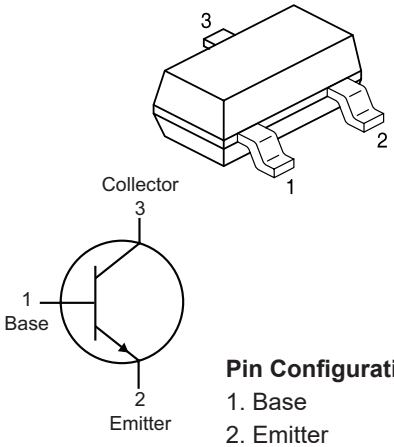
Bipolar Single Transistor
NPN



Pin Configuration:
1. Base
2. Emitter
3. Collector

Features

- For general AF applications
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BCW67, BCW68 (PNP)

Applications

- General purpose medium power amplifier
- Switching application

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector - Base Voltage	V_{CBO}	45	V
Collector - Emitter Voltage	V_{CEO}	75	
Emitter - Base Voltage	V_{EBO}	5	
DC Collector Current	I_C	-1	A
Collector Current Continuous	I_C	800	mA
Collector Dissipation	P_C	330	mW
Junction and Storage Temperature	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	75			V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	45			
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	5			
Collector Cut-Off Current	I_{CBO}	V_{CB}=45V, I_E=0			20	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V, I_C=0			20	
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=100μA	50 80	-	-	-
		V_{CE}=1V, I_C=10mA	120 180	-	-	
		V_{CE}=1V, I_C=100mA	160 250	-	400 630	

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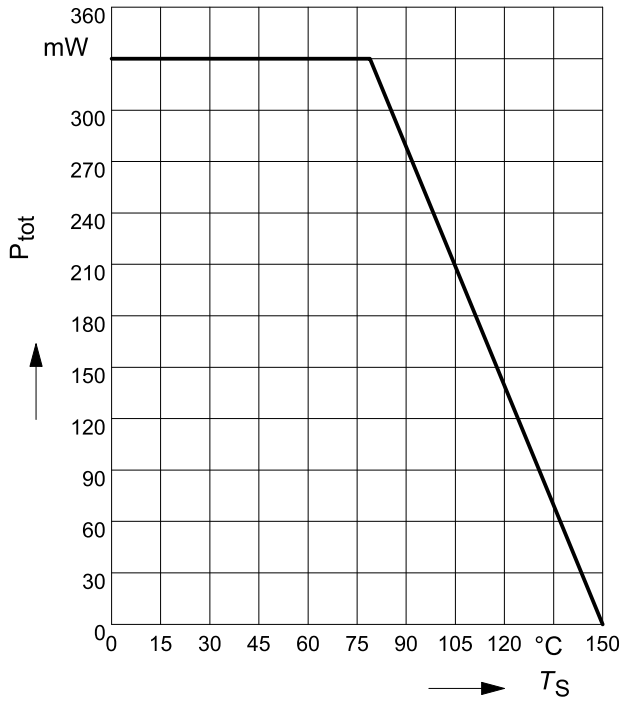
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=10mA I_C=-500mA, I_B=50mA	-	-	0.3 0.7	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA I_C=500mA, I_B=50mA	-	-	1.25 2	
Transition Frequency	f_T	V_{CE}=5V, I_C=50mA f=20MHz	-	170	-	MHz

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	330	mW
Thermal Resistance Junction-to-Air *	$R_{\theta JA}$	395	°C/W
Thermal Resistance Junction-to-Case *	$R_{\theta JC}$	218	°C/W
Thermal Resistance Junction-to-Lead *	$R_{\theta JL}$	191	°C/W
Operating Junction temperature	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}		

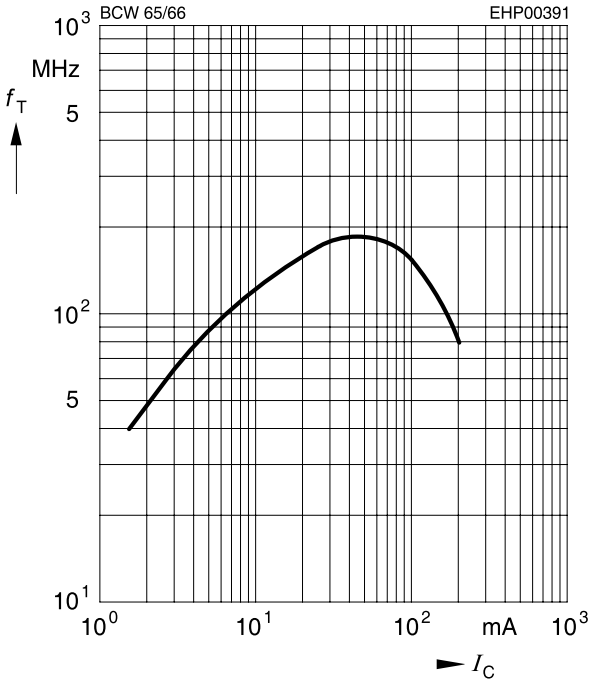
Note: * The data tested by surface mounted on a 15mm×15mm×1mm FR4-epoxy P.C.B

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



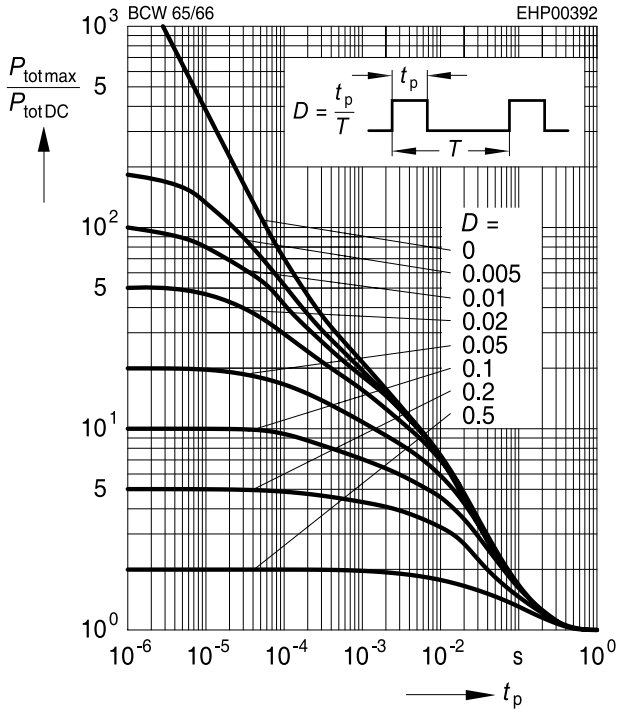
Transition frequency $f_T = f(I_C)$

V_{CE} = 5V



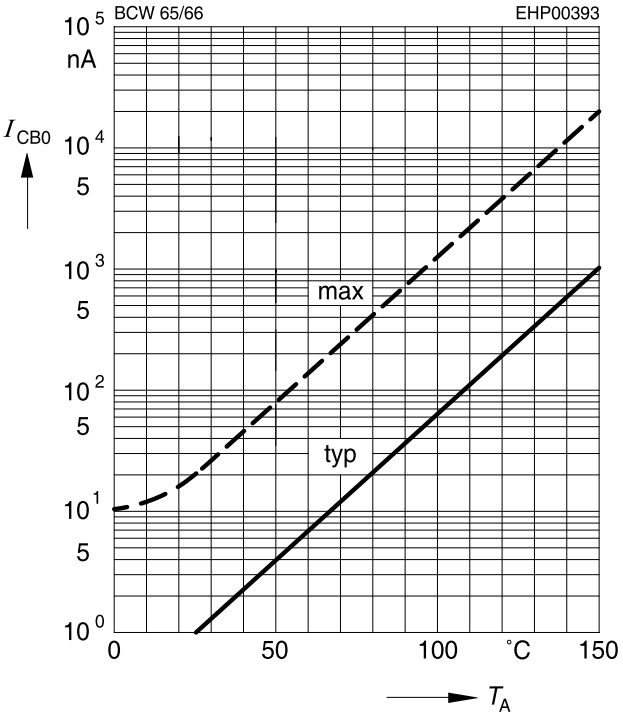
Permissible pulse load

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



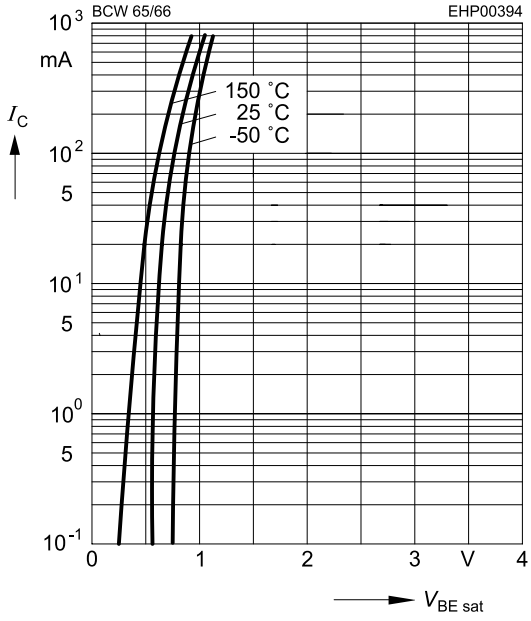
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = V_{CEmax}$



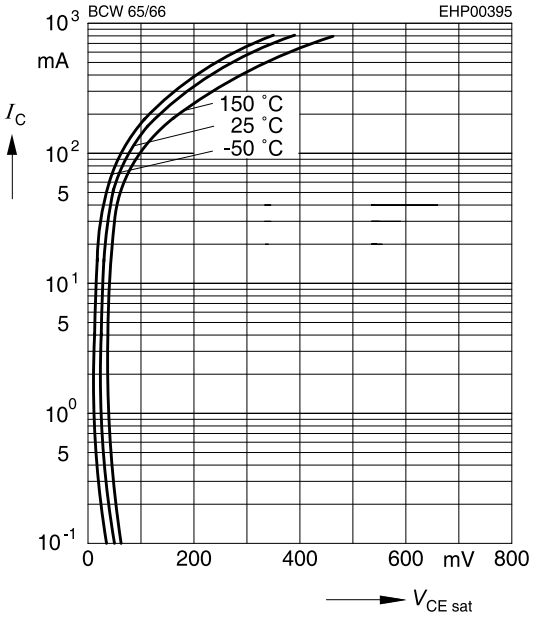
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



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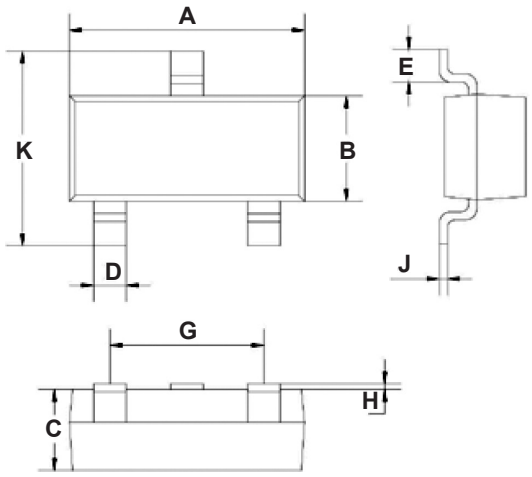
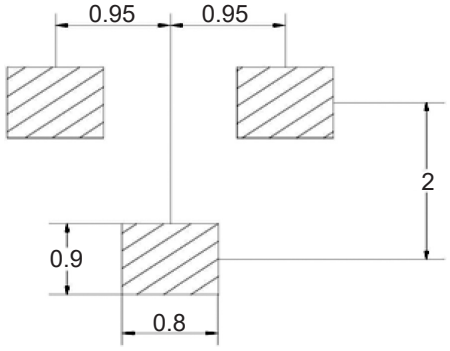
Package Outline

Plastic Surface Mounted Package



Dimensions	Min.	Max.
A	2.85	2.95
B	1.25	1.35
C	1 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45

Soldering Footprint



Part Number Table

Description	Part Number
Transistor, NPN, 0.8A, 45V, SOT-23	BCW66H

Dimensions : Millimetres