JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOT-223 Plastic-Encapsulate Transistors

BCP68 TRANSISTOR (NPN)

SOT-223

1. BASE
2. COLLECTOR
3. EMITTER

FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCP69 (PNP)

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	32	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	1	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	94	℃/W
T_{stg}	Storage Temperature Range	-65to+150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	32			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, =0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=25V,I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=1V,I_C=500mA	85		375	
	$h_{FE(2)}$	V_{CE}=1V,I_C=1A	60			
	$h_{FE(3)}$	V_{CE}=10V,I_C=5mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1A,I_B=100mA			0.5	V
Base-emitter voltage	V_{BE1}	V_{CE}=10V,I_C=5mA			0.68	V
	V_{BE2}	V_{CE}=1V,I_C=1A			1	V
Transition frequency	f_T	V_{CE}=5V,I_C=10mA,f=100MHz	40			MHz
Collector output capacitance	C_{ob}	V_{CB}=5V,I_E=0,f=1MHz		38		pF

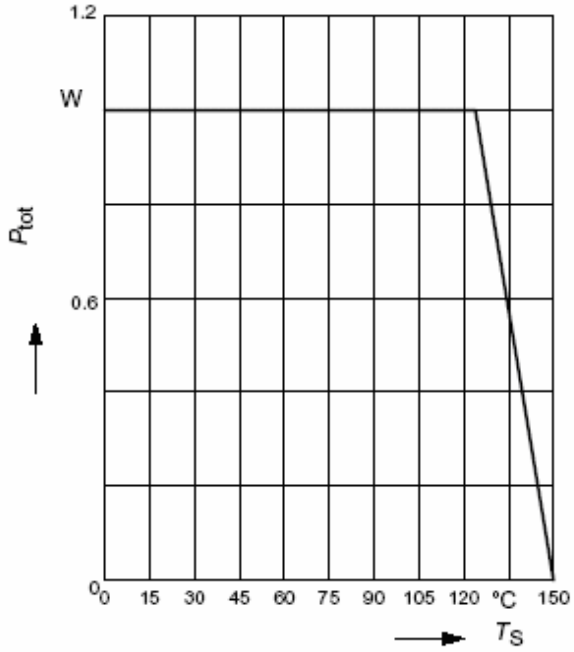
CLASSIFICATION OF $h_{FE(1)}$

Rank	BCP68-10	BCP68-16	BCP68-25
Range	85-160	100-250	160-375

Typical Characteristics

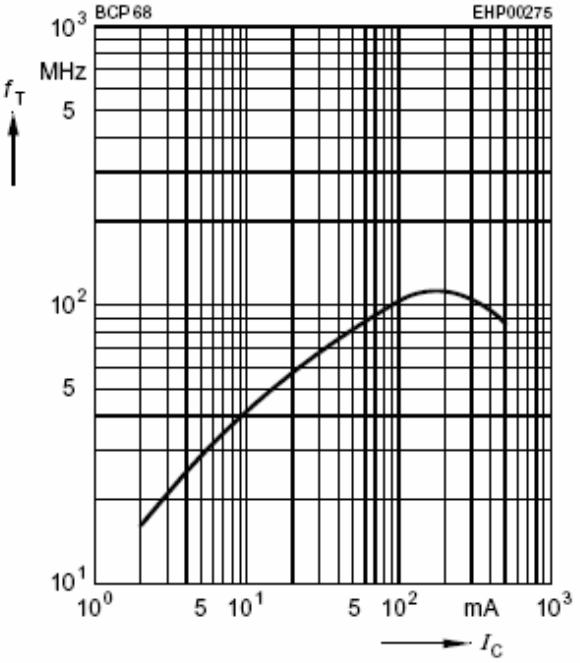
BCP68

Total power dissipation $P_{tot} = f(T_S)$



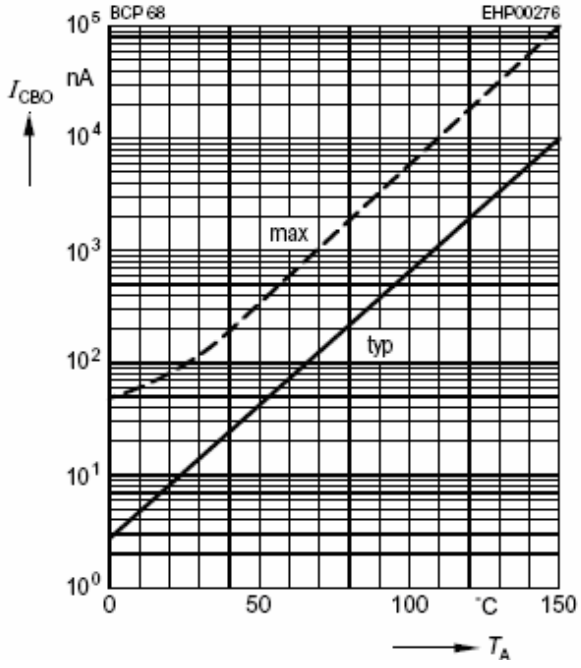
Transition frequency $f_T = f(I_C)$

V_{CE} = 5V



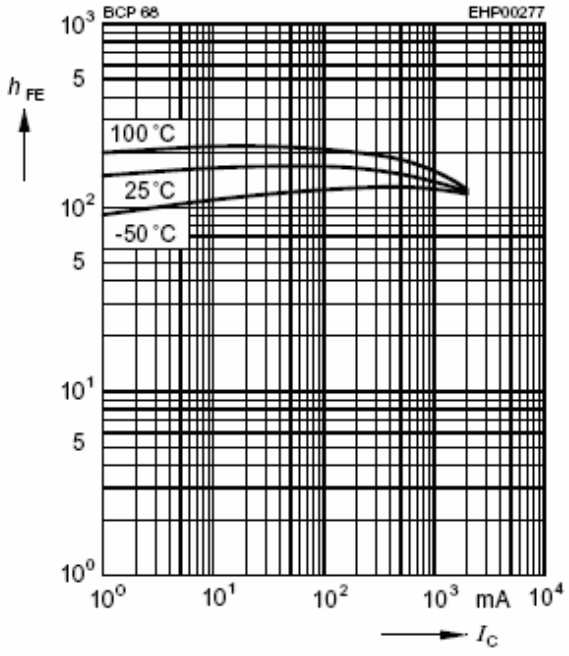
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CB} = 25V



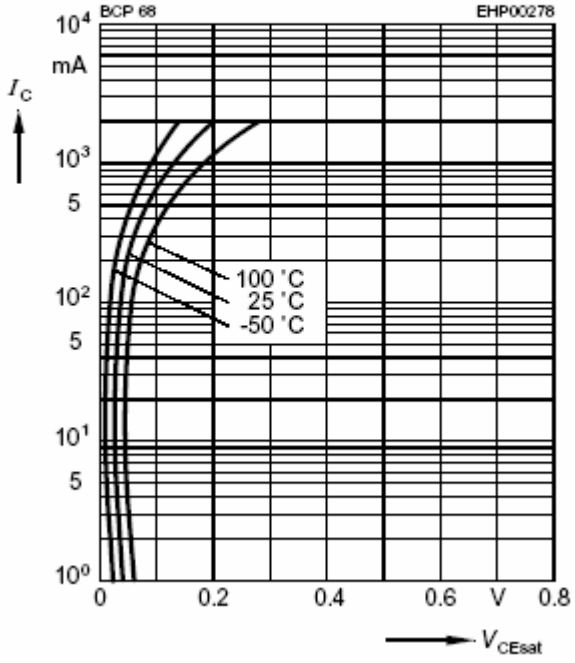
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 1V



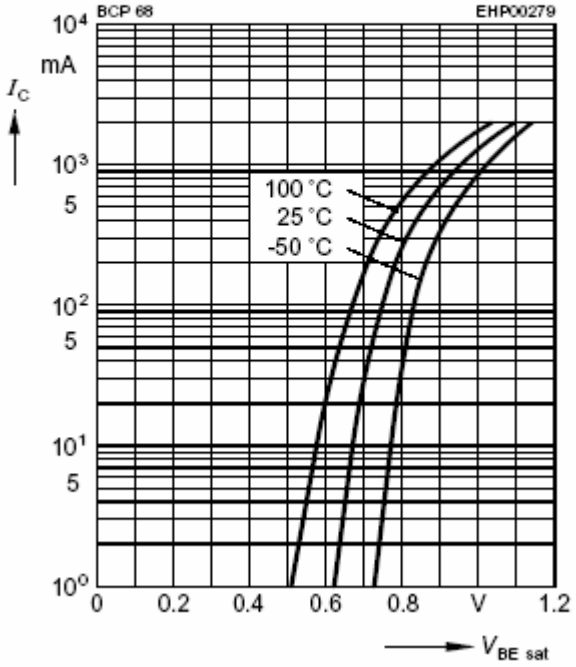
Collector-emitter saturation voltage

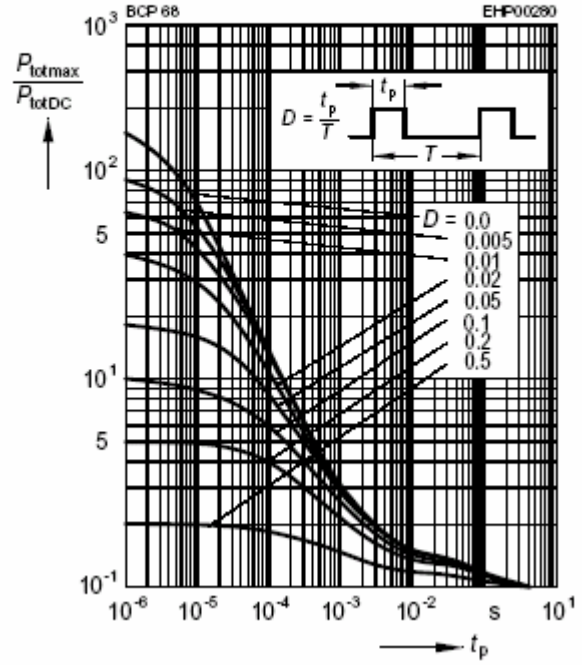
$I_C = f(V_{CEsat})$, $h_{FE} = 10$



Base-emitter saturation voltage

$I_C = f(V_{BEsat})$, $h_{FE} = 10$



Permissible pulse load

$P_{totmax} / P_{totDC} = f(t_p)$