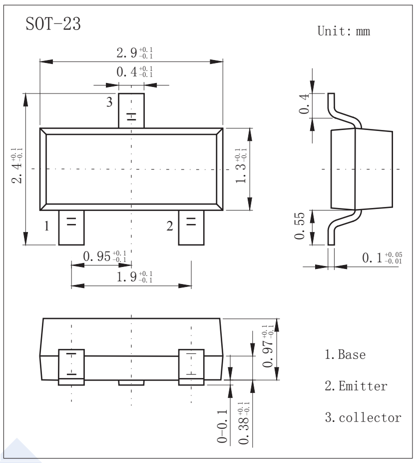
PNP Transistors

2SA1330



■ Features

- ● High DC current gain.
- ● High voltage.
- ● Complementary to 2SC3360

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-200	V
Collector-emitter voltage	V_{CEO}	-200	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-100	mA
Total power dissipation	P_T	200	mW
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= -100 μA， I_E=0	-200			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -1 mA， I_B=0	-200			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μA， I_C=0	-5			
Collector-base cut-off current	I_{CBO}	V_{CB}= -200 V , I_E=0			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= -5V , I_C=0			-100	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C=-50 mA, I_B=- 5mA		-0.21	-0.3	V
Base - emitter saturation voltage *	$V_{BE(sat)}$	I_C=-50 mA, I_B=- 5mA		-0.8	-1.2	
Base - emitter voltage *	V_{BE}	V_{CE}= -10V, I_C= -10mA	-0.6	-0.65	-0.7	
DC current gain *	h_{FE}（1）	V_{CE}= -10V, I_C= -10mA	90	200	450	
	h_{FE}（2）	V_{CE}= -10V, I_C=-50mA	50	195		
Turn-on time	t_r	V_{CC}=-10V,$V_{BE(off)}$=2.5V I_C=-10mA,I_{B1}=I_{B2}=-1.0mA		0.16		us
Storage time	t_s			1.3		
Turn-off time	t_{off}			0.18		
Collector output capacitance	C_{ob}	V_{CB}= -30V, I_E= 0,f=1MHz		3.6		pF
Transition frequency	f_T	V_{CE}= -10V, I_E= 10mA		120		MHz

* Pulse test: tp ≤ 350 us; duty cycle ≤ 0.02.

■ Classification of $h_{fe(1)}$

Type	2SA1330-O5	2SA1330-O6	2SA1330-O7
Range	90-180	135-270	200-450
Marking	O5	O6	O7

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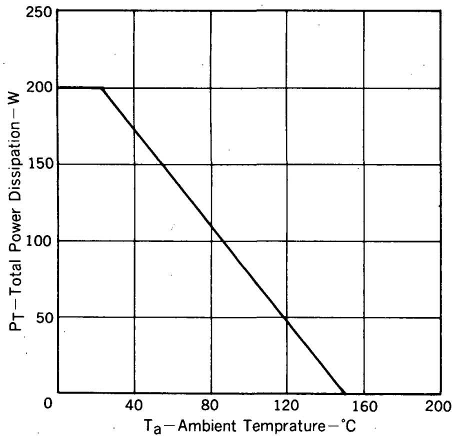
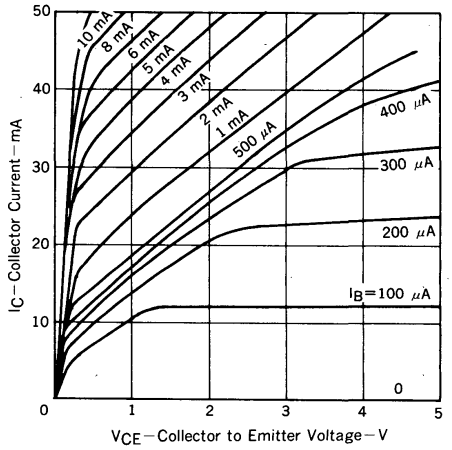
■ Typical Characterisitics

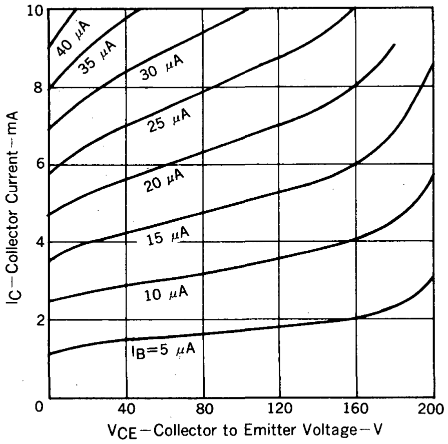
TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURE



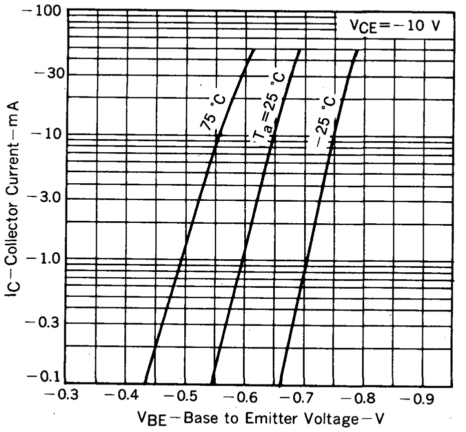
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



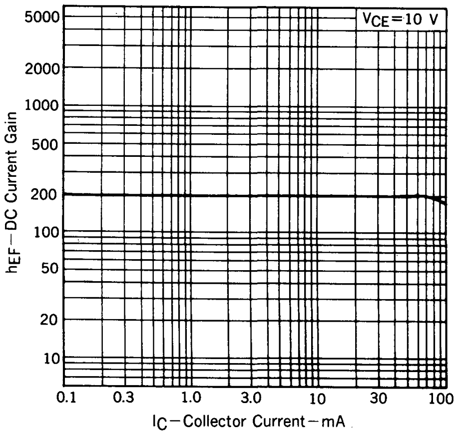
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



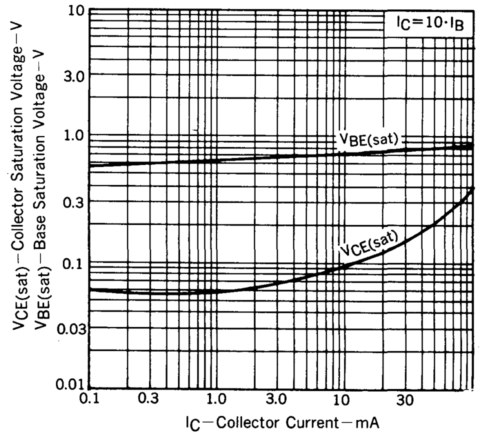
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



DC CURRENT GAIN vs.
COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs.
COLLECTOR CURRENT



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■ Typical Characterisitics