

## PNP Silicon Epitaxial Planar Transistor

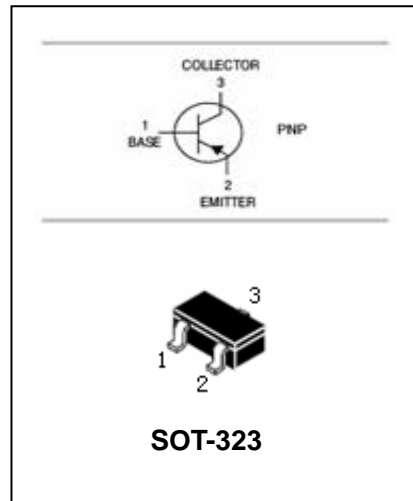
### BC856W/BC857W/BC858W

#### FEATURES

- For AF input stages and driver applications.
- High current gain.
- Low collector-emitter saturation voltage.
- Low noise between 30Hz and 15 kHz.
- Complementary types:BC846W,BC847W,BC848W.



Lead-free



#### APPLICATIONS

- General purpose switching and amplification application.

#### ORDERING INFORMATION

Type No.	Marking	Package Code
BC856W	3A/3B	SOT-323
BC857W	3E/3F/3G	SOT-323
BC858W	3J/3K/3L	SOT-323

#### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	BC856W	-80
		BC857W	-50
		BC858W	-30
V <sub>CEO</sub>	Collector-Emitter Voltage	BC856W	-65
		BC857W	-45
		BC858W	-30
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-100	mA
I <sub>CM</sub>	Peak Collector current	-200	mA
I <sub>BM</sub>	Peak Base current	-200	mA
P <sub>C</sub>	Collector Dissipation	200	mW
T <sub>j</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-65 to +150	°C

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#### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

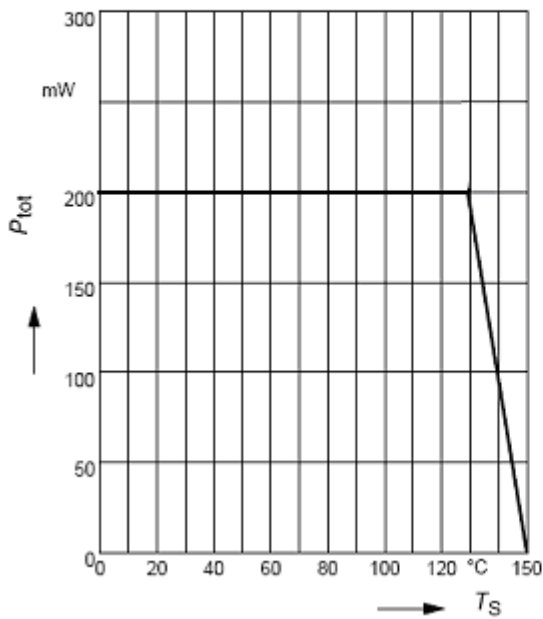
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$ BC856W BC857W BC858W	-80 -50 -30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$ BC856W BC857W BC858W	-65 -45 -30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\mu A, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -30V, I_E = 0$			-15	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = -5V, I_C = -10\mu A$ BC856AW, BC857AW BC856BW, BC857BW, BC858BW BC857CW, BC858CW		140 250 480		
		$V_{CE} = -5V, I_C = -2mA$ BC856AW, BC857AW BC856BW, BC857BW, BC858BW BC857CW, BC858CW	125 220 420	180 290 520	250 475 800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10mA, I_B = -0.5mA$ $I_C = -100mA, I_B = -5mA$		-0.075 -0.25	-0.3 -0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10mA, I_B = -0.5mA$ $I_C = -100mA, I_B = -5mA$		-0.7 -0.85		V
Base-emitter voltage	$V_{BE(on)}$	$I_C = -2mA, V_{CE} = 5V$ $I_C = -10mA, V_{CE} = 5V$	-0.6		-0.75 -0.82	V
Transition frequency	$f_T$	$V_{CE} = -5V, I_C = -20mA, f = 100MHz$		250		MHz
Collector-base capacitance	$C_{cb}$	$V_{CB} = -10V, f = 1MHz$		3	5	pF
Emitter-base capacitance	$C_{eb}$	$V_{EB} = -0.5V, f = 1MHz$		10	15	pF

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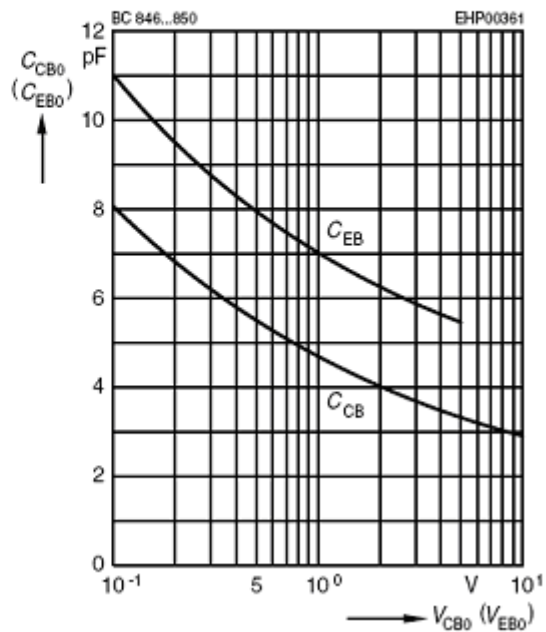
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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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

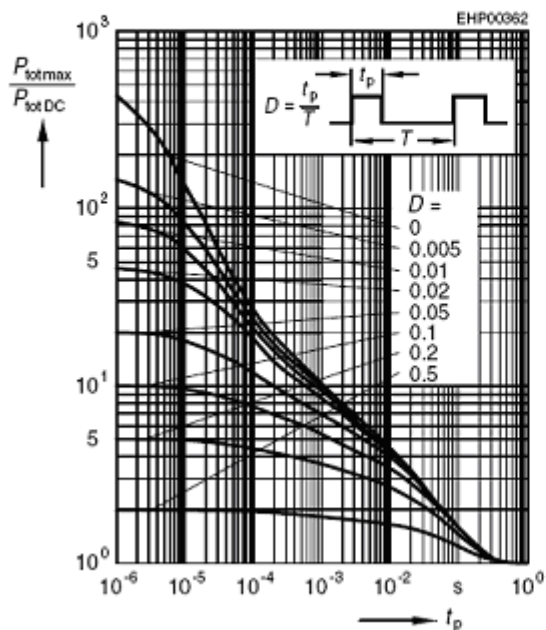


Collector-base capacitance  $C_{CB} = f(V_{CB0})$   
 Emitter-base capacitance  $C_{EB} = f(V_{EB0})$



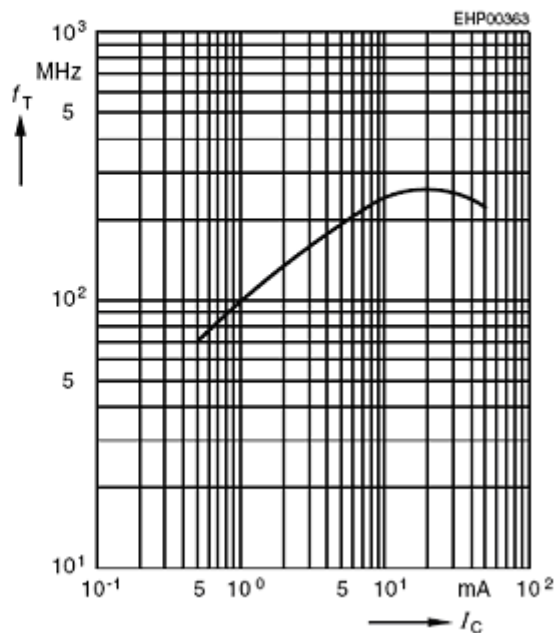
Permissible pulse load

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



Transition frequency  $f_T = f(I_C)$

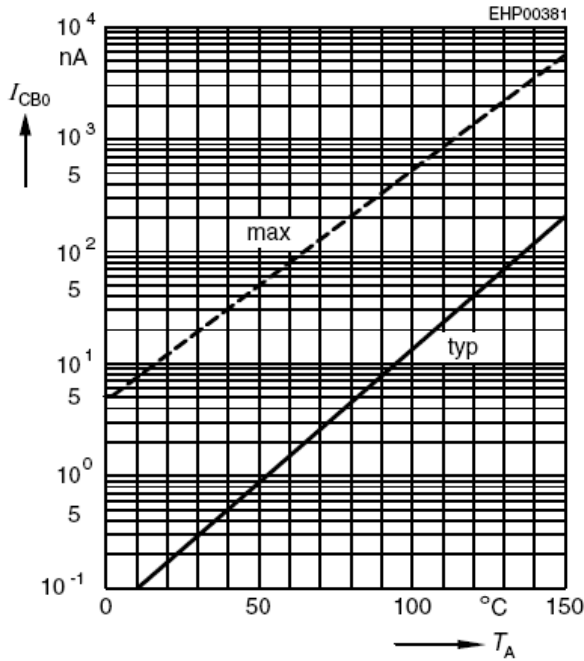
$V_{CE} = 5V$



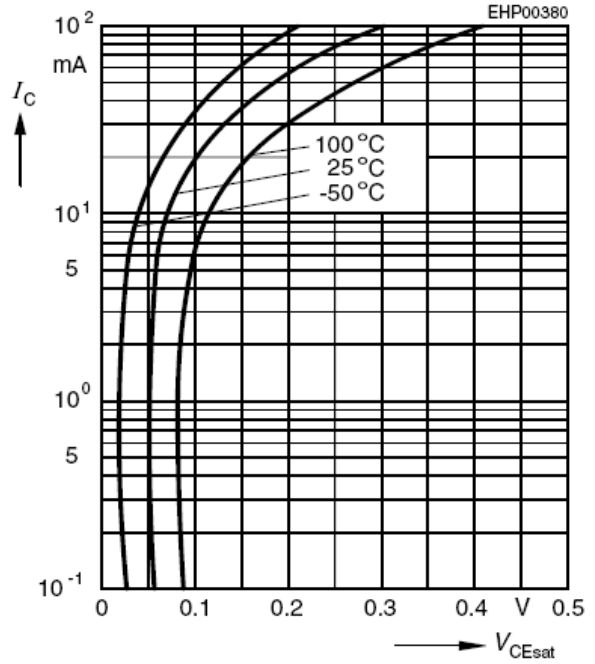
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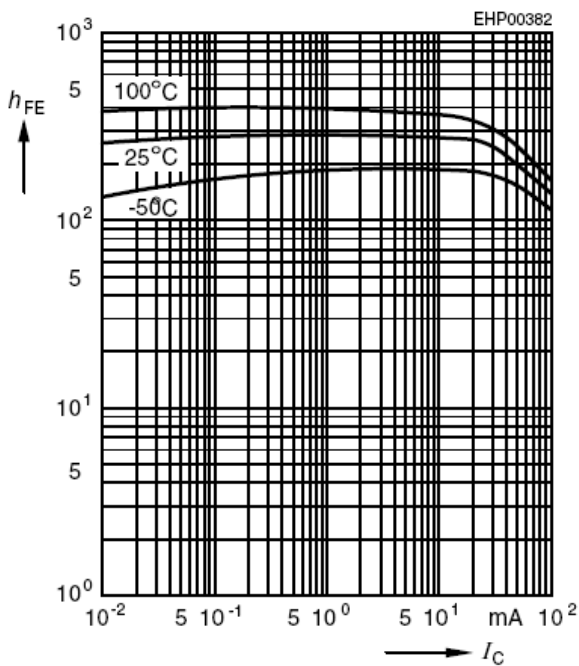
Collector cutoff current  $I_{CBO} = f(T_A)$   
 $V_{CB} = 30V$



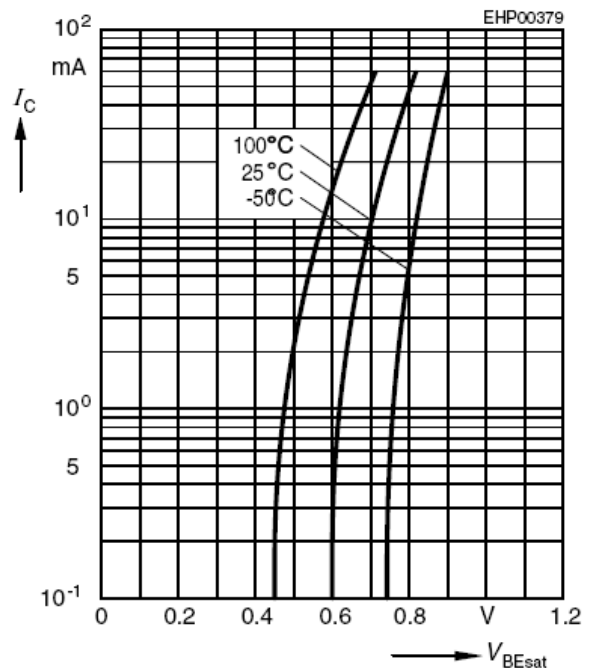
Collector-emitter saturation voltage  
 $I_C = f(V_{CEsat}), h_{FE} = 20$



DC current gain  $h_{FE} = f(I_C)$   
 $V_{CE} = 5V$



Base-emitter saturation voltage  
 $I_C = f(V_{BEsat}), h_{FE} = 20$



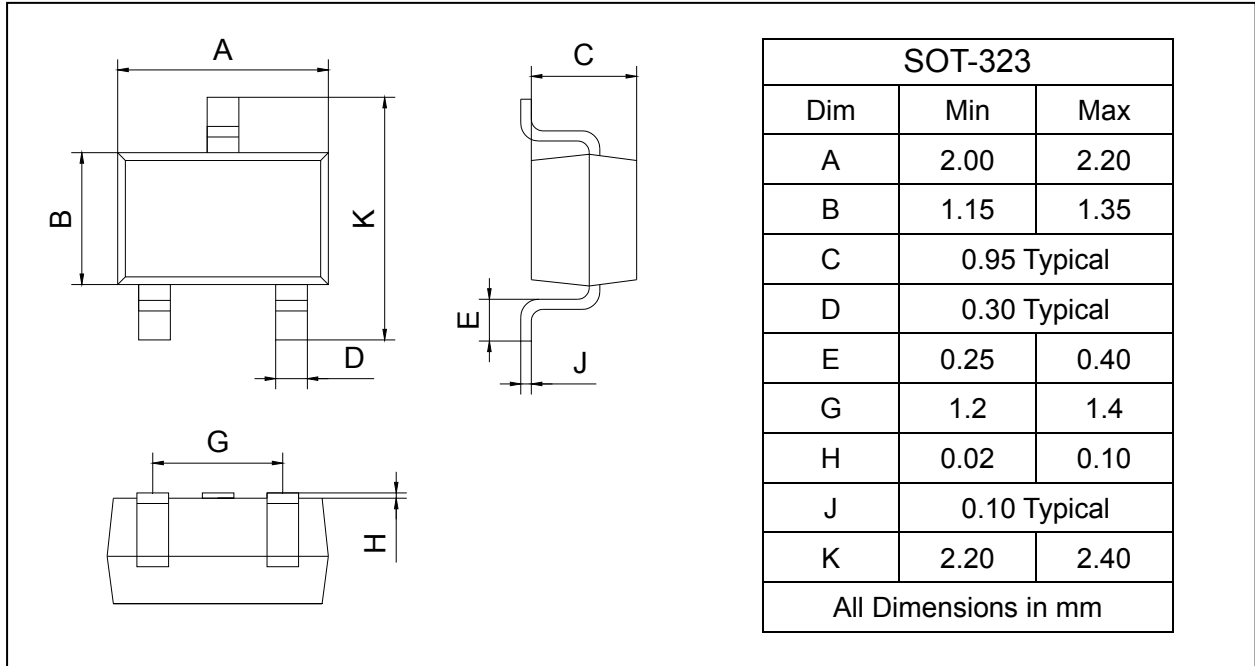
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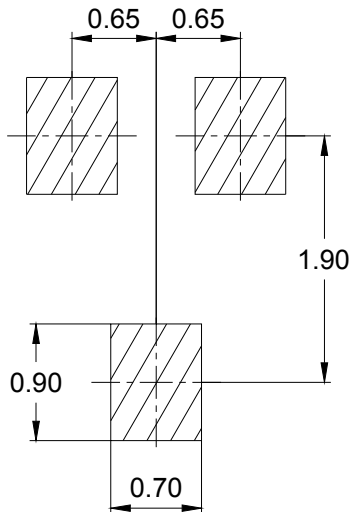
#### PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



#### SOLDERING FOOTPRINT



Unit : mm

#### PACKAGE INFORMATION

Device	Package	Shipping
BC856W/BC857W/BC858W	SOT-323	3000/Tape&Reel