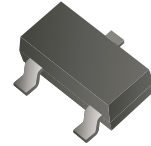


ABC817-16W-HF/25W-HF/40W-HF (NPN)

RoHS Device

Halogen Free



Features

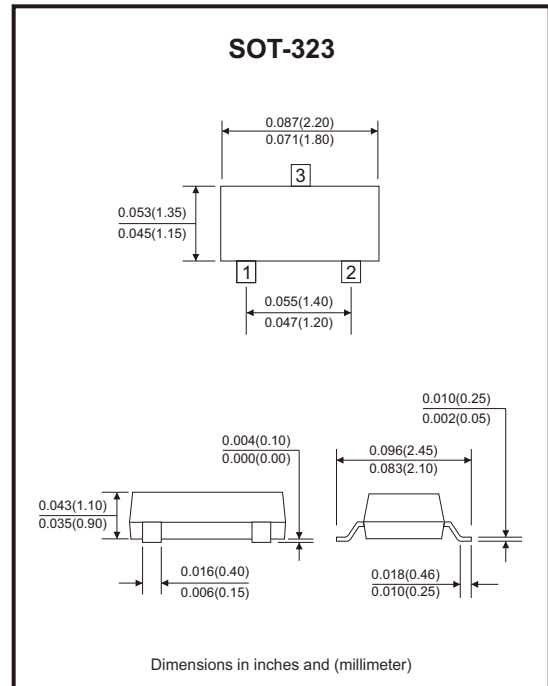
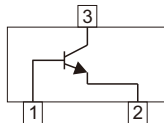
- Epitaxial planar die construction.
- High collector current.
- High current gain.
- Low collector-emitter saturation voltage.
- AEC-Q101 Qualified.

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 $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base breakdown voltage	V_{CBO}	50	V
Collector-emitter breakdown voltage	V_{CEO}	45	V
Emitter-base breakdown voltage	V_{EBO}	5	V
Collector current-continuous	I_C	0.5	A
Peak collector current	I_{CM}	1	A
Base current	I_B	0.1	A
Peak base current	I_{BM}	0.2	A
Power dissipation	P_D	250	mW
Thermal resistance junction to air (Note 1)	$R_{\theta JA}$	396	$^{\circ}\text{C/W}$
Thermal resistance junction to case (Note 1)	$R_{\theta JC}$	197	$^{\circ}\text{C/W}$
Thermal resistance junction to lead (Note 1)	$R_{\theta JL}$	218	$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	-65 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +150	$^{\circ}\text{C}$

Note: 1. The data tested by surface mounted on a 15mm x 15mm x 1mm FR4-epoxy P.C.B.

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage		$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	50			V
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	45			V
Emitter-base breakdown voltage		$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5			V
Collector cut-off current		I_{CBO}	$V_{CB} = 25V, I_E = 0$			100	nA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5V, I_C = 0$			100	nA
DC current gain	ABC817-16W-HF	h_{FE}	$V_{CE} = 1V, I_C = 100mA$	100		250	
	ABC817-25W-HF	h_{FE}		160		400	
	ABC817-40W-HF	h_{FE}		250		600	
	ABC817-16W-HF	h_{FE}	$V_{CE} = 1V, I_C = 300mA$	60			
	ABC817-25W-HF	h_{FE}		100			
	ABC817-40W-HF	h_{FE}		170			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$			0.7	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$			1.2	V
Transition frequency		f_T	$I_C = 50mA, V_{CE} = 5V, f = 100MHz$		170		MHz
Collector output capacitance		C_{OBO}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		6		pF

Typical Rating and Characteristic Curves (ABC817-16W-HF/25W-HF/40W-HF)

Fig.1 - h_{FE} vs. I_C (ABC817-16W-HF)

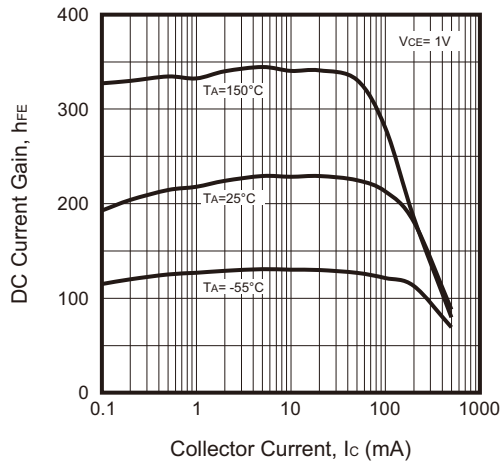


Fig.2 - h_{FE} vs. I_C (ABC817-25W-HF)

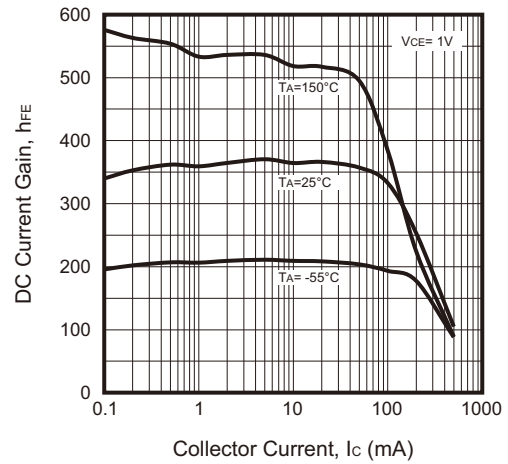


Fig.3 - h_{FE} vs. I_C (ABC817-40W-HF)

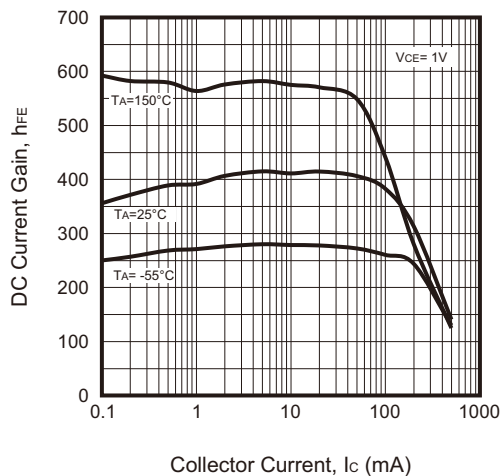


Fig.4 - $V_{BE(ON)}$ vs. I_C

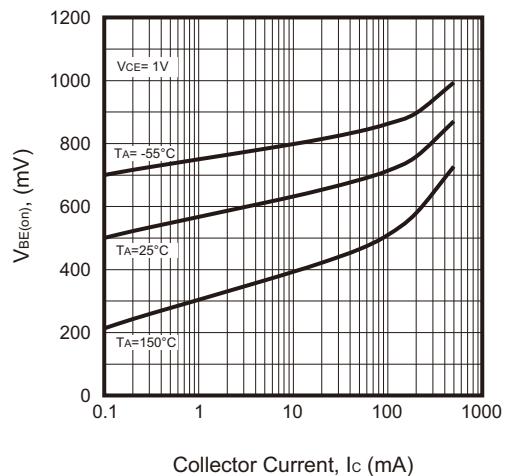


Fig.5 - $V_{CE(sat)}$ vs. I_C

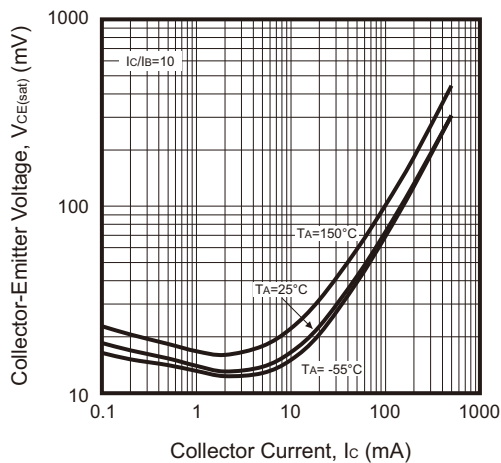
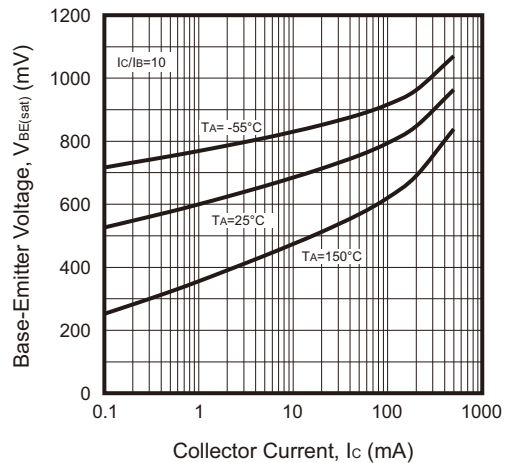
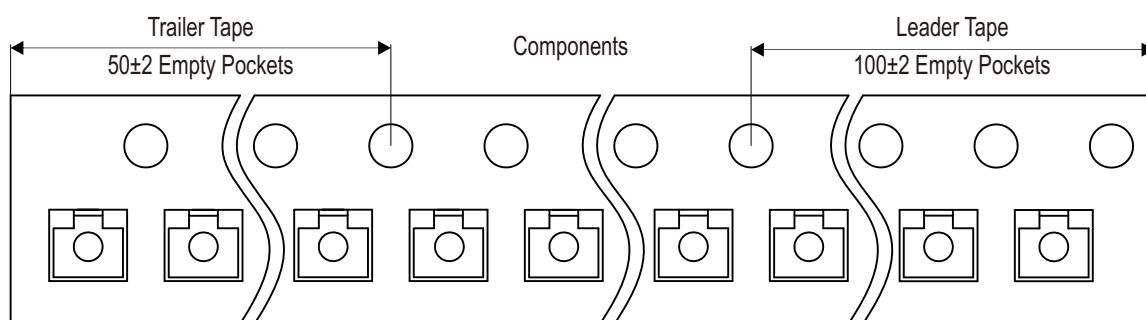
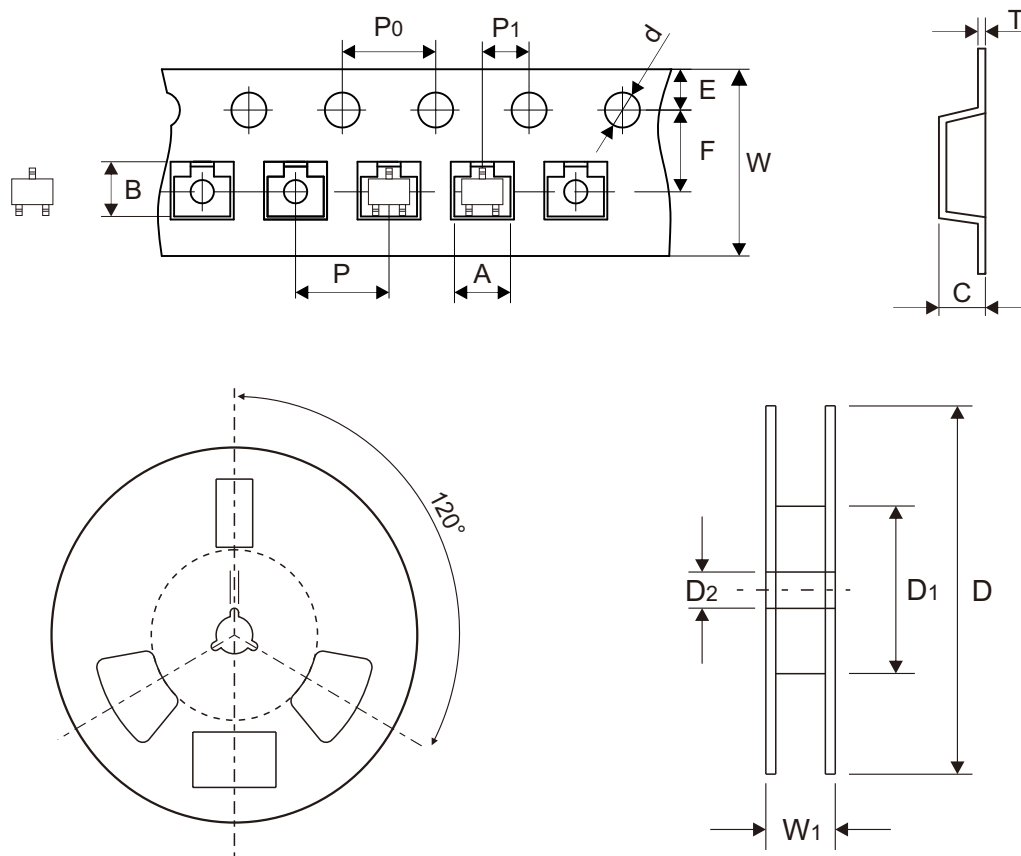


Fig.6 - $V_{BE(sat)}$ vs. I_C



Reel Taping Specification

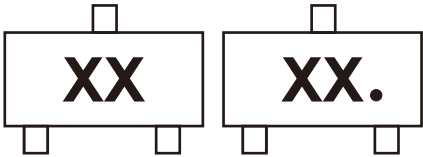


SOT-323	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.25 ± 0.10	2.55 ± 0.10	1.19 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.089 ± 0.004	0.100 ± 0.004	0.047 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

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	12.50 ± 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	0.492 ± 0.039

Marking Code

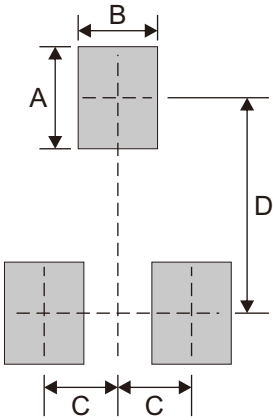
Part Number	Marking Code
ABC817-16W-HF	6A
ABC817-25W-HF	6B
ABC817-40W-HF	6C



xx = Product type marking code
Solid dot = Control 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