


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

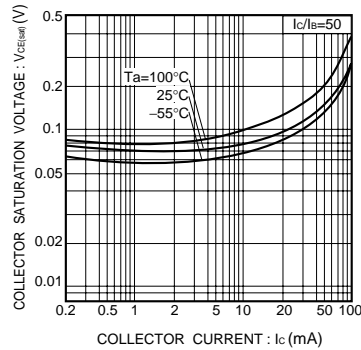


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

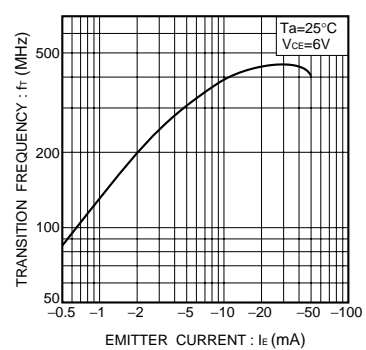


Fig.9 Gain bandwidth product vs. emitter current

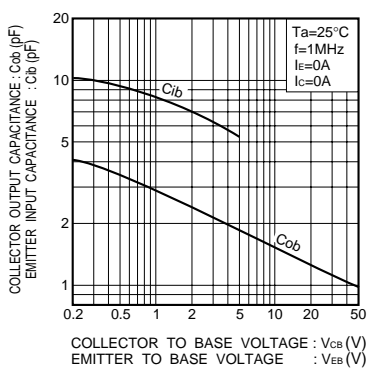


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

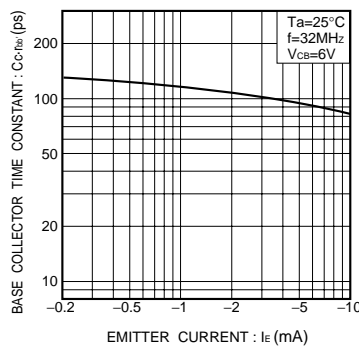


Fig.11 Base-collector time constant vs. emitter current