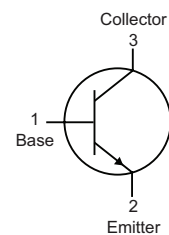
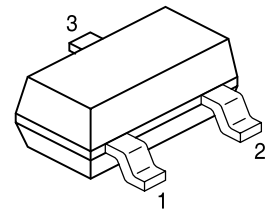


# Silicon Epitaxial Planar Transistor



## Features:

- For AF input stages and driver applications
- High current gain
- Low collector-emitter saturation voltage
- Low noise between 30Hz and 15kHz
- Complementary types: BCX71

## Applications:

- General purpose transistor

## Pin Configuration:

1. Base
2. Emitter
3. Collector

## Maximum Ratings

Parameter	Symbol	Value	Unit
Collector - Base Voltage	$V_{CBO}$	45	V
Collector - Emitter Voltage	$V_{CEO}$	45	
Emitter - Base Voltage	$V_{ebo}$	5	
DC Collector Current	$I_C$	100	mA
Collector Current - Peak	$I_{CM}$	200	mA
Peak Base Current	$I_{BM}$	200	
Collector Dissipation	$P_{TOT}$	350	mW
Junction and Storage Temperature	$T_j, T_{stg}$	-65 to +150	°C

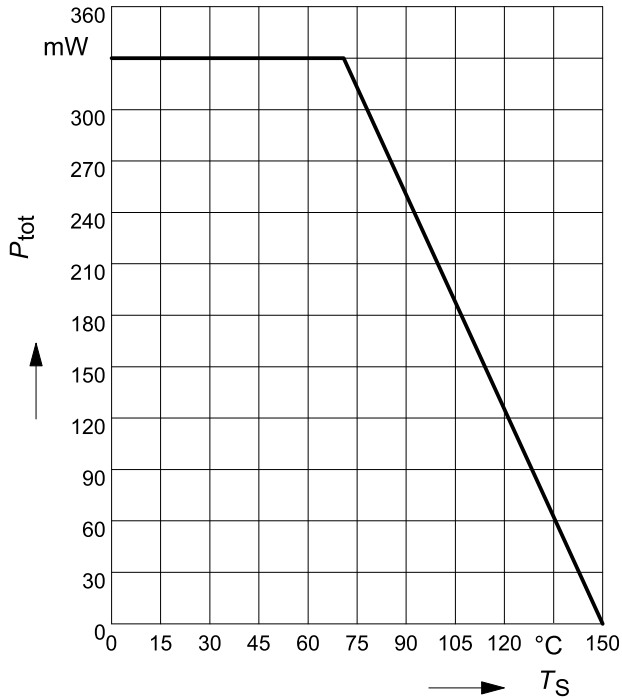
# Silicon Epitaxial Planar Transistor

## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

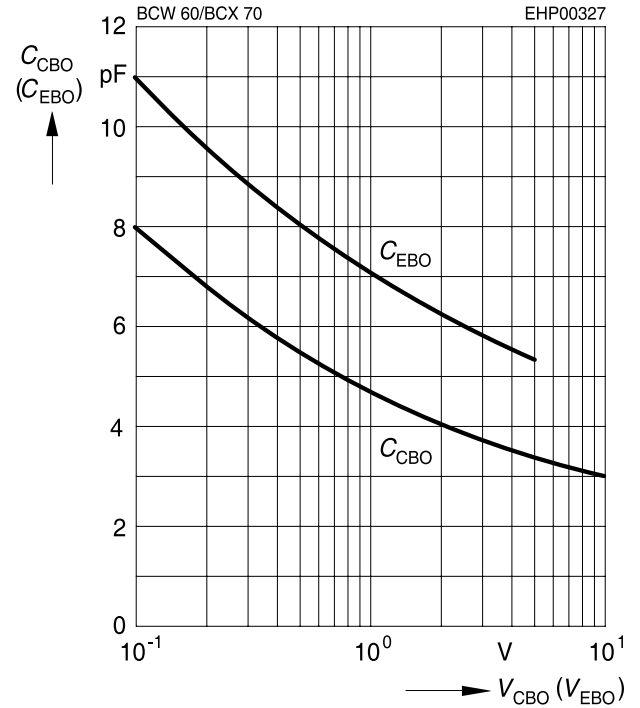
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	45			V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	45			
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -1\mu\text{A}, I_C = 0$	5			
Collector Cut-Off Current	$I_{CBO}$	$V_{CE} = -45\text{V}, V_{BE} = 0$			20	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$	H	20	140	
			J	40	200	
		$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	H	180	300	
			J	250	460	
		$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	H	70	630	
			J	90		
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.25\text{mA}$ $I_C = 50\text{mA}, I_B = 1.25\text{mA}$		0.12 0.2	0.35 0.55	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.25\text{mA}$ $I_C = 50\text{mA}, I_B = 1.25\text{mA}$		0.7 0.83	0.85 1.05	
Base Emitter Voltage	$V_{BE}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	0.55	0.65	0.72	
Transition Frequency	$f_T$	$V_{CE} = 5\text{V}, I_C = 20\text{mA},$ $f = 100\text{MHz}$		250		MHz
Collector-base capacitance	$C_{cb}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		3		pF
Emitter-base capacitance	$C_{Eb}$	$V_{EB} = 0.5\text{V}, I_E = 0, f = 1\text{MHz}$		8		
Noise figure	NF	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}$ $f = 1\text{kHz}, R_S = 1\text{k}\Omega$		2		dB

# Silicon Epitaxial Planar Transistor **multicomp**

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

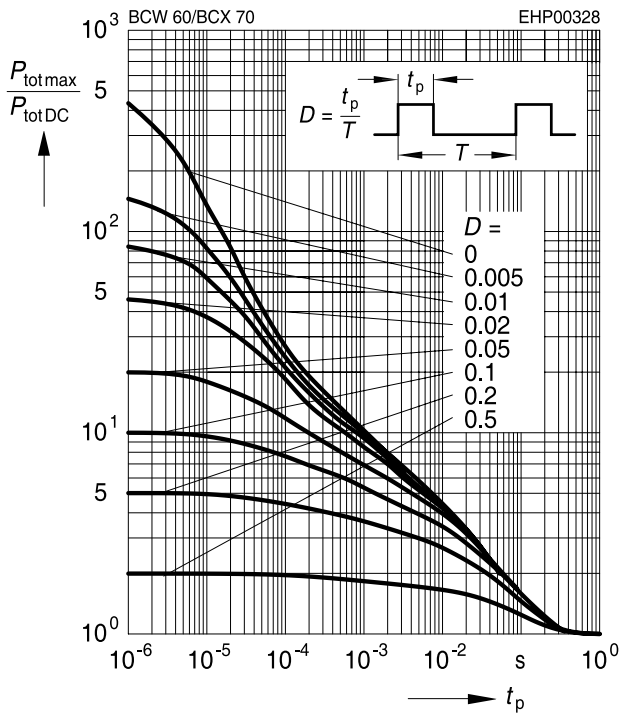


Collector-base capacitance  $C_{CB} = f(V_{CBO})$   
Emitter-base capacitance  $C_{EB} = f(V_{EBO})$



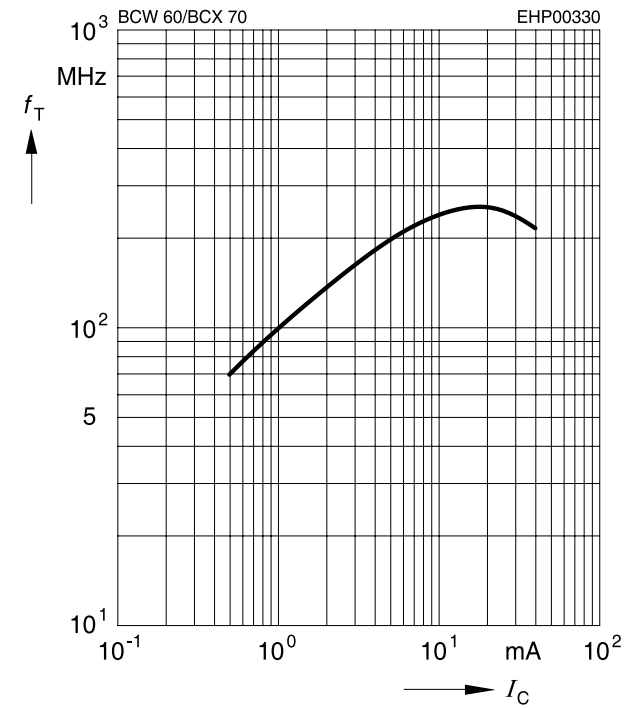
Permissible pulse load

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



Transition frequency  $f_T = f(I_C)$

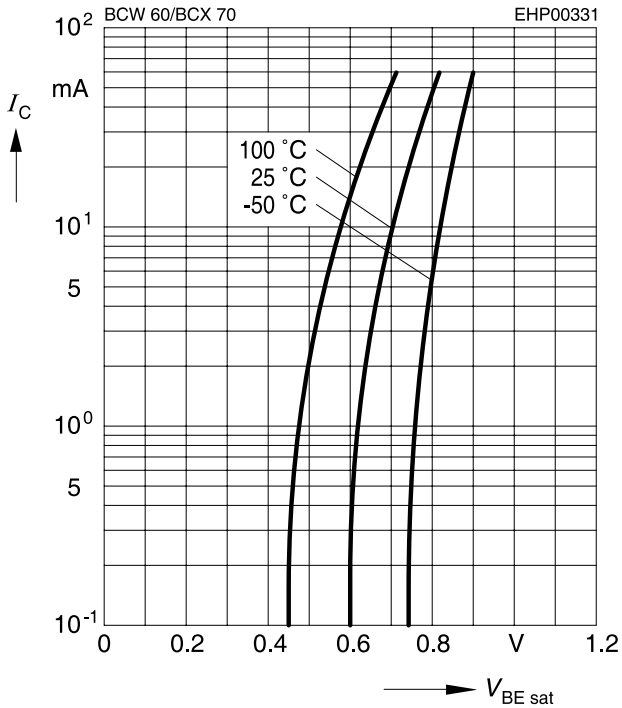
$V_{CE} = 5V$



# Silicon Epitaxial Planar Transistor **multicomp**

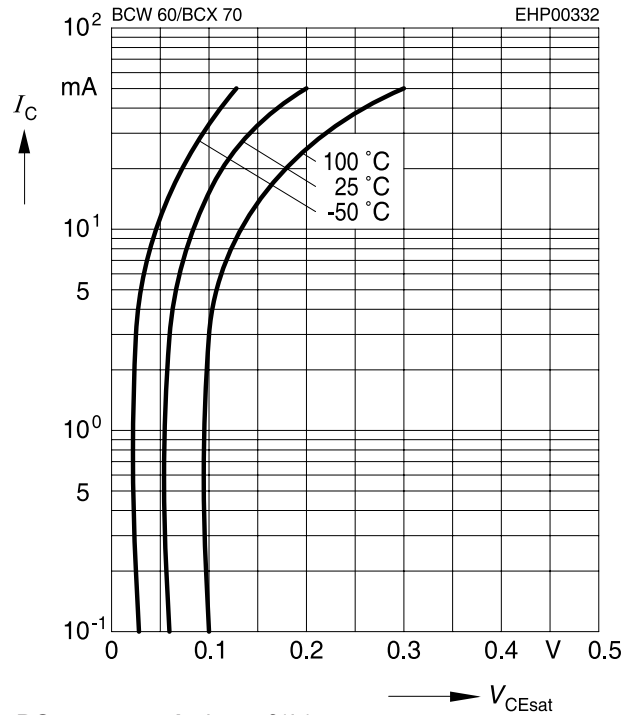
## Base-emitter saturation voltage

$$I_C = f(V_{BEsat}), h_{FE} = 40$$



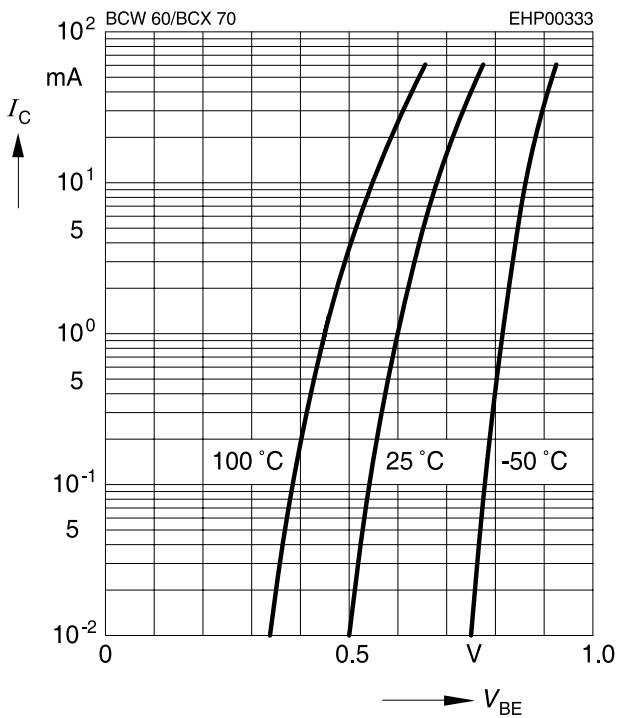
## Collector-emitter saturation voltage

$$I_C = f(V_{CEsat}), h_{FE} = 40$$



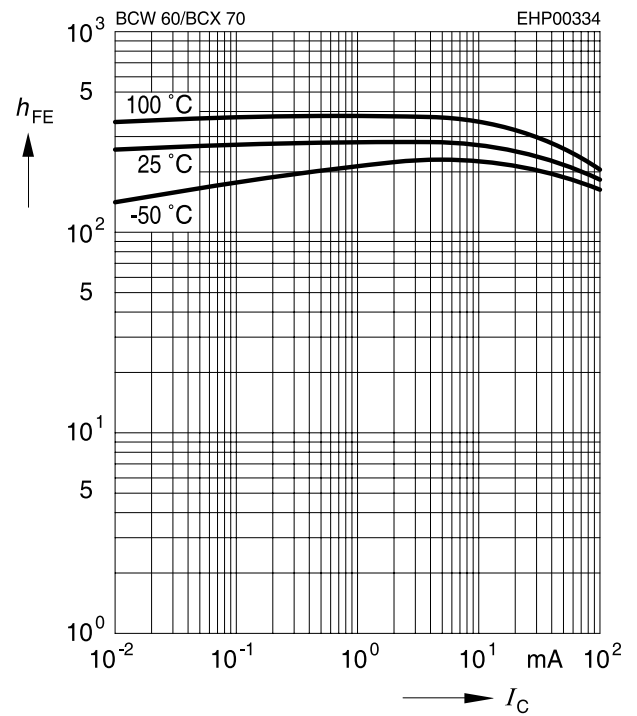
## Collector current $I_C = f(V_{BE})$

$$V_{CE} = 5V$$



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

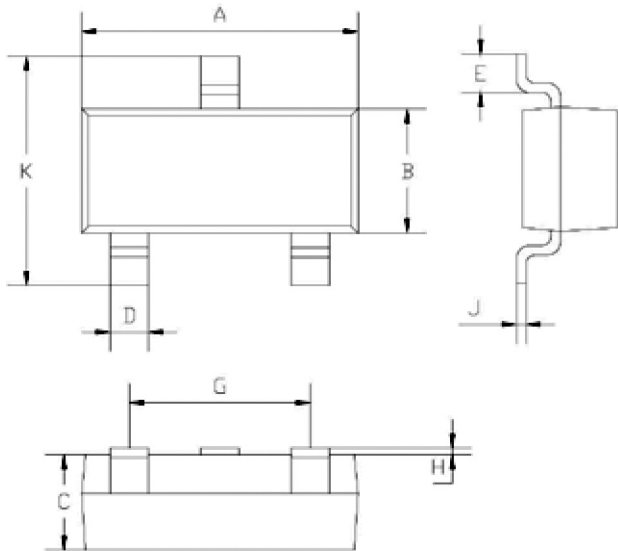
$$V_{CE} = 5V$$



# Silicon Epitaxial Planar Transistor

## Package Outline

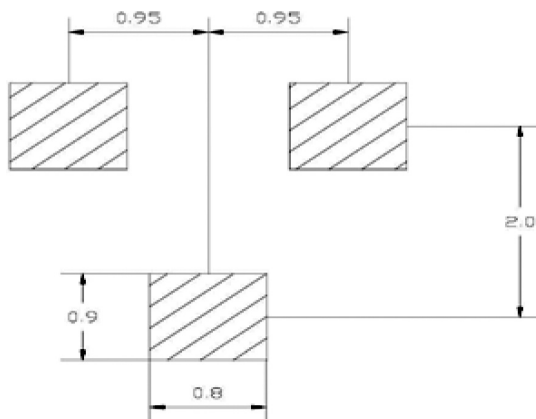
Plastic surface mounted package



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

Dimensions : Millimetres

## Soldering Footprint



Dimensions : Millimetres

## Part Number Table

Description	Part Number
Transistor, NPN, 0.1A, 45V, SOT-23	BCX70H
Transistor, NPN, 0.1A, 45V, SOT-23	BCX70J

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