2SAR502U3HZG

PNP 500mA 30V General purpose transistors

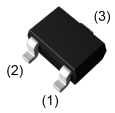
Datasheet

AEC-Q101 Qualified

Parameter	Value
V_{CEO}	-30V
I_C	-0.5A

●Outline

SOT-323
SC-70

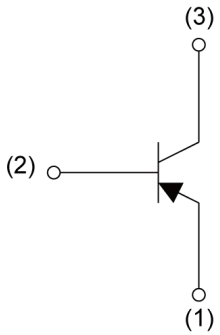


UMT3

●Features

1)General purpose.
2)Complementary NPN types :
2SCR502U3 HZG
3)Collector current is large.
4)Low $V_{CE(sat)}$.

●Inner circuit



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

●Application

LOW FREQUENCY AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SAR502U3HZG	SOT-323 (UMT3)	2021	TL	180	8	3000	LT

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-30	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-0.5	A
	I_{CP}*2	-1	A
Base current	I_B	-0.15	A
Power dissipation	P_D*3	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	-30	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -1mA	-30	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = -100μA	-6	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = -25V	-	-	-200	nA
Emitter cut-off current	I_{EBO}	V_{EB} = -4V	-	-	-200	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -200mA, I_B = -10mA	-	-150	-400	mV
DC current gain	h_{FE}	V_{CE} = -2V, I_C = -100mA	200	-	500	-
Transition frequency	f_T*4	V_{CE} = -10V, I_E = 100mA, f = 100MHz	-	520	-	MHz
Output capacitance	C_{ob}	V_{CB} = -10V, I_E = 0A, f = 1MHz	-	4	-	pF

*1 Limited by power dissipation.

*2 Pw=10ms, Single pulse.

*3 Each terminal mounted on a reference land.

*4 Pulsed

●Electrical characteristic curves(T_a = 25°C)

Fig.1 Grounded Emitter Propagation Characteristics

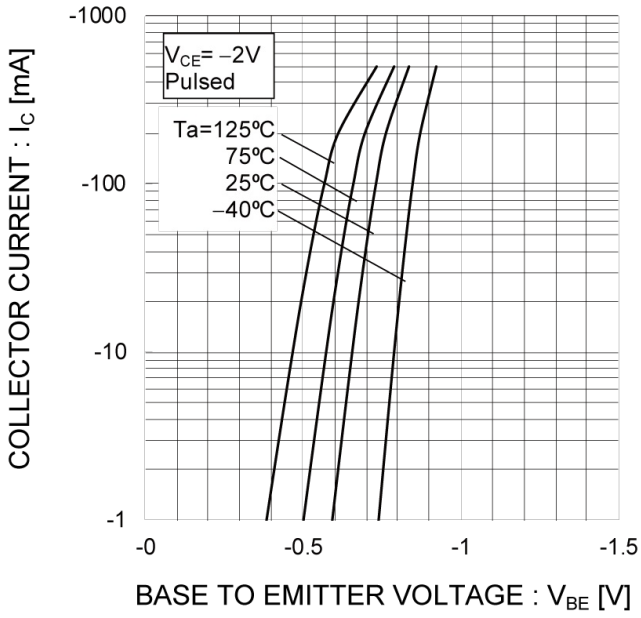


Fig.2 Typical Output Characteristics

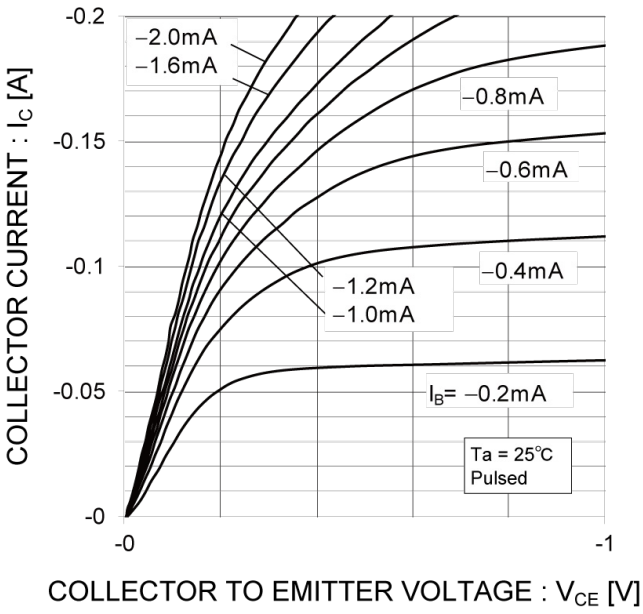


Fig.3 DC Current Gain vs. Collector Current(I)

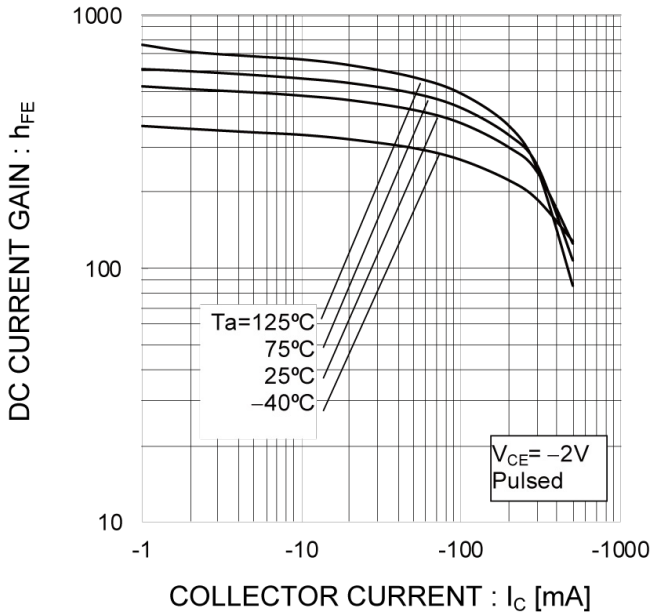
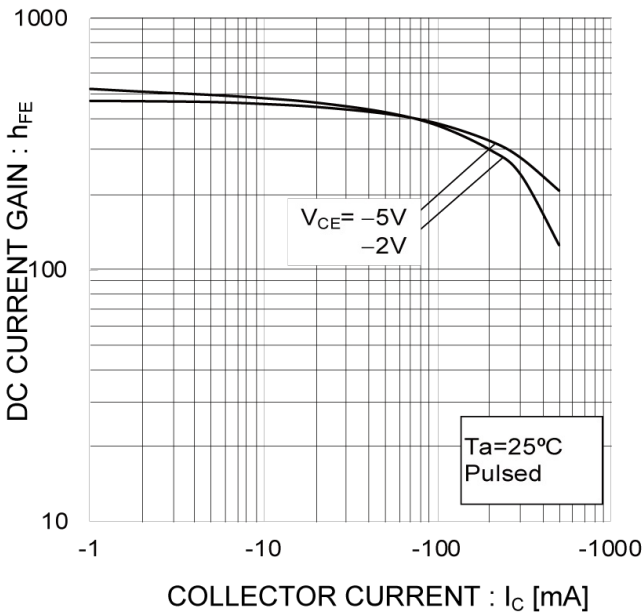


Fig.4 DC Current Gain vs. Collector Current(II)



●Electrical characteristic curves(T_a = 25°C)

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current(I)

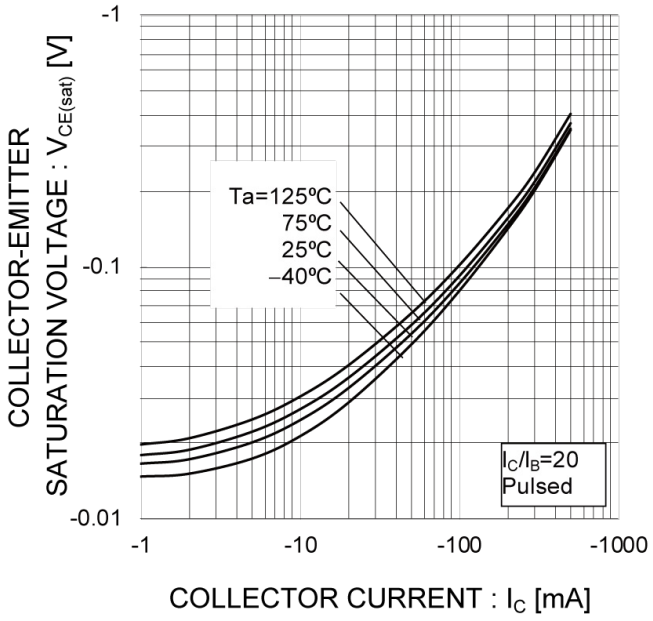


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current(II)

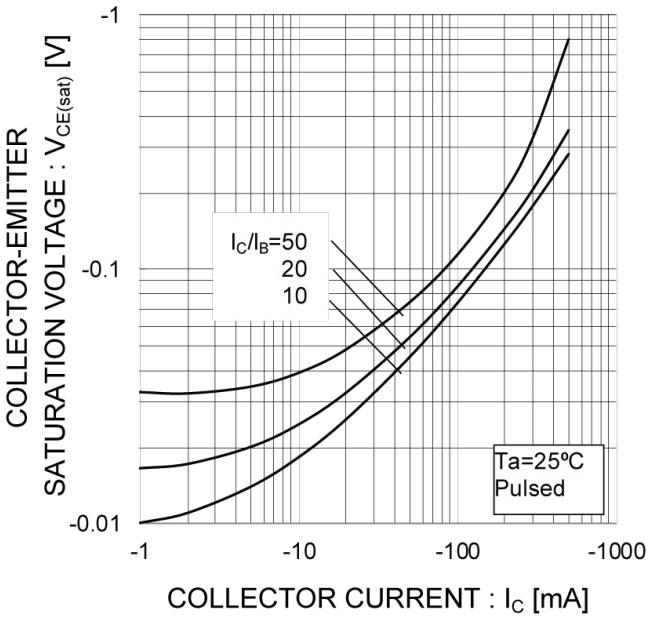


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

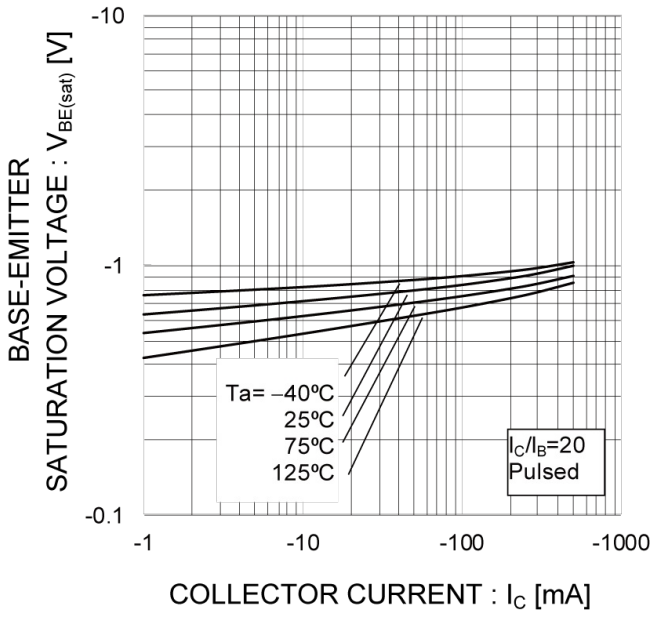
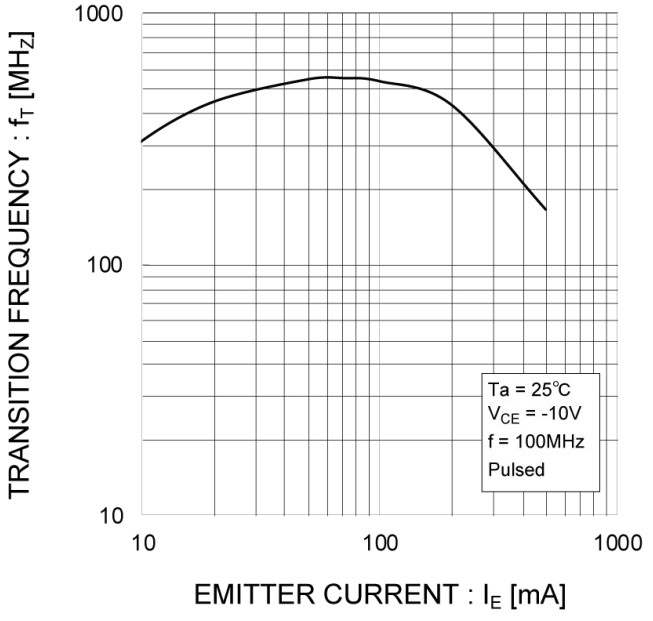


Fig.8 Gain Bandwidth Product vs. Emitter Current



●Electrical characteristic curves(T_a = 25°C)

Fig.9 Emitter input capacitance vs. Emitter-Base Voltage Collector output capacitance vs. Collector-Base Voltage

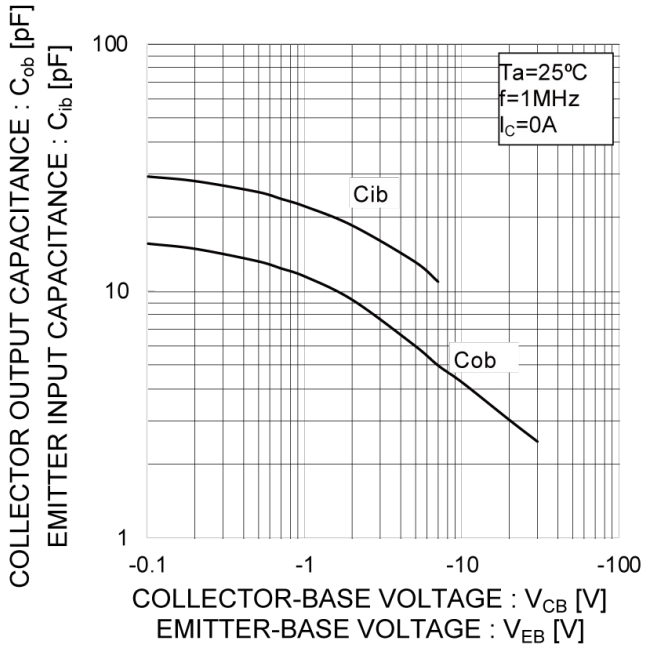
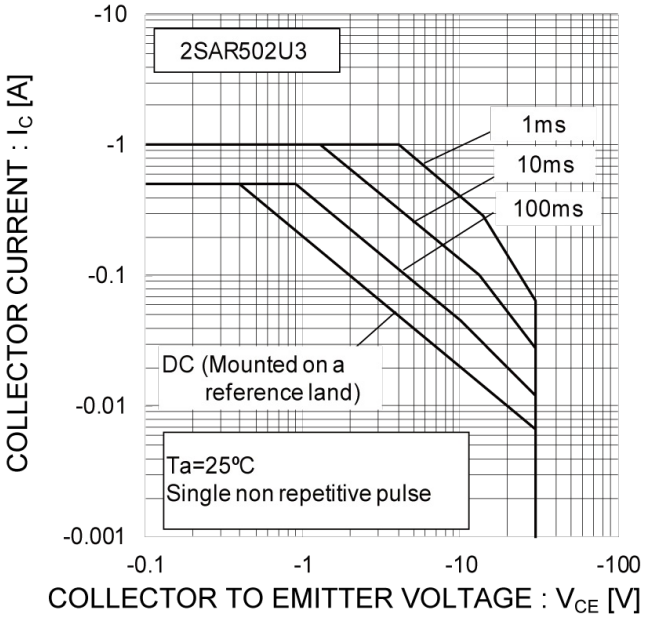
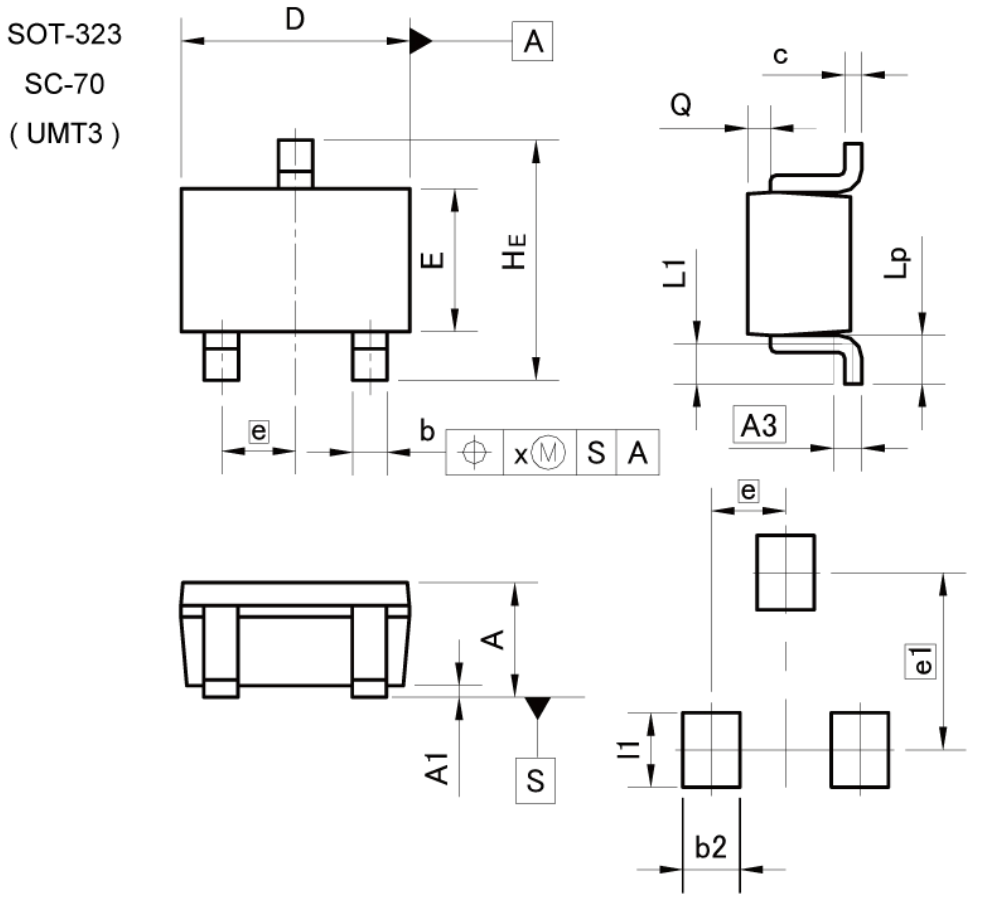


Fig.10 Safe Operating Area



●Dimensions

SOT-323
SC-70
(UMT3)



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

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0	0.004
A3	0.25		0.01	
b	0.25	0.40	0.01	0.016
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.03	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.02
Lp	0.25	0.55	0.01	0.022
Q	0.10	0.30	0.004	0.012
x	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
e1	1.55		0.06	
b2	–	0.50	–	0.02
l1	–	0.65	–	0.026

Dimension in mm/inches

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CLASSⅢ	CLASSⅢ	CLASSⅡb	CLASSⅢ
CLASSⅣ		CLASSⅢ	

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   [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
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   [g] Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
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