



DATA SHEET

SEMICONDUCTOR

2SA1036KP/Q/R

Medium Power Transistor (-32V, -0.5A)



SOT-23 (TO-236AB)

●Features

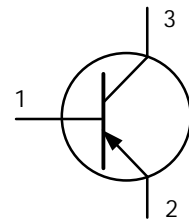
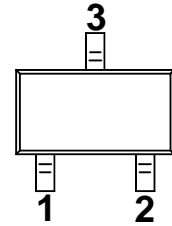
- 1) Large I_c .
 $I_{cmax} = -500mA$
- 2) Low $V_{CE(sat)}$. Ideal for low-voltage operation.
- 3) Pb-Free Package May be Available.
The G.Suffix Denotes a Pb-Free Lead Finish

●Structure

Epitaxial planar type
PNP silicon transistor

●DEVICE MARKING

- | |
|-----------------|
| 1) 2SA1036KP=HP |
| 2) 2SA1036KQ=HQ |
| 3) 2SA1036KR=HR |



PNP

●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-40	V
Collector-emitter voltage	V_{CEO}	-32	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_c	-0.5	A *
Collector power dissipation	P_c	0.2	W
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55~+150	$^\circ C$

* P_{cMAX} . must not be exceeded.

●ORDERING INFORMATION

Device	Package	Shipping
2SA1036K	SOT-23	3000/Tape & Reel

DEVICE CHARACTERISTICS

2SA1036KP/Q/R

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	- 40	—	—	V	I _C = - 100μA
Collector-emitter breakdown voltage	BV _{CEO}	- 32	—	—	V	I _C = - 1mA
Emitter-base breakdown voltage	BV _{EB0}	- 5	—	—	V	I _E = - 100μA
Collector cutoff current	I _{CB0}	—	—	- 1	μA	V _{CB} = - 20v
Emitter cutoff current	I _{EB0}	—	—	- 1	μA	V _{EB} = - 4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	- 0.4	V	I _C /I _B = - 100mA/ - 10mA
DC current transfer ration	h _{FE}	82	—	390	—	V _{CE} = - 3V, I _C = - 10mA
Transition frequency	f _T	—	200	—	MHz	V _{CE} = - 5V, I _E =20mA, f=100MHz
Output capacitance	C _{ob}	—	7	—	pF	V _{CB} = - 10V, I _E =0A, f=1MHz

●h_{FE} values are classified as follows.

Item	P	Q	R
h _{FE}	82~180	120~270	180~390

DEVICE CHARACTERISTICS

2SA1036KP/Q/R

●Electrical characteristic curves

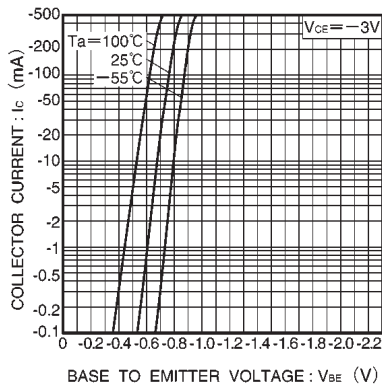


Fig.1 Grounded emitter propagation

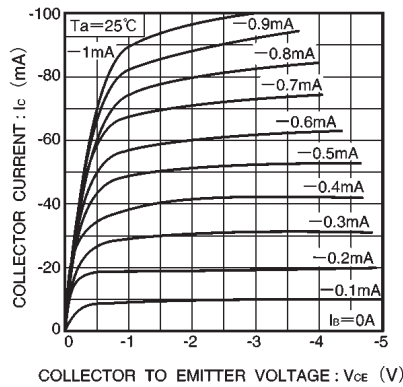


Fig.2 Grounded emitter output characteristics (I)

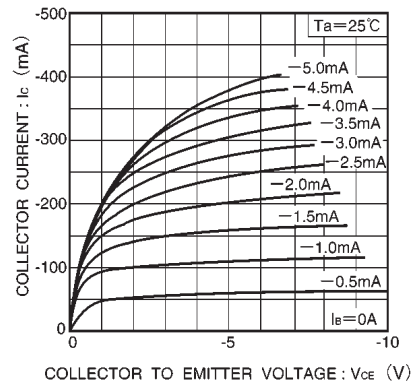


Fig.3 Grounded emitter output characteristics (II)

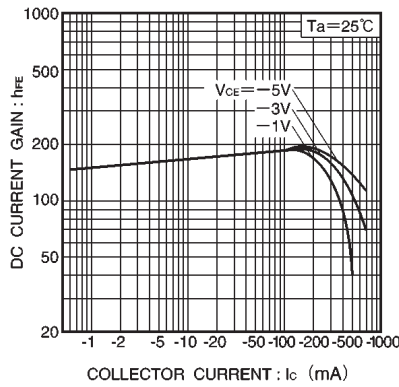


Fig.4 DC current gain vs. collector current (I)

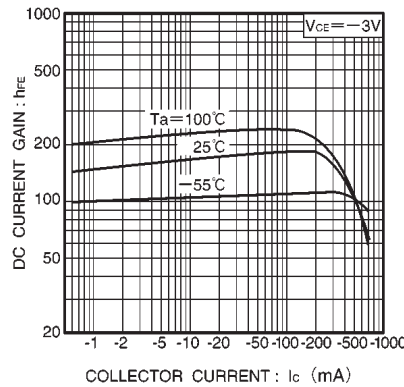


Fig.5 DC current gain vs. collector current (II)

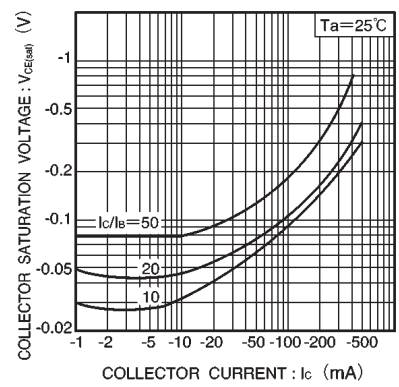


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

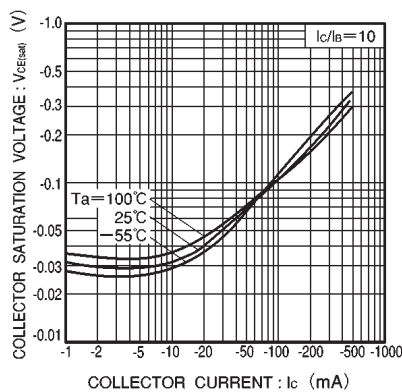


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

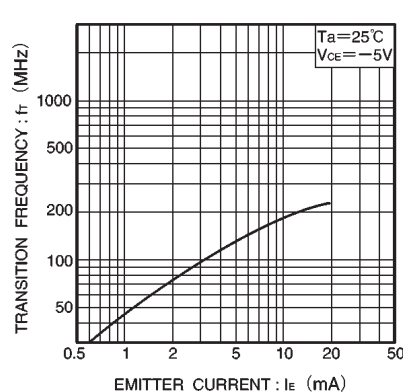


Fig.8 Gain bandwidth product vs. emitter current

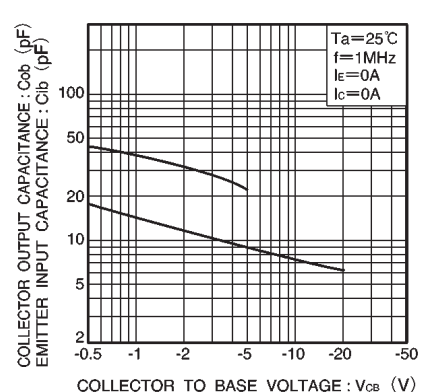


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

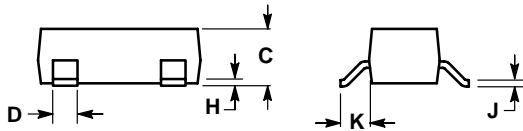
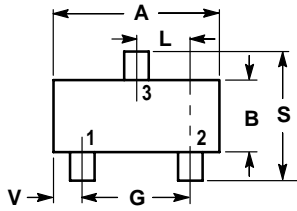
PACKAGE OUTLINE & DIMENSIONS

2SA1036KP/Q/R

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

