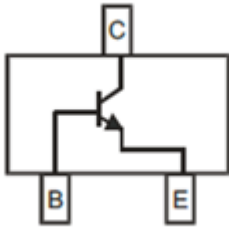


NPN General Purpose Transistors



SOT-323

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Part no. with suffix "HQ" means AEC-Q101 qualified

Applications

- General purpose switching and amplification

Mechanical Data

- **Case:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Value	
Collector-Base Voltage	V_{CBO}	V	BC847AWHQ BC847BWHQ BC847CWHQ	50
			BC848AWHQ BC848BWHQ BC848CWHQ	30
Collector-Emitter Voltage	V_{CEO}	V	BC847AWHQ BC847BWHQ BC847CWHQ	45
			BC848AWHQ BC848BWHQ BC848CWHQ	30
Emitter-Base Voltage	V_{EBO}	V	6	
Collector Current -Continuous	I_C	A	0.1	
Total Device Dissipation (*)	P_D	mW	200	
Thermal Resistance Junction to Ambient (*)	R_{thJA}	K/W	625	
Junction Temperature	T_j	°C	-55 to +150	
Storage Temperature	T_{STG}	°C	-55 to +150	

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch.



BC847AWHQ THRU BC848CWHQ

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Max
Collector-base breakdown voltage	V _{CBO}	V	BC847AWHQ BC847BWHQ BC847CWHQ	I _C =10μA, I _E =0	50
			BC848AWHQ BC848BWHQ BC848CWHQ		30
Collector-emitter breakdown voltage	V _{CEO}	V	BC847AWHQ BC847BWHQ BC847CWHQ	I _C =10mA, I _B =0	45
			BC848AWHQ BC848BWHQ BC848CWHQ		30
Emitter-base breakdown voltage	V _{EBO}	V	I _E =10μA, I _C =0	6	
Collector cut-off current	I _{CBO}	nA	BC847AWHQ BC847BWHQ BC847CWHQ	V _{CB} =50V, I _E =0	100
			BC848AWHQ BC848BWHQ BC848CWHQ	V _{CB} =30V, I _E =0	
Emitter cut-off current	I _{EBO}	nA	V _{EB} =5V, I _C =0		100
DC current gain	h _{FE}		BC847AWHQ BC848AWHQ	V _{CE} =5.0V, I _C =2mA	110
			BC847BWHQ BC848BWHQ		200
			BC847CWHQ BC848CWHQ		420
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =100mA, I _B =5mA		0.5
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =100mA, I _B =5mA		1.1
Transition frequency	f _T	MHz	V _{CE} =5V, I _C =10mA, f=100MHz	100	
Collector output capacitance	C _{ob}	pF	V _{CB} =10V, f=1MHz		4.5

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BC847AWHQ THRU BC848CWHQ	F2	Approximate 0.005	3000	30000	120000	7" reel



BC847AWHQ THRU BC848CWHQ

■BC847AWHQ/BC848AWHQ Characteristics (Typical)

Fig. 1-Static Characteristic

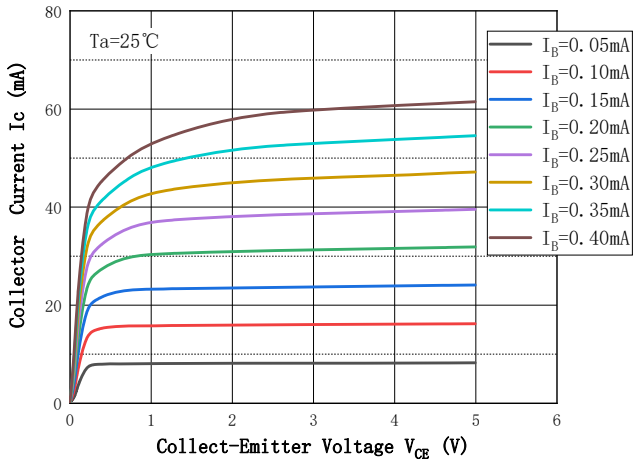


Fig. 2 - DC Current Gian

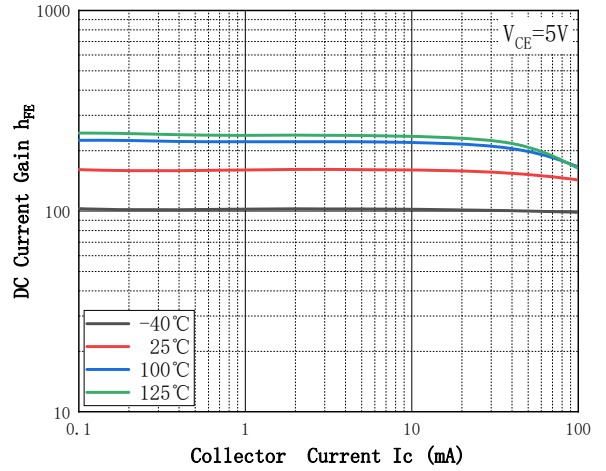


Fig. 3 - Collect-Emittor Saturation Voltage

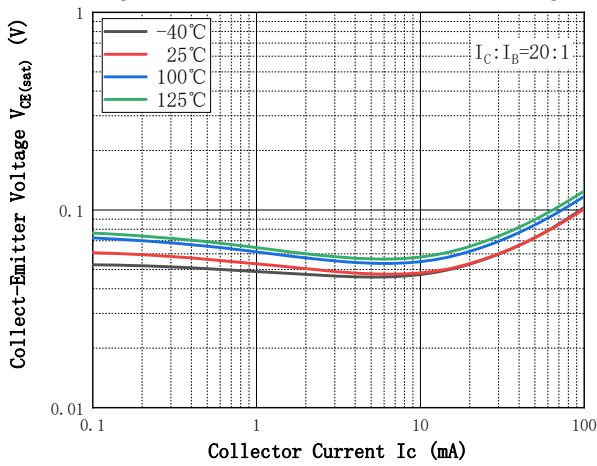


Fig. 4 - Base-Emittor Voltage

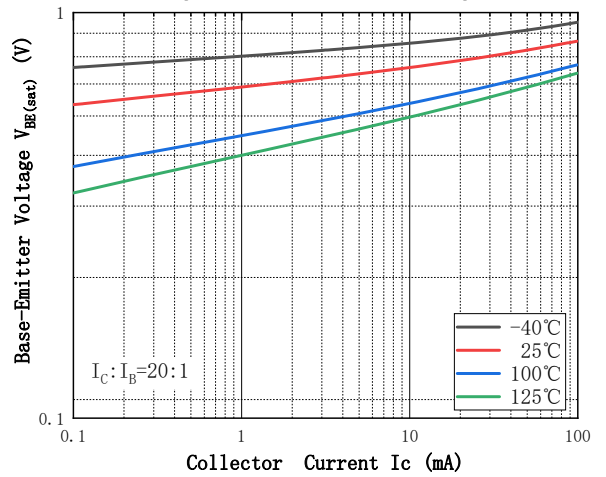


Fig. 5 - Base-Emittor On Voltage

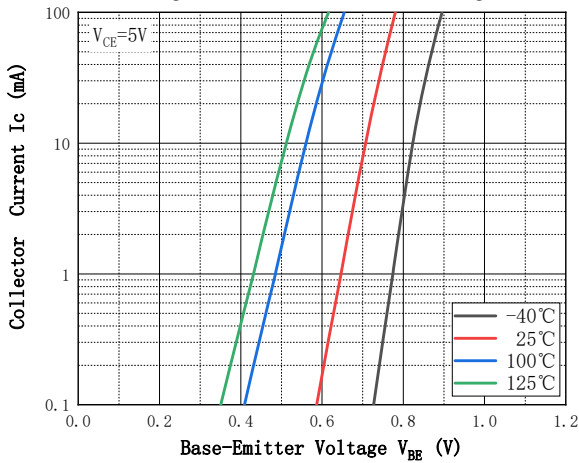
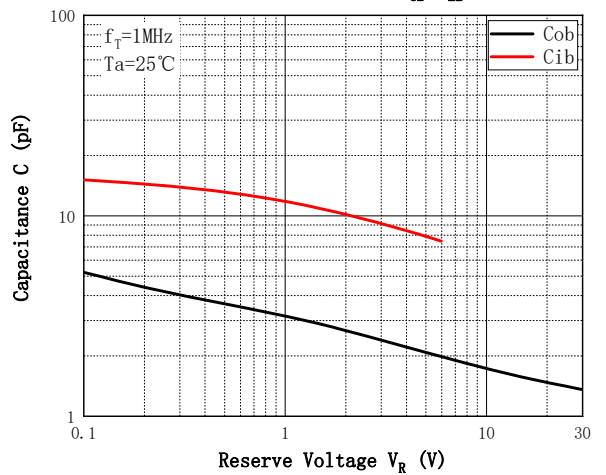


Fig. 6 - Cob/Cib— V_{CB}/V_{EB}





BC847AWHQ THRU BC848CWHQ

■BC847BWHQ/BC848BWHQ Characteristics (Typical)

Fig.1-Static Characteristic

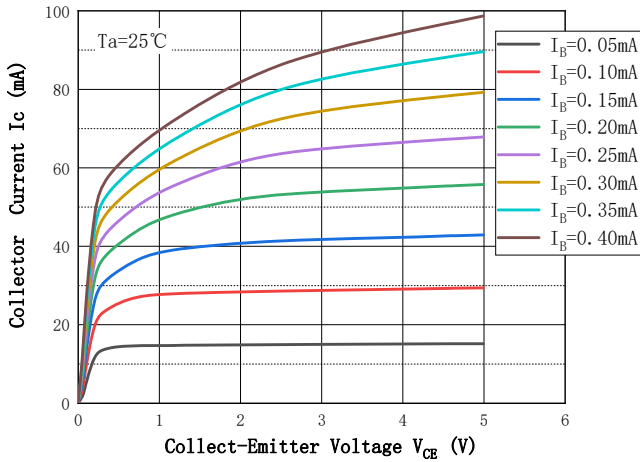


Fig.2 - DC Current Gain

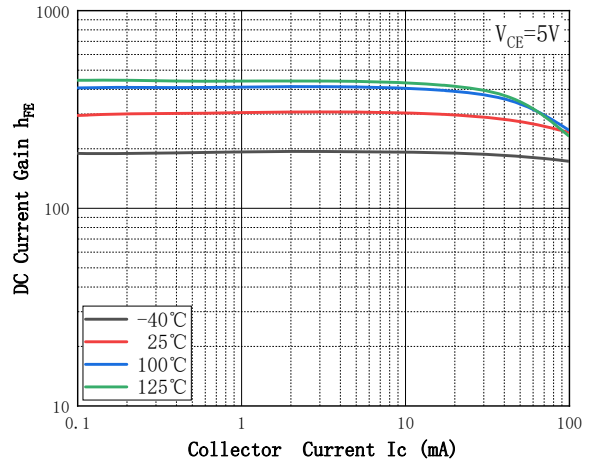


Fig.3 - Collect-Emitter Saturation Voltage

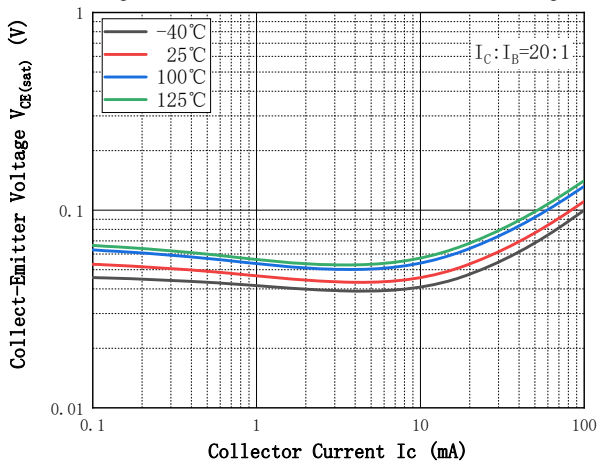


Fig.4 - Base-Emitter Voltage

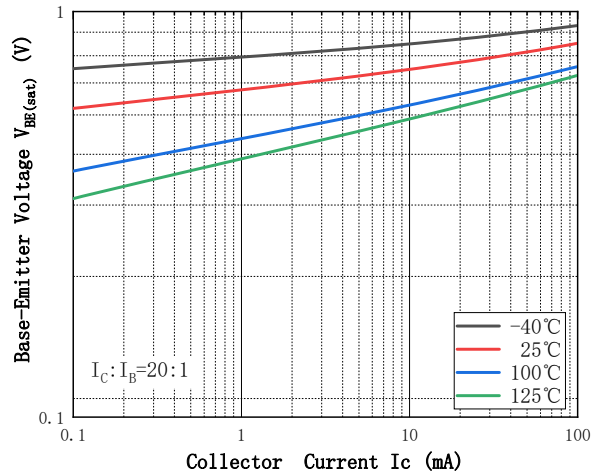


Fig.5 - Base-Emitter On Voltage

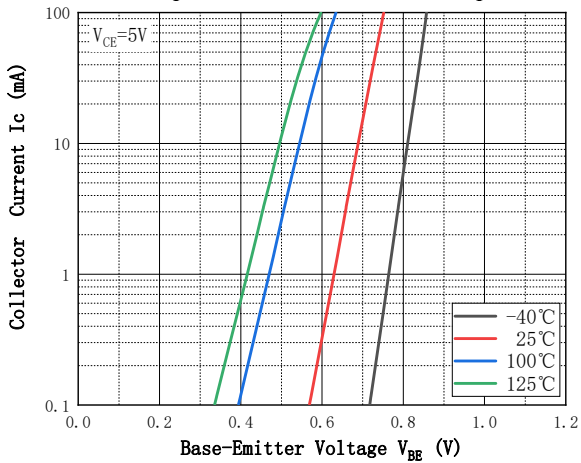
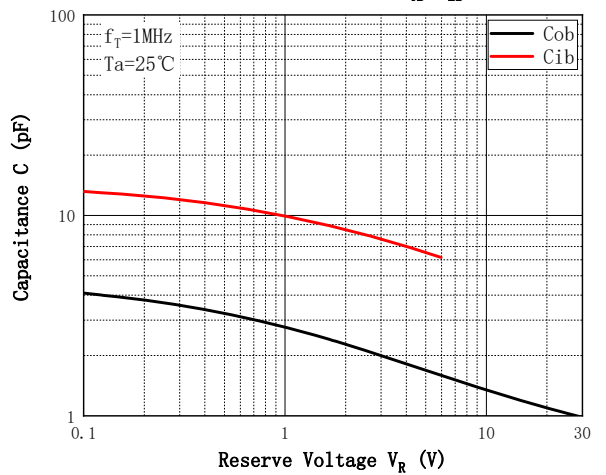


Fig.6 - Cob/Cib—Vcb/Veb





BC847AWHQ THRU BC848CWHQ

■BC847CWHQ/BC848CWHQ Characteristics (Typical)

Fig.1-Static Characteristic

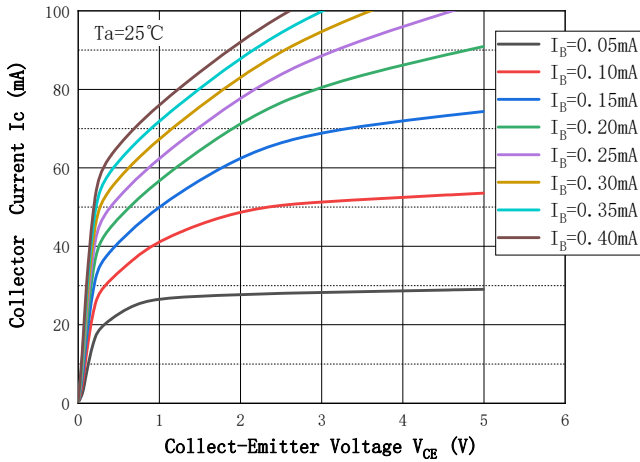


Fig.2 - DC Current Gian

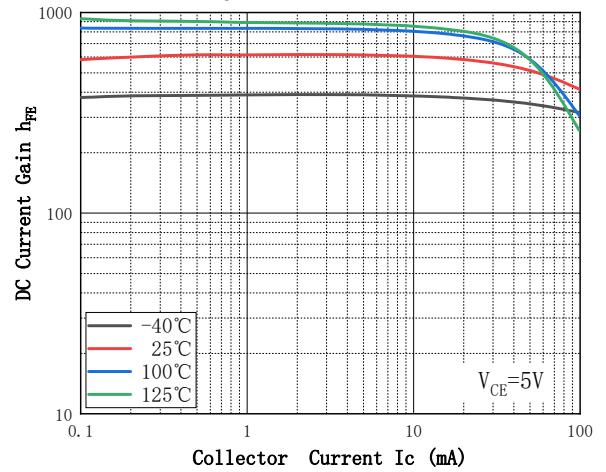


Fig.3 - Collect-Emittor Saturation Voltage

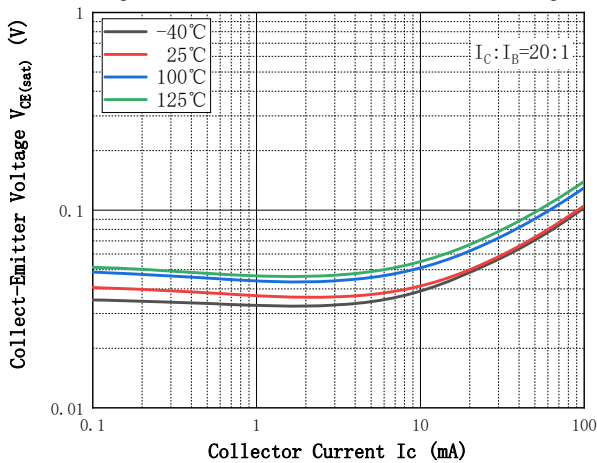


Fig.4 - Base-Emittor Voltage

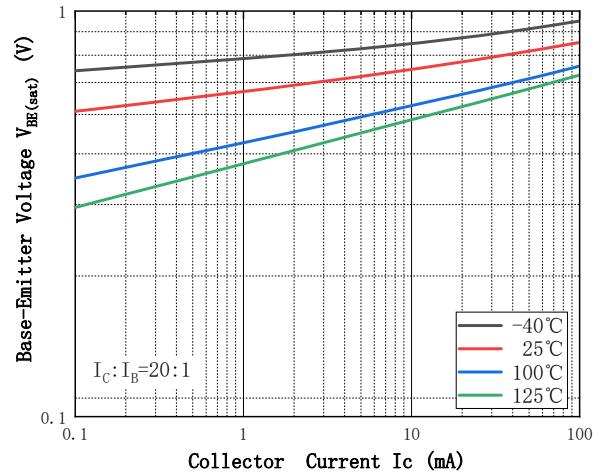


Fig.5 - Base-Emittor On Voltage

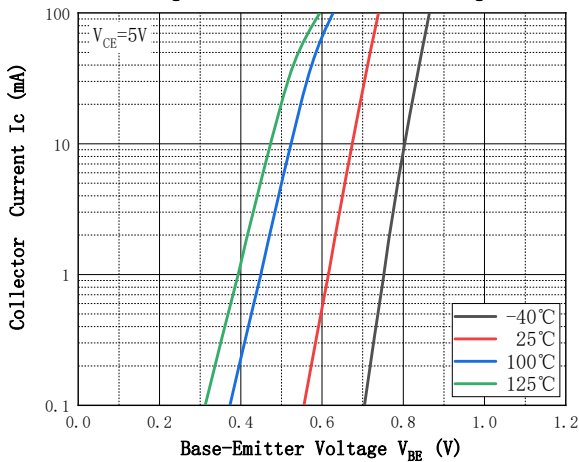
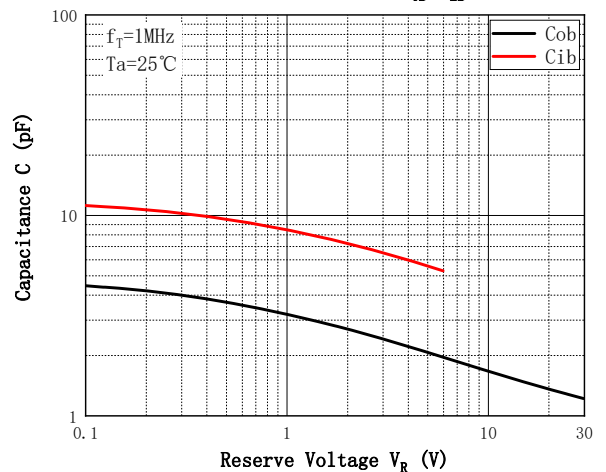


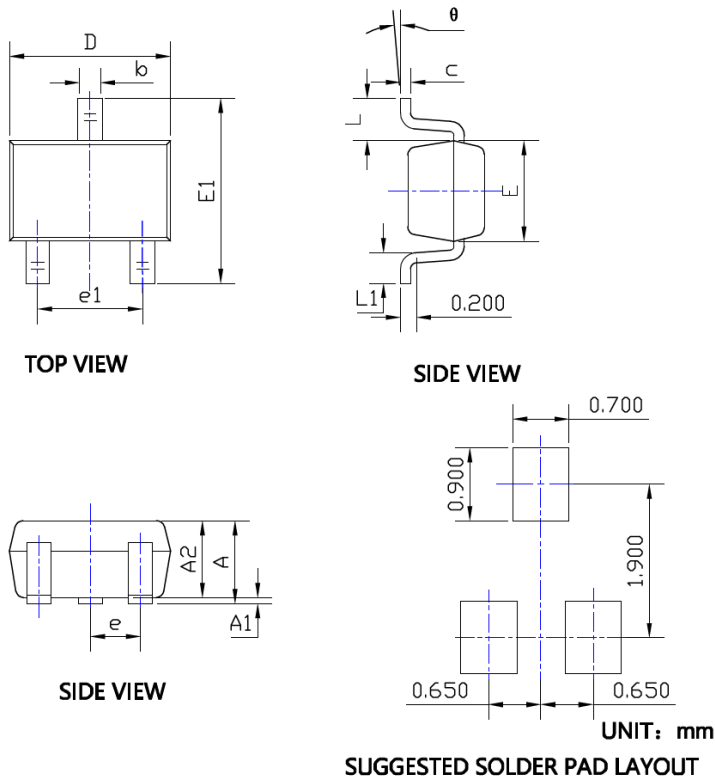
Fig.6 - Cob/Cib— V_{CE}/V_{BE}





BC847AWHQ THRU BC848CWHQ

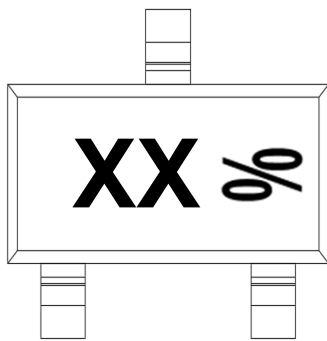
■ SOT-323 Package Outline Dimensions & Suggested Pad Layout



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

■ Marking Information



PN	Marking Code
BC847AWHQ	1E %
BC847BWHQ	1F %
BC847CWHQ	1G %
BC848AWHQ	1J %
BC848BWHQ	1K %
BC848CWHQ	1L %

Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black
4. XX% is Marking Code (%=placeholder for date code)

*Date Code vary depending upon production date.



BC847AWHQ THRU BC848CWHQ

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics, are not designed for use in medical, life-saving, lifesustaining, or military, Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.