

# Medium Power Transistor

## NPN silicon

### FEATURE

- Epitaxial planar type
- Complementary to 2SA1036K
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements, AEC-Q101 qualified and PPAP Capable.

### DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
2SC2411KQ S-2SC2411KQ	CQ	3000/Tape&Reel
2SC2411KR S-2SC2411KR	CR	3000/Tape&Reel

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	40	V
Collector-emitter voltage	V <sub>CEO</sub>	32	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	0.5	A*
Collector power dissipation	P <sub>C</sub>	0.2	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

\*P<sub>C</sub> must not be exceeded.

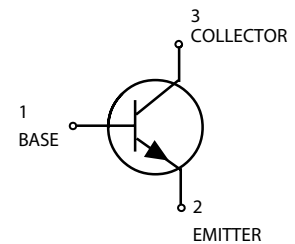
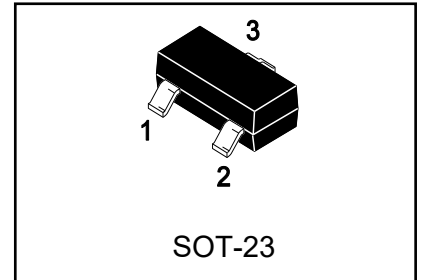
### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CBO</sub>	40	-	-	V	I <sub>C</sub> =100μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	32	-	-	V	I <sub>C</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	5	-	-	V	I <sub>E</sub> =100μA
Collector cutoff current	I <sub>CBO</sub>	-	-	1	μA	V <sub>CB</sub> =20V
Emitter cutoff current	I <sub>EBO</sub>	-	-	1	μA	V <sub>EB</sub> =4V
DC current transfer ratio	h <sub>FE</sub>	120	-	390	-	V <sub>CE</sub> =3V, I <sub>C</sub> =100mA
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>T</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

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

Item	Q	R
h <sub>FE</sub>	120-270	180-390

**2SC2411K**  
**Series**  
**S-2SC2411K**  
**Series**



Electrical characteristic curves ( $T_A = 25\text{ C}$ )

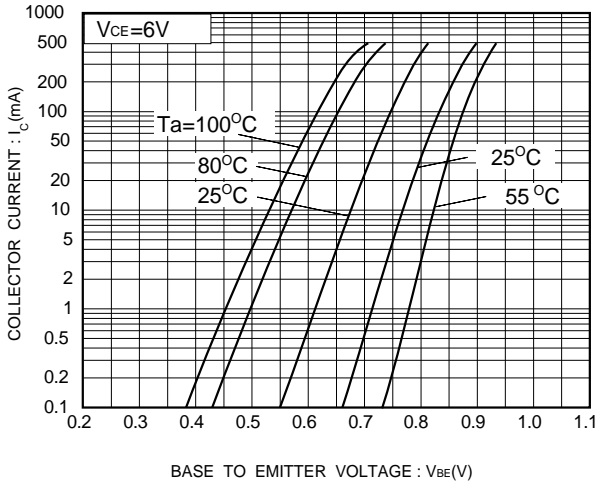


Fig.1 Grounded emitter propagation characteristics

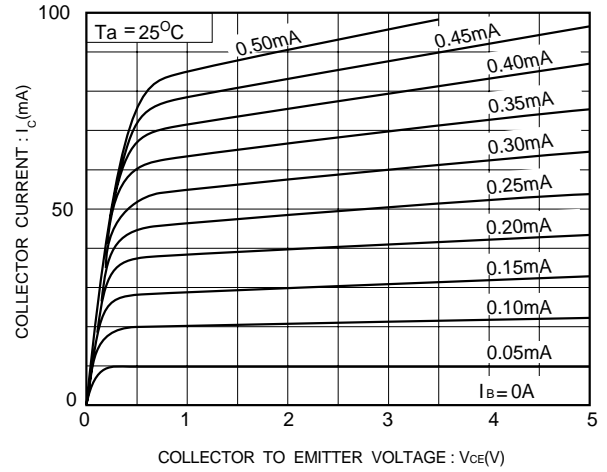


Fig.2 Grounded emitter output characteristics(I)

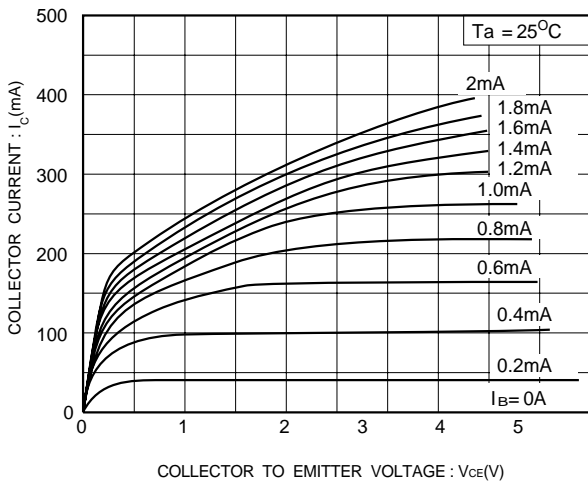


Fig.3 Grounded emitter output characteristics(II)

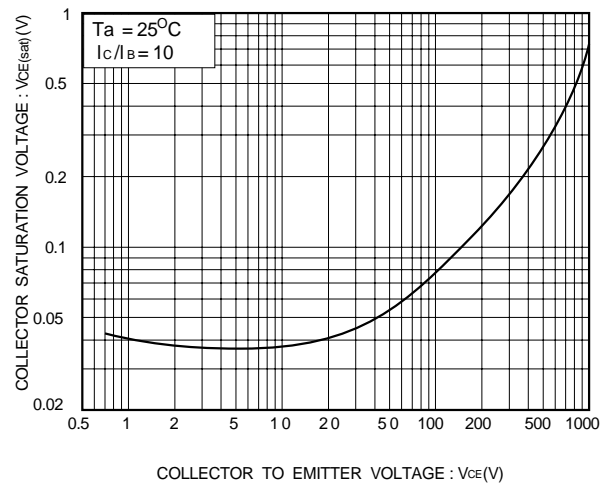


Fig.4 Collector-emitter saturation voltage vs. collector current



Electrical characteristic curves ( $T_A = 25^\circ\text{C}$ )

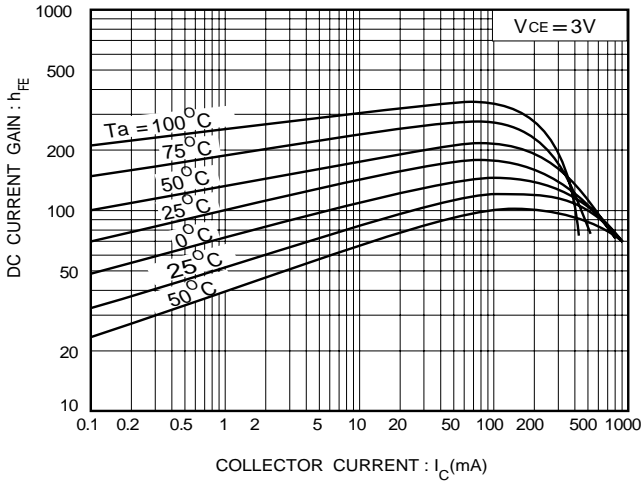


Fig.5 DC current gain vs. collector current

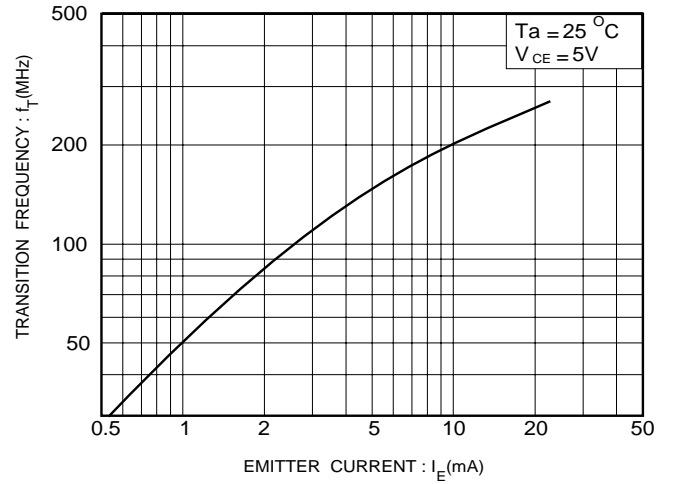


Fig.6 Gain bandwidth product vs. emitter current

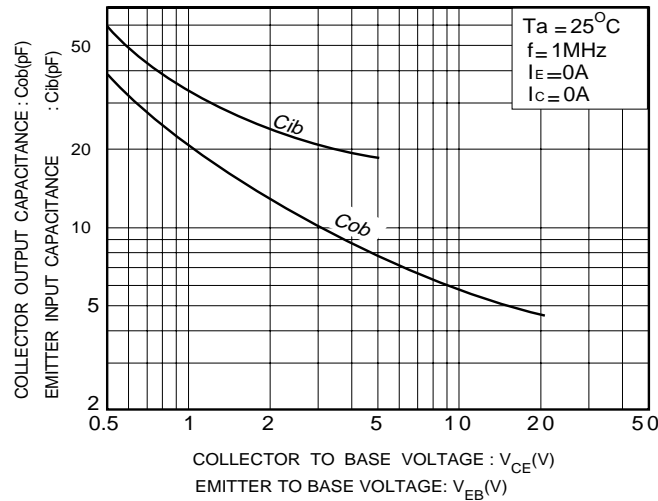
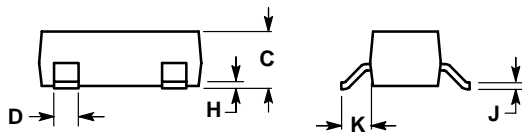
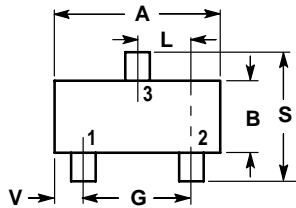


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage



**SOT-23**



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

