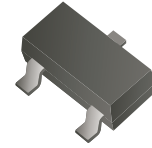


ABC846AW-HF Thru. ABC848CW-HF (NPN)

RoHS Device
Halogen Free



Features

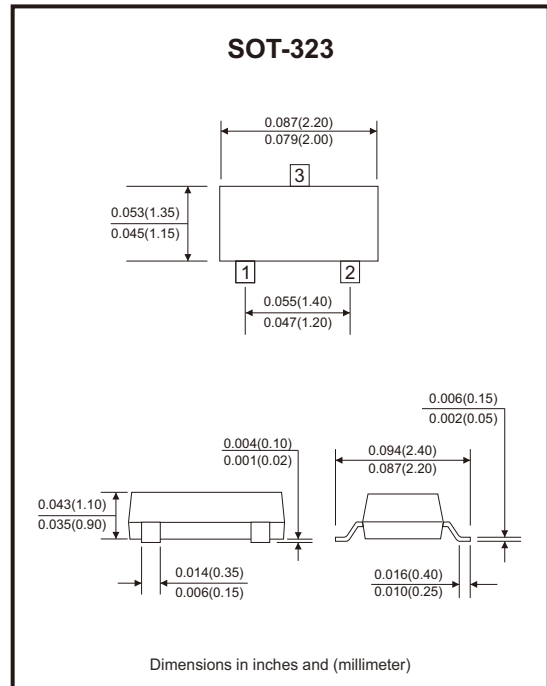
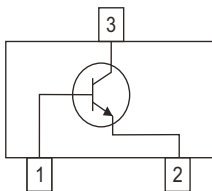
- High current gain.
- Excellent hFE linearity.
- Low noise between 30Hz and 15kHz.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-323, molded plastic.
- Molding compound: UL flammability classification rating 94V-0.
- Terminals: Tin-plated, solderability per MIL-STD-202, method 208.

Circuit Diagram

- 1.BASE
- 2.EMITTER
- 3.COLLECTOR



Maximum Ratings (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-base voltage	V _{CBO}	80	V
ABC847W-HF		50	
ABC848W-HF		30	
Collector-emitter voltage	V _{CEO}	65	V
ABC847W-HF		45	
ABC848W-HF		30	
Emitter-base voltage	V _{EBO}	6	V
ABC848W-HF		5	
Collector current-continuous	I _C	100	mA
Collector current-peak	I _{CM}	200	mA
Base current-peak	I _{BM}	200	mA
Power dissipation	P _D	200	mW
Operation junction temperature	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage ABC846W-HF ABC847W-HF ABC848W-HF	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	80 50 30			V
Collector-emitter breakdown voltage ABC846W-HF ABC847W-HF ABC848W-HF	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	65 45 30			V
Emitter-base breakdown voltage ABC846W-HF ABC847W-HF ABC848W-HF	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6 6 5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$			15	nA
Emitter-base cut-off current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			15	nA
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$			1	mA
DC current gain ABC846AW-HF, 847AW-HF, 848AW-HF ABC846BW-HF, 847BW-HF, 848BW-HF ABC847CW-HF, 848CW-HF ABC846AW-HF, 847AW-HF, 848AW-HF ABC846BW-HF, 847BW-HF, 848BW-HF ABC847CW-HF, 848CW-HF	h_{FE}	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$		110 250 480		
		$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	110 200 420		220 450 800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$		0.09 0.20	0.25 0.60	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$		0.70 0.90	0.90 1.10	V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $V_{CE} = 5\text{V}, I_C = 10\text{mA}$	0.58 -	0.66 -	0.70 0.77	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ $f = 100\text{MHz}$	100			MHz

Rating and Characteristic Curves (ABC846AW-HF Thru. ABC848CW-HF)

Fig.1 - $h_{FE} - I_C$

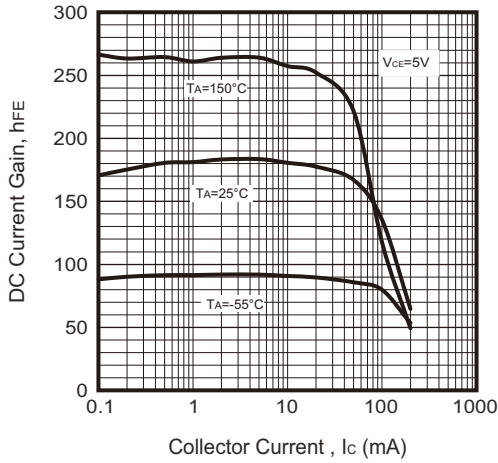


Fig.2 - $V_{CE(sat)} - I_C$

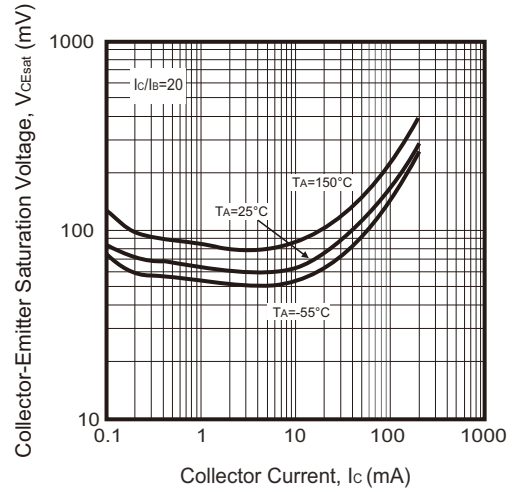


Fig.3 - $V_{BE(sat)} - I_C$

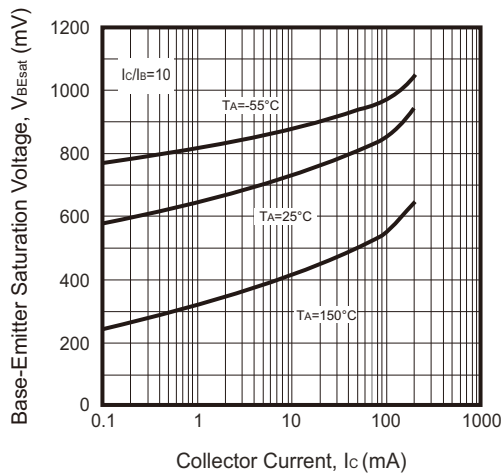
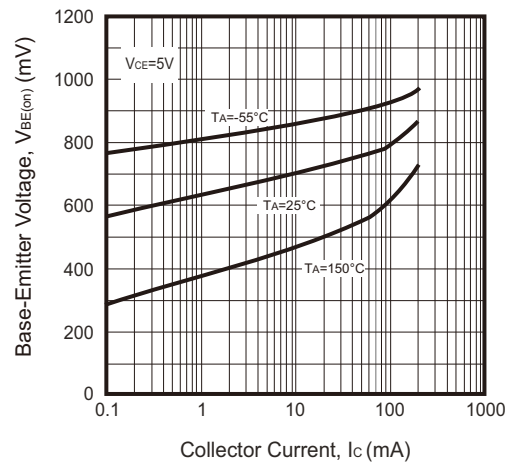
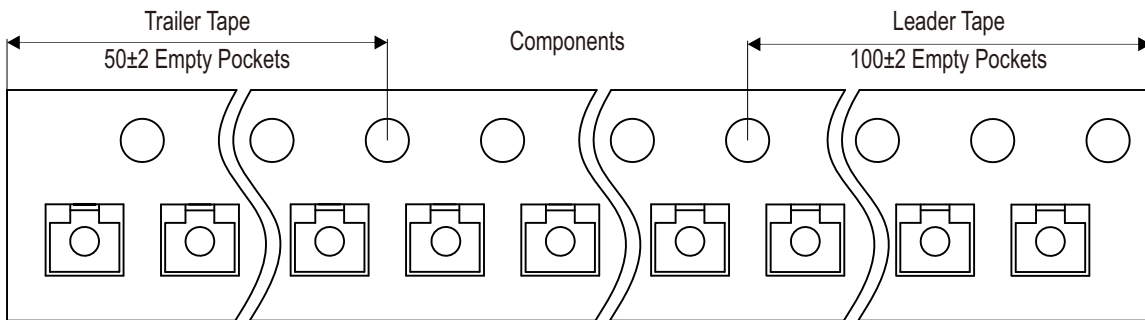
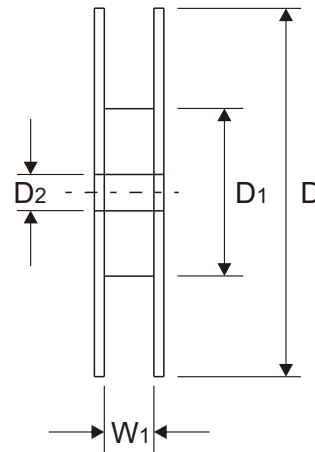
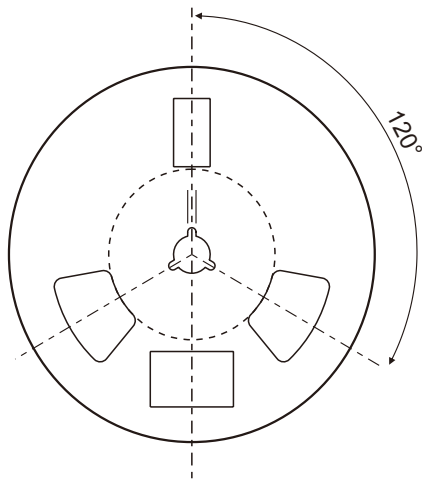
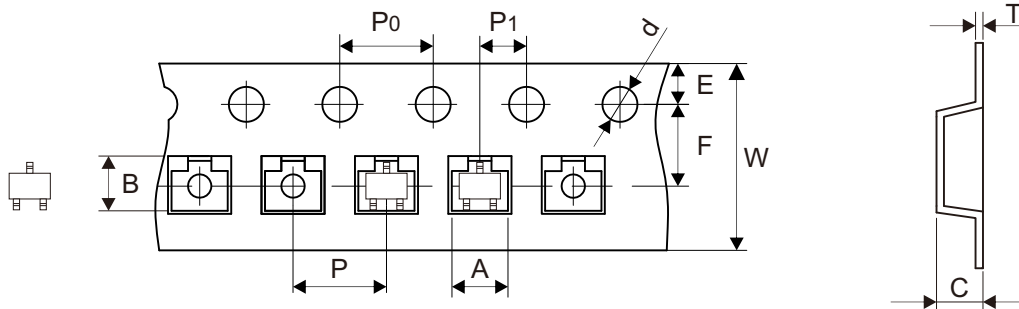


Fig.4 - $V_{BE(on)} - I_C$



Reel Taping Specification

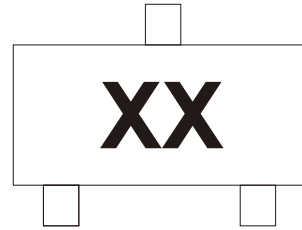


SOT-323	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.25 ± 0.10	2.55 ± 0.10	1.19 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.089 ± 0.004	0.100 ± 0.004	0.047 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

SOT-323	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.22 ± 0.02	8.00 + 0.30 - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.009 ± 0.001	0.315 + 0.012 - 0.004	0.374 ± 0.039

Marking Code

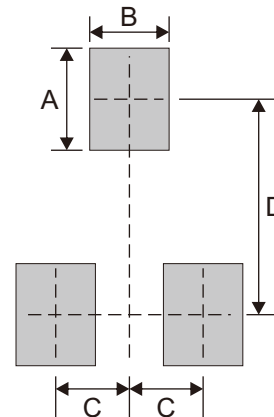
Part Number	Marking Code
ABC846AW-HF	1A
ABC847AW-HF	1E
ABC848AW-HF	1J
ABC846BW-HF	1B
ABC847BW-HF	1F
ABC848BW-HF	1K
ABC847CW-HF	1G
ABC848CW-HF	1L



xx = Product type marking code

Suggested P.C.B. PAD Layout

SIZE	SOT-323	
	(mm)	(inch)
A	0.90	0.035
B	0.70	0.028
C	0.65	0.026
D	1.90	0.075



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-323	3,000	7