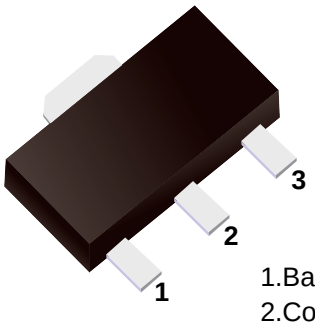
2SD965A

NPN Transistors



1.Base
2.Collector
3.Emitter

■ Simplified outline(SOT-89)

■ Features

- Low saturation voltage
- Large Collector Power Dissipation and Current

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	40	V
Collector - Emitter Voltage	V_{CEO}	30	
Emitter - Base Voltage	V_{EBO}	7	
Collector Current - Continuous	I_C	5	A
Collector Power Dissipation	P_C	750	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	167	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

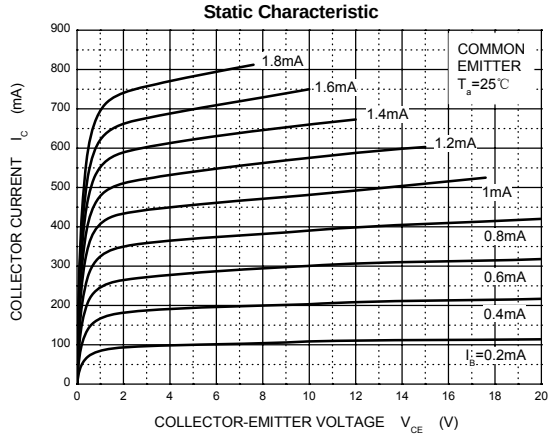
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	40			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	30			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	7			
Collector-base cut-off current	I_{CBO}	V_{CB}= 10 V , I_E= 0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 7V , I_C=0			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=3 A, I_B=100mA			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=3 A, I_B=100mA			1.2	
DC current gain	$h_{FE(1)}$	V_{CE}= 2V, I_C= 1mA		200		
	$h_{FE(2)}$	V_{CE}= 2V, I_C= 500mA	230		950	
	$h_{FE(3)}$	V_{CE}= 2V, I_C= 2A	150			
Collector output capacitance	C_{ob}	V_{CB}= 20V, I_E= 0,f=1MHz			50	pF
Transition frequency	f_T	V_{CE}= 6V, I_C= 50mA		150		MHz

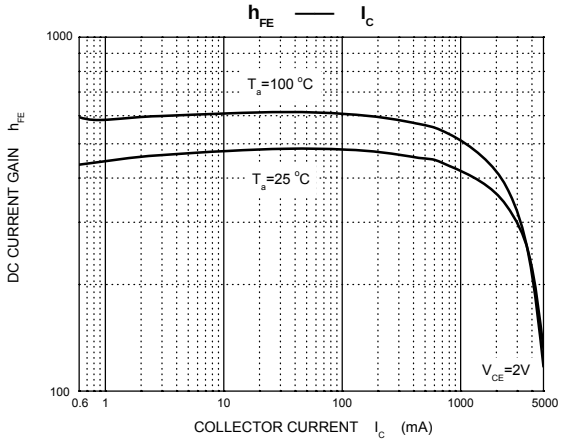
■ Classification of $h_{fe(2)}$

Type	2SD965A-Q	2SD965A-R	2SD965A-S
Range	230-380	340-600	560-800

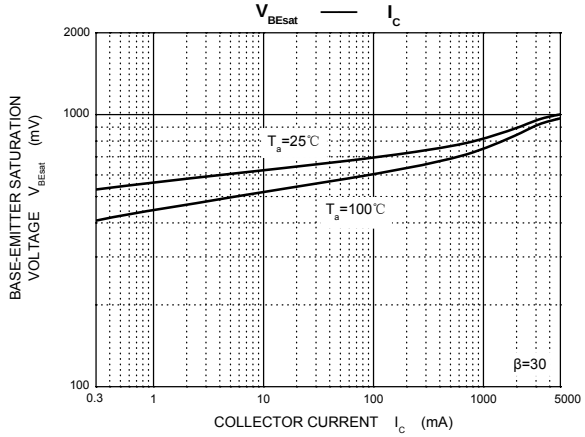
Static Characteristic



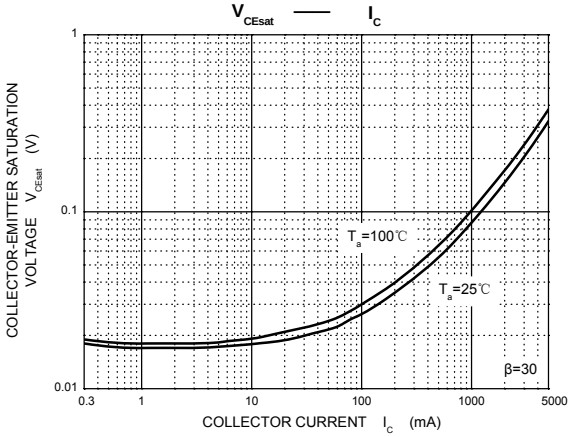
h_{FE} —— I_C



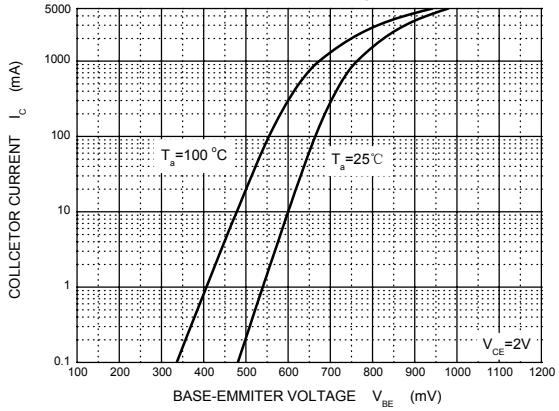
V_{BEsat} —— I_C



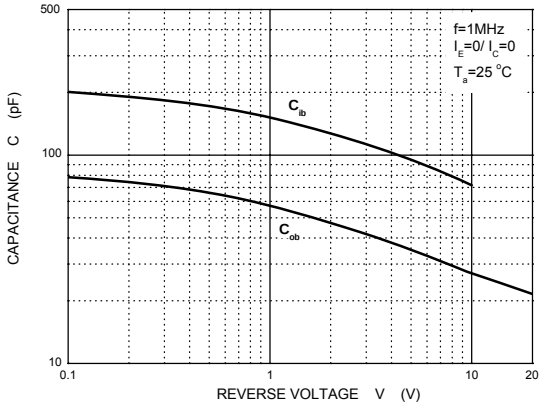
V_{CEsat} —— I_C



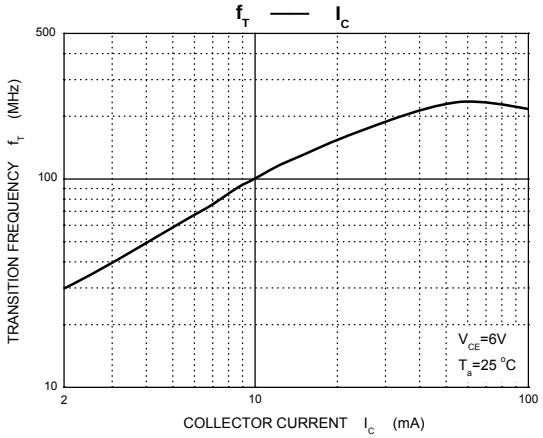
V_{BE} —— I_C



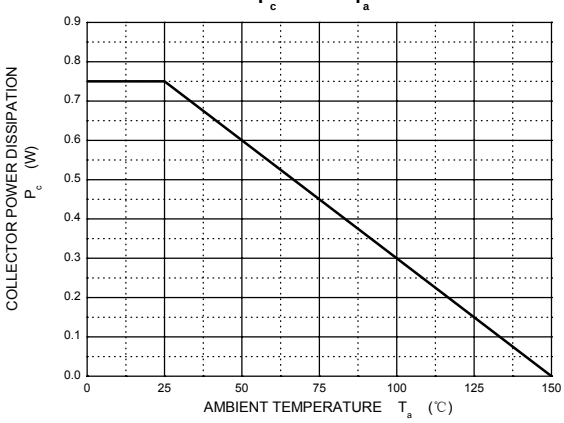
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



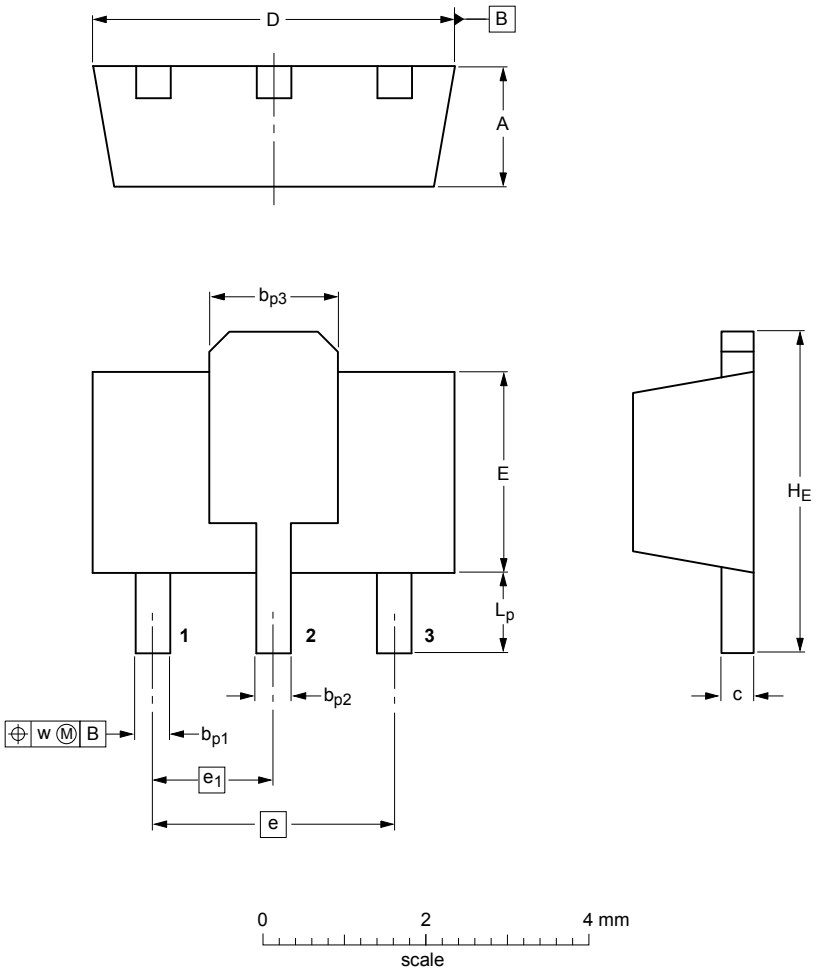
f_T —— I_C



P_c —— T_a



■ SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13