

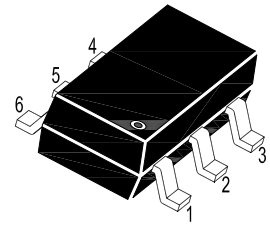
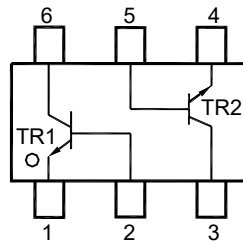
BC846DW-AH

NPN Silicon Epitaxial Planar Transistor

for general purpose and switching applications

Features

- AEC-Q101 Qualified
- Halogen and Antimony Free(HAF),
RoHS compliant



TR1: 1. Emitter 2. Base 6. Collector
TR2: 3. Collector 4. Emitter 5. Base
SOT-363 Plastic Package

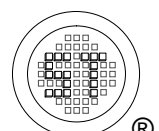
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	80	V
Collector Emitter Voltage	V_{CEO}	65	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Total Power Dissipation	P_{tot}	250	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance - Junction to Ambient ¹⁾	$R_{\theta JA}$	500	$^\circ\text{C/W}$

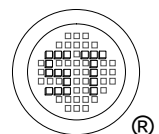
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



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Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ Current Gain Group A B C	h_{FE}	110 200 420	220 450 800	-
Collector Base Voltage at $I_C = 10\text{ }\mu\text{A}$	V_{CBO}	80	-	V
Collector Emitter Voltage at $I_C = 10\text{ mA}$	V_{CEO}	65	-	V
Emitter Base Voltage at $I_E = 1\text{ }\mu\text{A}$	V_{EBO}	6	-	V
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	15	nA
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$	$V_{CE(sat)}$	- -	0.25 0.6	V
Base Emitter Voltage at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$	V_{BE}	0.58 -	0.7 0.77	V
Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	100	-	MHz
Collector Output Capacitance at $V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	C_{ob}	-	4.5	pF



Electrical Characteristics Curves

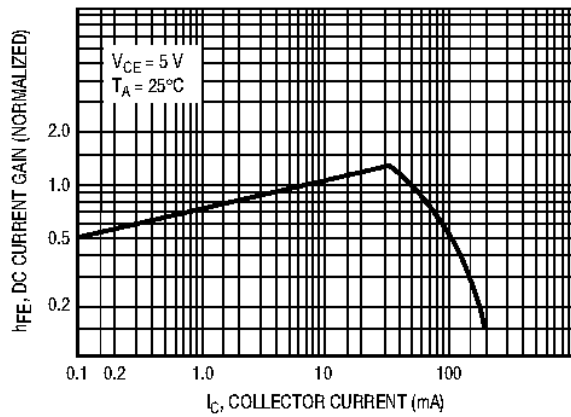


Fig 1. DC Current Gain

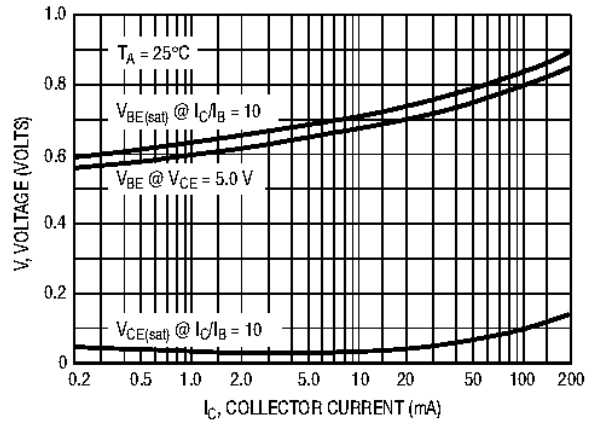


Fig 2. "On" Voltage

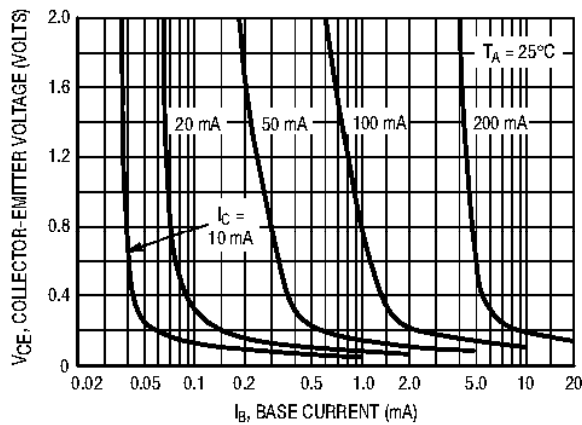


Fig 3. Collector Saturation Region

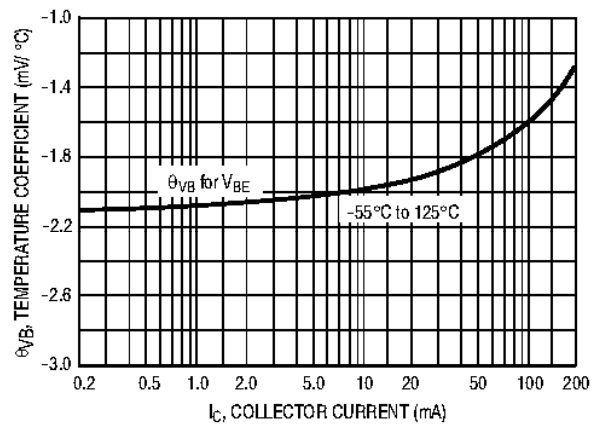


Fig 4. Base-Emitter Temperature Coefficient

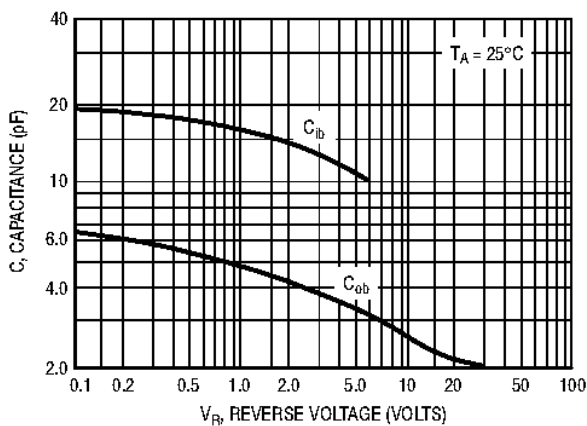


Fig 5. Capacitance

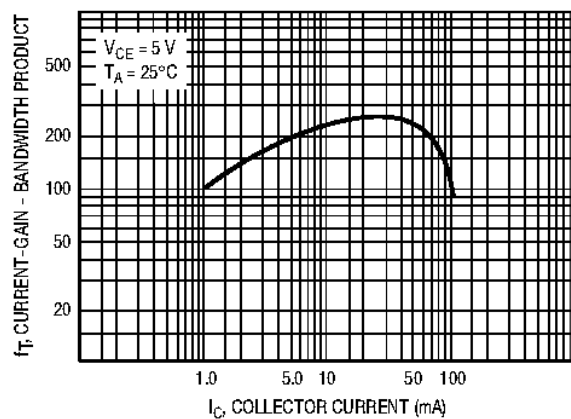
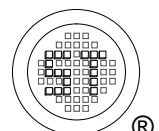


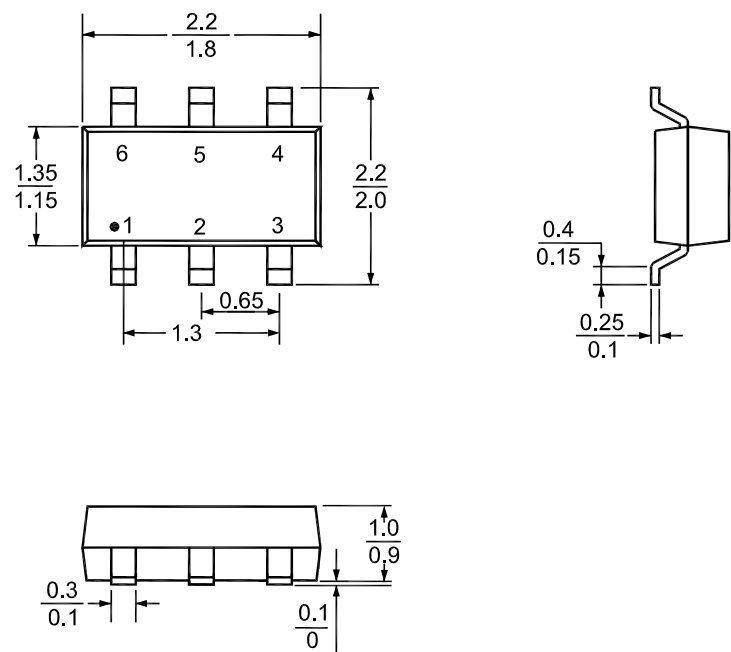
Fig 6. Current-Gain-Bandwidth Product



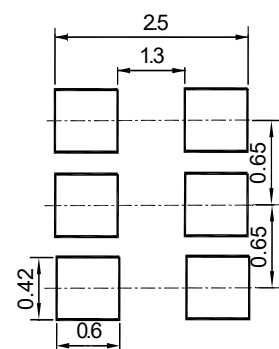
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Package Outline Dimensions (Units: mm)

SOT-363



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-363	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" • " = HAF (Halogen and Antimony Free(HAF)).

" ** " = Part No.

BC846ADW-AH:1A

BC846BDW-AH:1B

BC846CDW-AH:1C

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

