2SA1036K

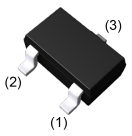
Medium Power Transistor (-32V,-500mA)

Datasheet

Parameter	Value
V_{CEO}	-32V
I_C	-500mA

●Outline

SMT3



2SA1036K

SOT-346

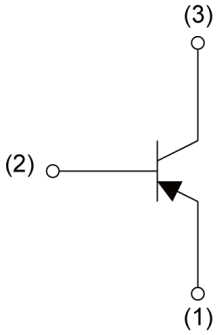
●Features

1)Large I_C.
I_{CMAX}=-500mA

2)Low $V_{CE(sat)}$.
Ideal for low-voltage operating.

3)Complements the 2SC2411K.

●Inner circuit



(1) Emitter
(2) Base
(3) Collector

●Application

GENERAL PURPOSE SMALL SIGNAL AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SA1036K	SMT3	2928	T146	180	8	3000	H

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	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	-500	mA
Power dissipation	P_D*1	200	mW
Junction temperature	T_j	150	℃
Range of storage temperature	T_{stg}	-55 to +150	℃

●Electrical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	I_C = -100μA	-40	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -1mA	-32	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = -100μA	-5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = -20V	-	-	-1.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = -4V	-	-	-1.0	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -300mA, I_B = -30mA	-	-	-600	mV
DC current gain	h_{FE}	V_{CE} = -3V, I_C = -100mA	82	-	390	-
Transition frequency	f_T	V_{CE} = -5V, I_E = 20mA, f = 100MHz	-	200	-	MHz
Output capacitance	C_{ob}	V_{CB} = -10V, I_E = 0A, f = 1MHz	-	7.0	-	pF

hFE values are calssified as follows :

rank	P	Q	R	-	-
h_{FE}	82-180	120-270	180-390	-	-

*1 Each terminal mounted on a reference land.

●Electrical characteristic curves(T_a = 25°C)

Fig.1 Grounded emitter propagation

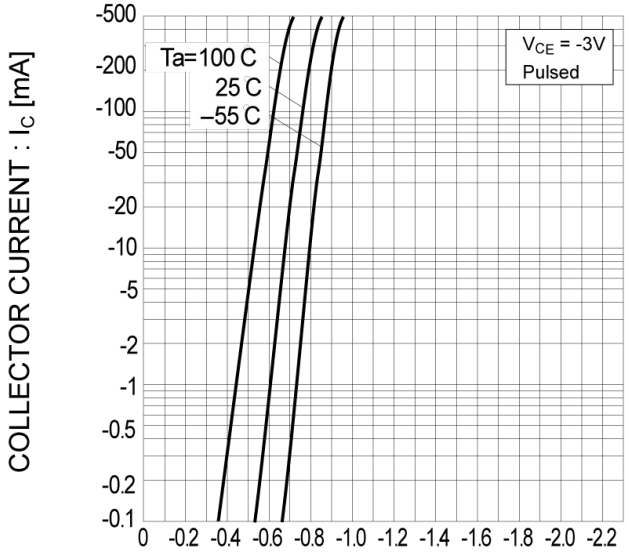


Fig.2 Grounded emitter output characteristics (I)

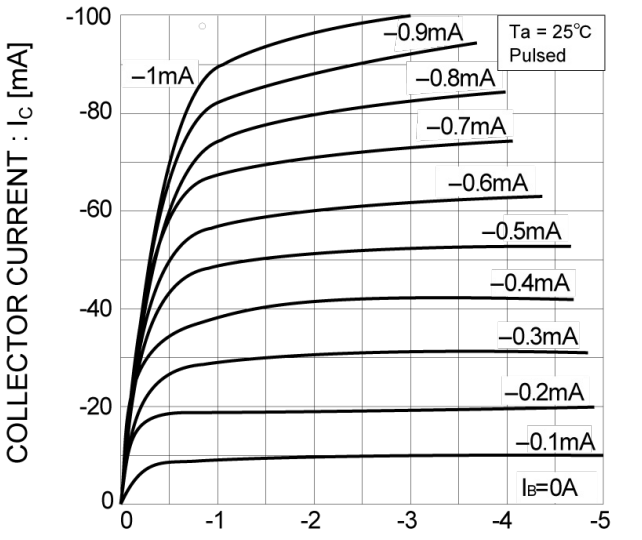


Fig.3 Grounded emitter output characteristics (II)

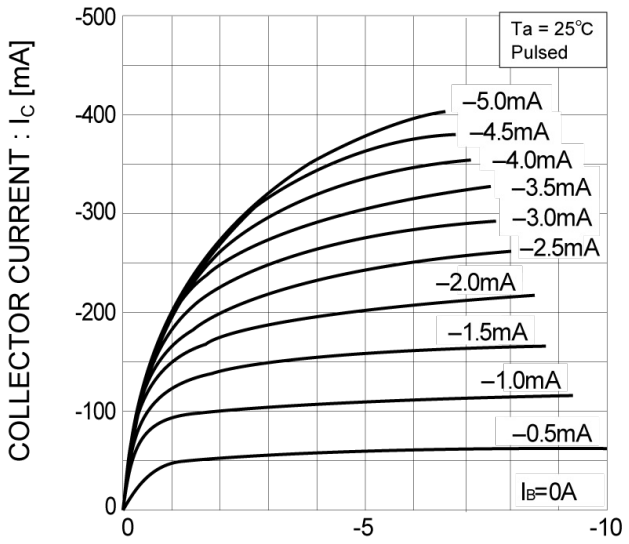
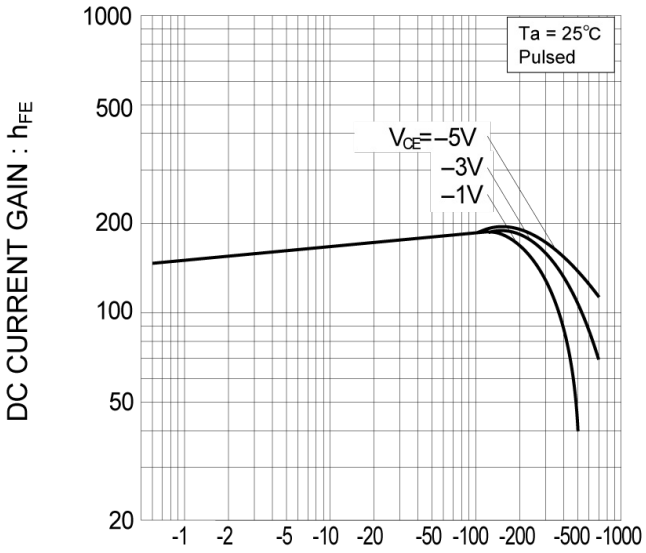


Fig.4 DC current gain vs. collector current (I)



●Electrical characteristic curves(T_a = 25°C)

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

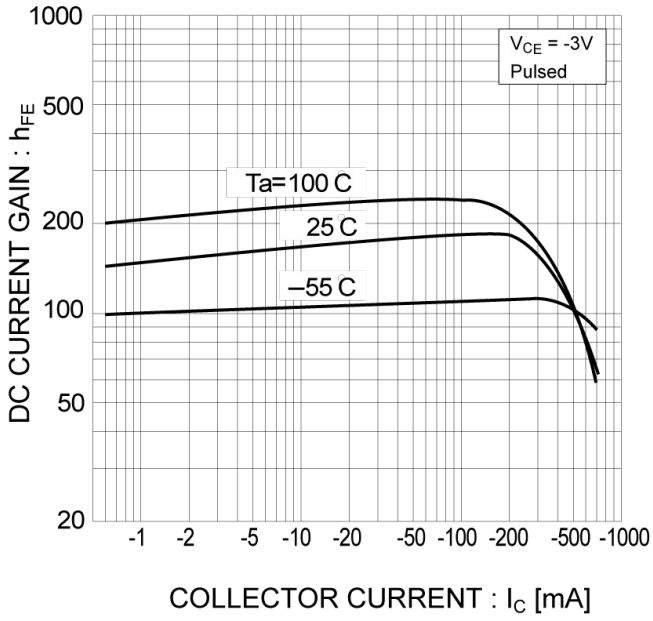


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

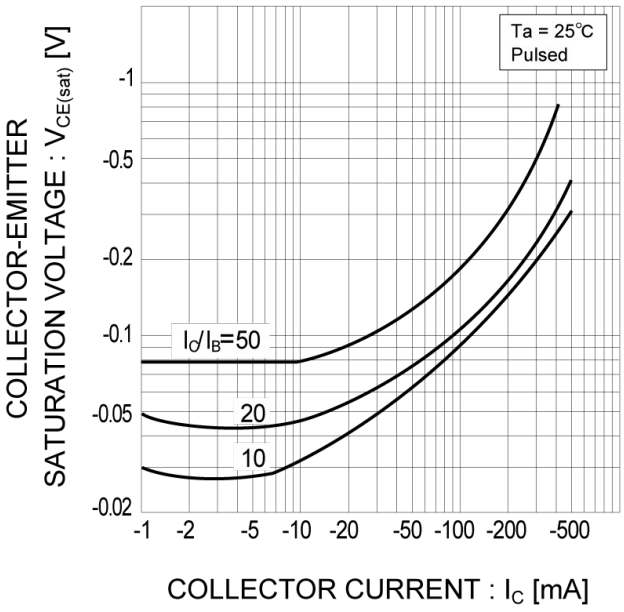


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

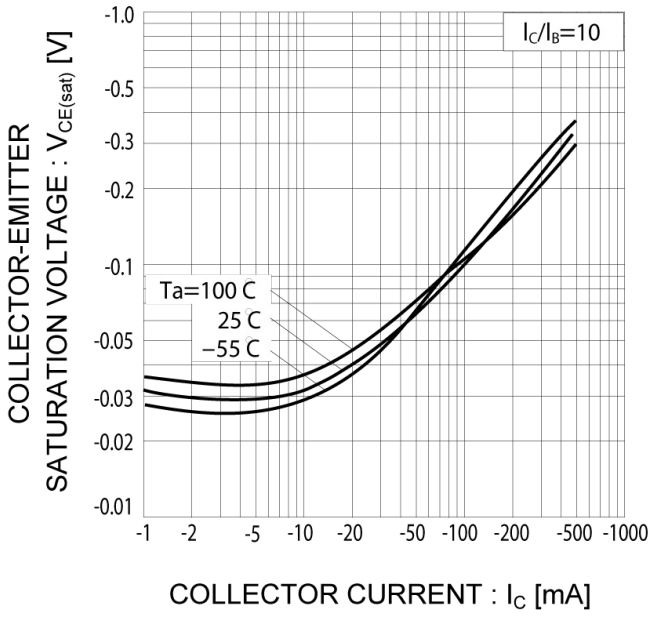
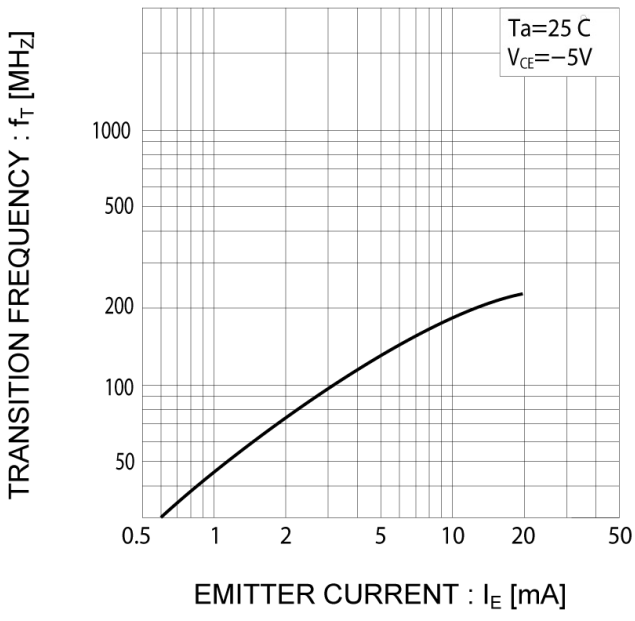


Fig.8 Gain bandwidth product vs. emitter current



●Electrical characteristic curves(T_a = 25°C)

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

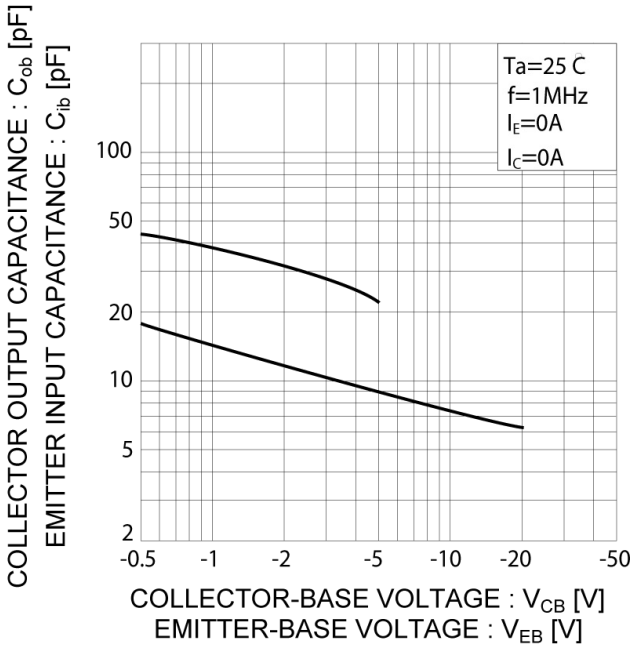
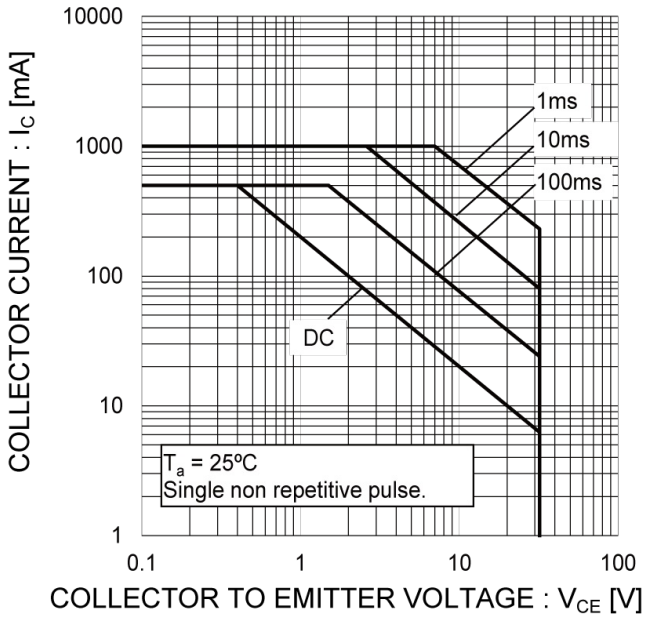
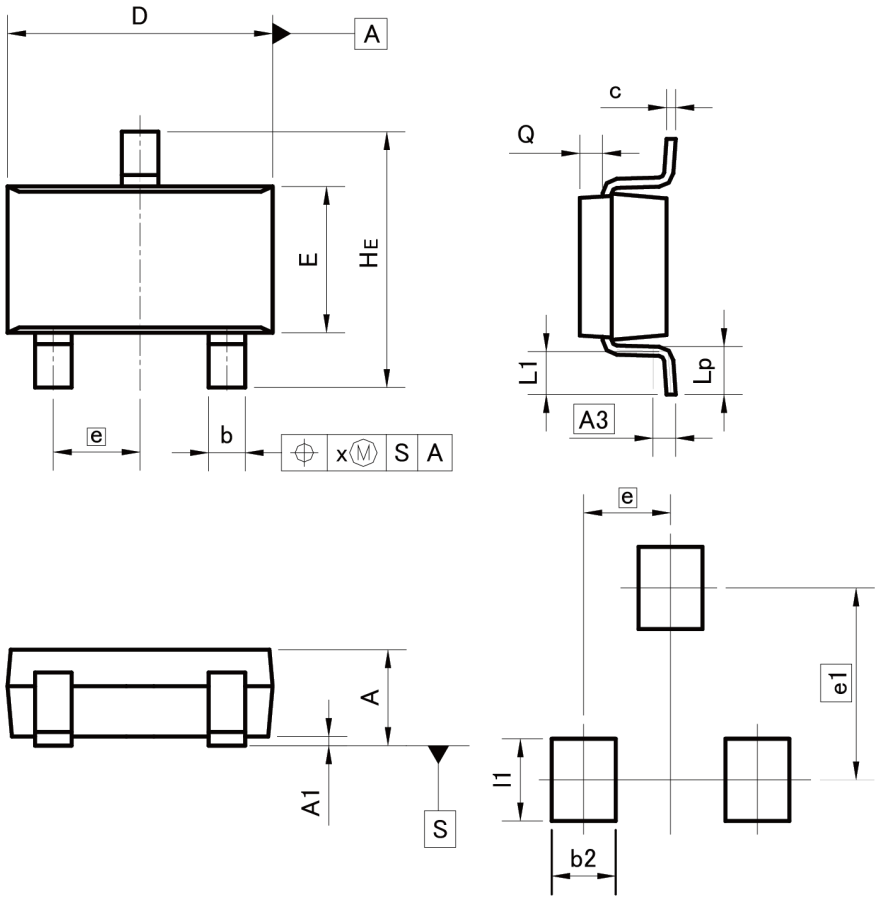


Fig.10 Safe Operating Area



●Dimensions

SMT3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.00	1.30	0.039	0.051
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.35	0.50	0.014	0.020
c	0.09	0.25	0.004	0.010
D	2.80	3.00	0.110	0.118
E	1.50	1.80	0.059	0.071
e	0.95		0.037	
HE	2.60	3.00	0.102	0.118
L1	0.30	0.60	0.012	0.024
Lp	0.40	0.70	0.016	0.028
Q	0.20	0.30	0.008	0.012
x	–	0.10	–	0.004
y	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	–	0.60	–	0.024
e1	2.10		0.083	
l1	–	0.90	–	0.035

Dimension in mm/inches

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