2SD874A TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Large collector power dissipation P_C
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Complementary to 2SB766A

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	0.5	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃

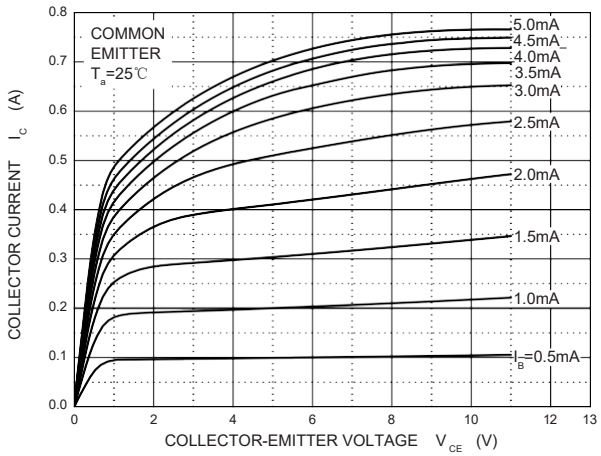
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA,I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=20V,I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=10V,I_C=500mA	85		340	
	$h_{FE(2)}$	V_{CE}=5V,I_C=1A	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA,I_B=50mA			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=500mA,I_B=50mA			1.2	V
Transition frequency	f_T	V_{CE}=10V,I_C=50mA,f=200MHz		200		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz		20		pF

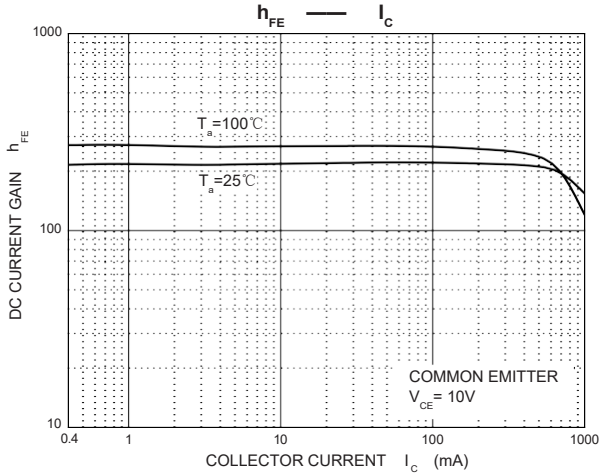
CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R	S
Range	85-170	120-240	170-340
Marking	YQ	YR	YS

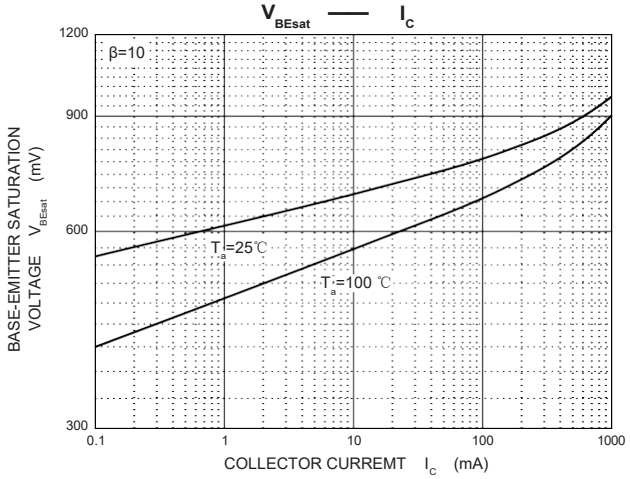
Static Characteristic



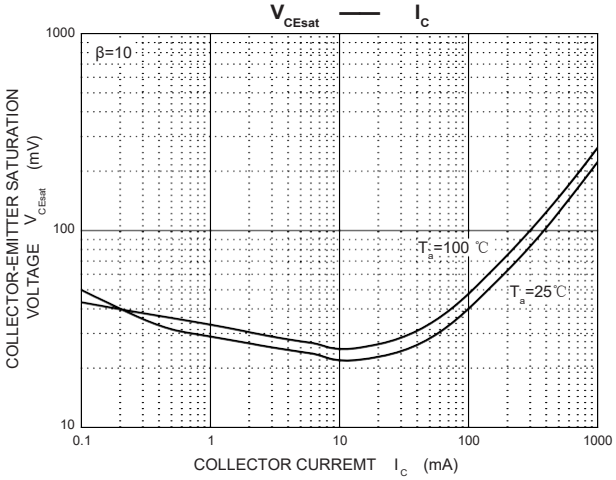
h_{FE} — I_C



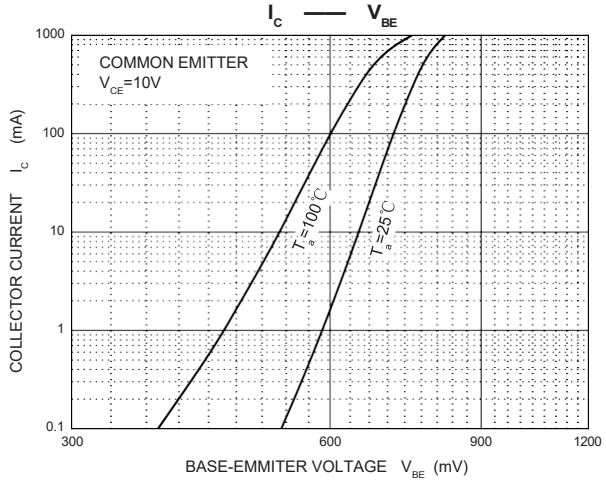
V_{BEsat} — I_C



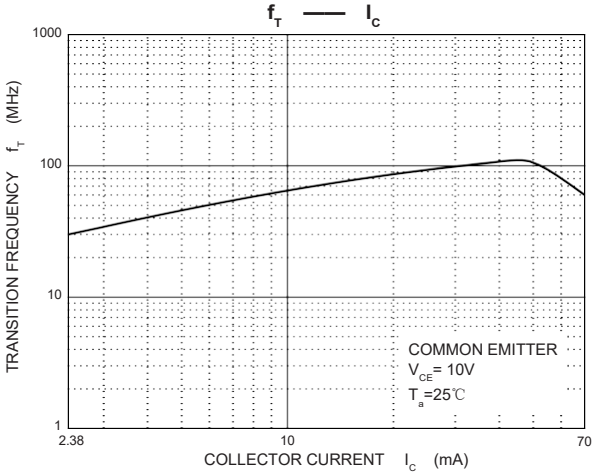
V_{CEsat} — I_C



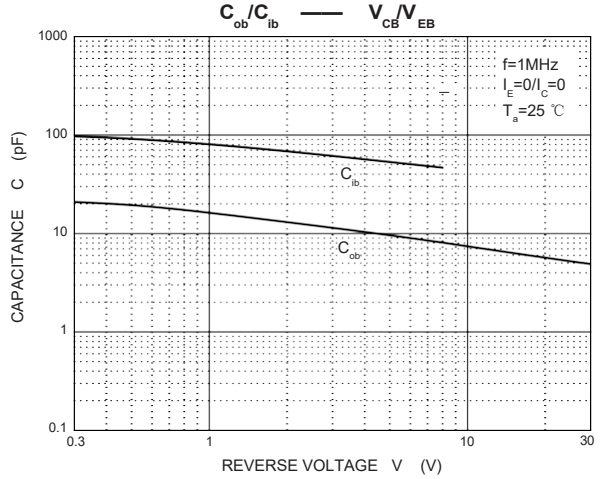
I_C — V_{BE}



f_T — I_C



C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_C — T_a