

# General purpose transistor (50V, 0.15A)

2SC2412K / 2SC4081 / 2SC4617 / 2SC5658

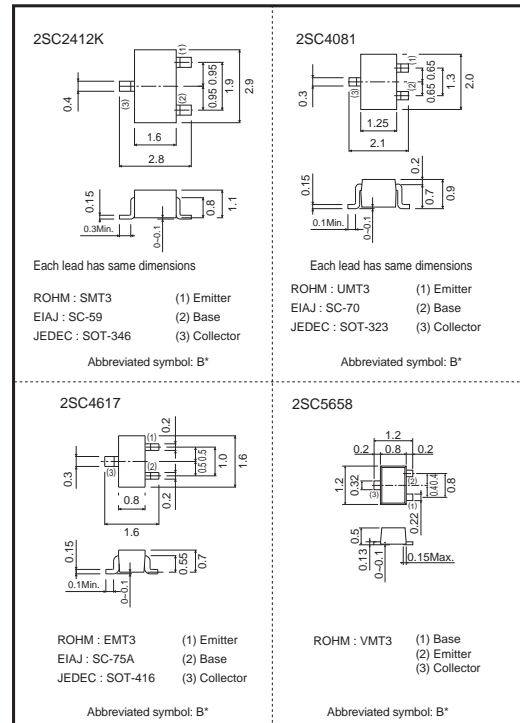
●Features

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

●Structure

Epitaxial planar type  
NPN silicon transistor

●Dimensions (Unit : mm)



\* Denotes hFE

●Absolute maximum (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	60	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	7	V
Collector current	I <sub>c</sub>	0.15	A
Collector power dissipation	P <sub>c</sub>	0.2	W
		0.15	
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	60	-	-	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	50	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	7	-	-	V	I <sub>E</sub> =50μA
Collector cutoff current	I <sub>cBO</sub>	-	-	0.1	μA	V <sub>CB</sub> =60V
Emitter cutoff current	I <sub>EBO</sub>	-	-	0.1	μA	V <sub>EB</sub> =7V
DC current transfer ratio	h <sub>FE</sub>	120	-	390	-	V <sub>CE</sub> =6V, I <sub>c</sub> =1mA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.4	V	I <sub>c</sub> /I <sub>B</sub> =50mA/5mA
Transition frequency	f <sub>T</sub>	-	180	-	MHz	V <sub>CE</sub> =12V, I <sub>E</sub> =-2mA, f=100MHz
Output capacitance	Cob	-	2	3.5	pF	V <sub>CE</sub> =12V, I <sub>E</sub> =0A, f=1MHz

●Packaging specifications and  $h_{FE}$

Type	$h_{FE}$	Package	Taping			
		Code	T146	T106	TL	T2L
		Basic ordering unit (pieces)	3000	3000	3000	8000
2SC2412K	QR	○	-	-	-	
2SC4081	QR	-	○	-	-	
2SC4617	QR	-	-	○	-	
2SC5658	QR	-	-	-	○	

$h_{FE}$  values are classified as follows :

Item	Q	R
$h_{FE}$	120 to 270	180 to 390

●Electrical characteristic curves

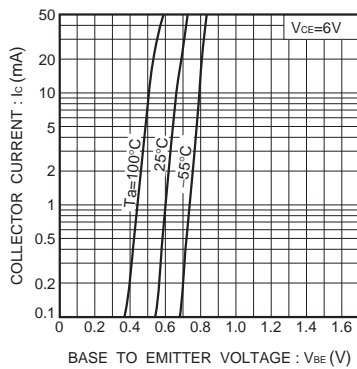


Fig.1 Grounded emitter propagation characteristics

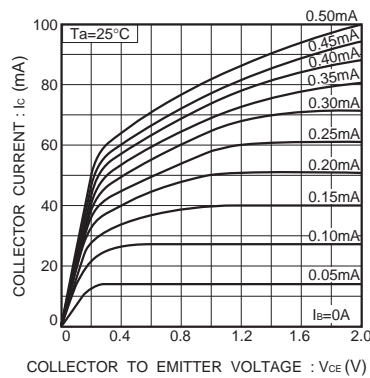


Fig.2 Grounded emitter output characteristics ( I )

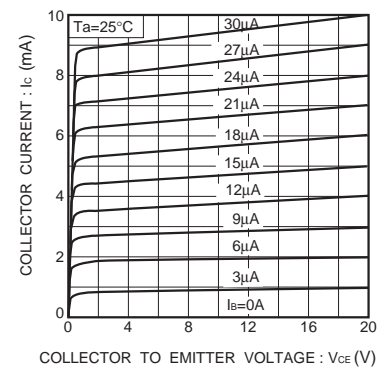


Fig.3 Grounded emitter output characteristics ( II )

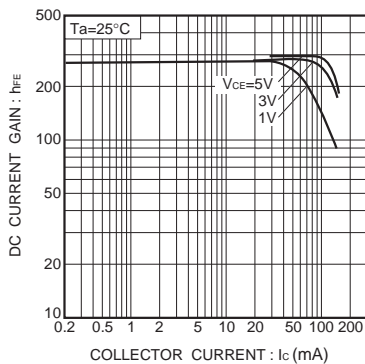


Fig.4 DC current gain vs. collector current ( I )

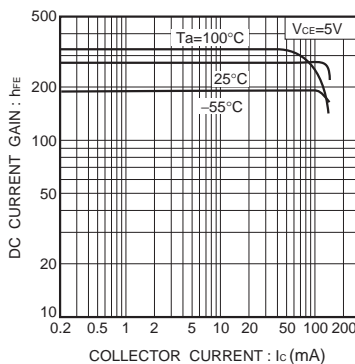


Fig.5 DC current gain vs. collector current ( II )

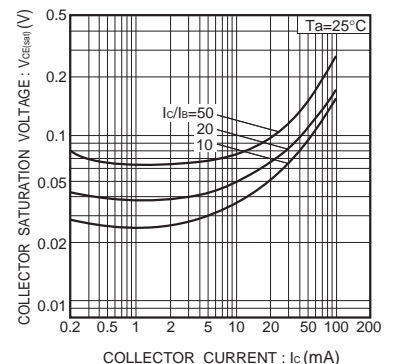


Fig.6 Collector-emitter saturation voltage vs. collector current



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



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



Fig.9 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

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