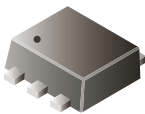


ABC847BV-HF (NPN+NPN)

RoHS Device

Halogen Free



Features

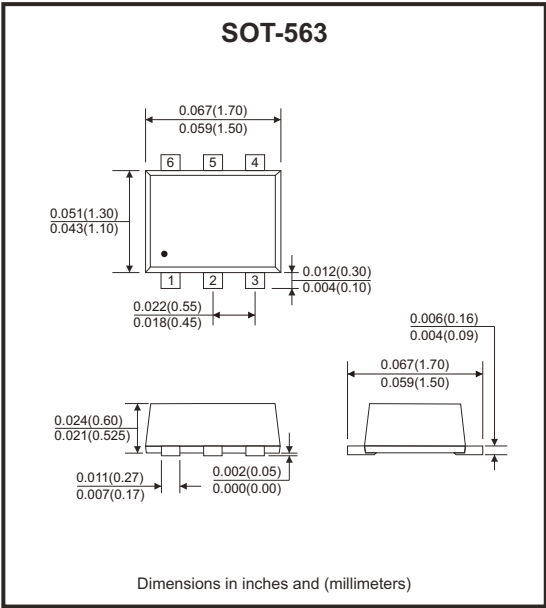
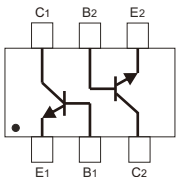
- Ultra-small surface mount package.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-563, molded plastic.
- Molding compound: UL flammability classification rating 94V-0.
- Terminals: Tin-plated; solderability-per MIL-STD-202, method 208.

Circuit Diagram

B :Base
E :Emitter
C :Collector



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

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	45	V
Emitter-base voltage	V_{EBO}	6	V
Collector current-continuous	I_C	100	mA
Collector current-peak	I_{CM}	200	mA
Power dissipation (Note 1)	P_C	150	mW
Thermal resistance, junction to ambient (Note 1)	$R_{\theta JA}$	833	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Note: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_B = 0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 1\mu A, I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 30V, I_E = 0$			15	nA
Emitter-base cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			100	nA
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = 30V, I_B = 0$			1	mA
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 2mA$	200		450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 0.5mA$			0.25	V
		$I_C = 100mA, I_B = 5mA$			0.60	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 0.5mA$		0.7	0.90	V
		$I_C = 100mA, I_B = 5mA$		0.9	1.10	
Base-emitter voltage	$V_{BE(on)}$	$V_{CE} = 5V, I_C = 2mA$	0.58	0.66	0.70	V
		$V_{CE} = 5V, I_C = 10mA$			0.77	
Transition frequency	f_T	$V_{CE} = 5V, I_C = 10mA, f = 100MHz$	100			
Emitter input capacitance	C_{ib}	$V_{CB} = 0.5V, I_C = 0, f = 1MHz$		13.28		pF
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		1.52		pF

Rating and Characteristic Curves (ABC847BV-HF)

Fig.1 - h_{FE} — I_C

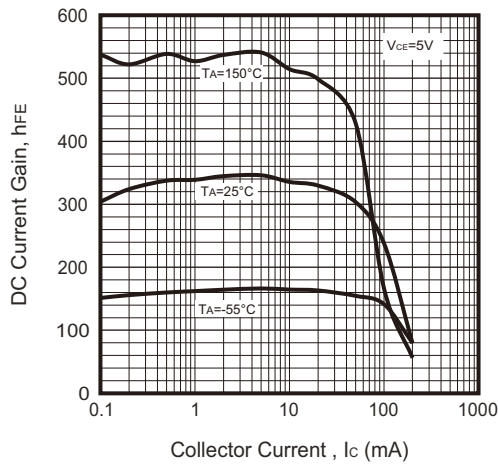


Fig.2 - $V_{CE(sat)}$ — I_C

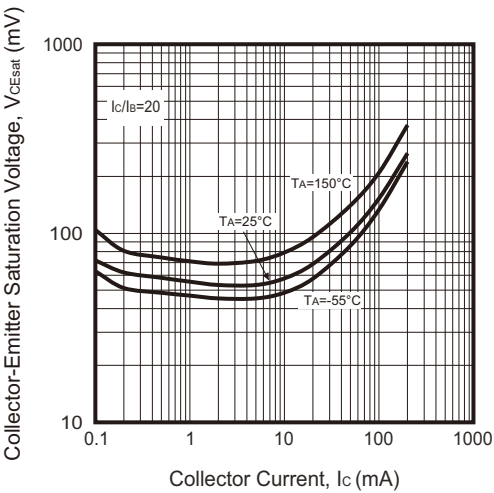


Fig.3 - $V_{BE(sat)}$ — I_C

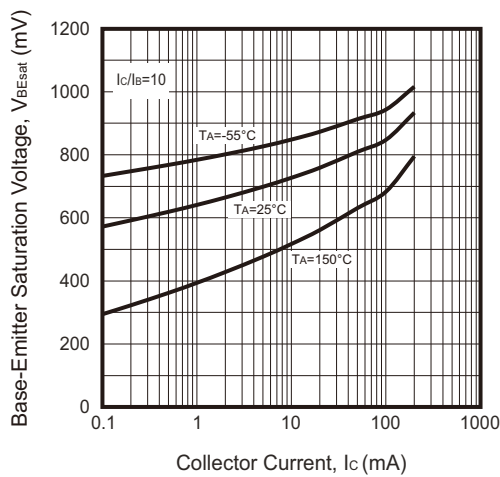
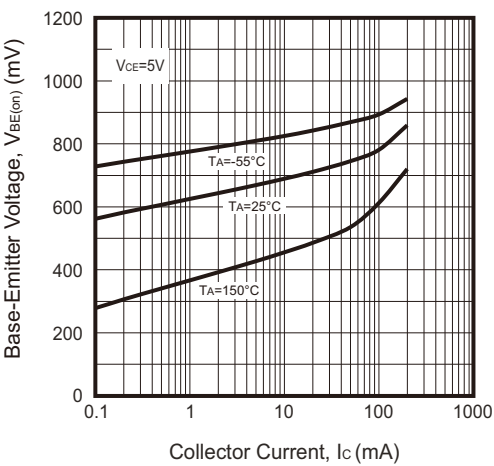
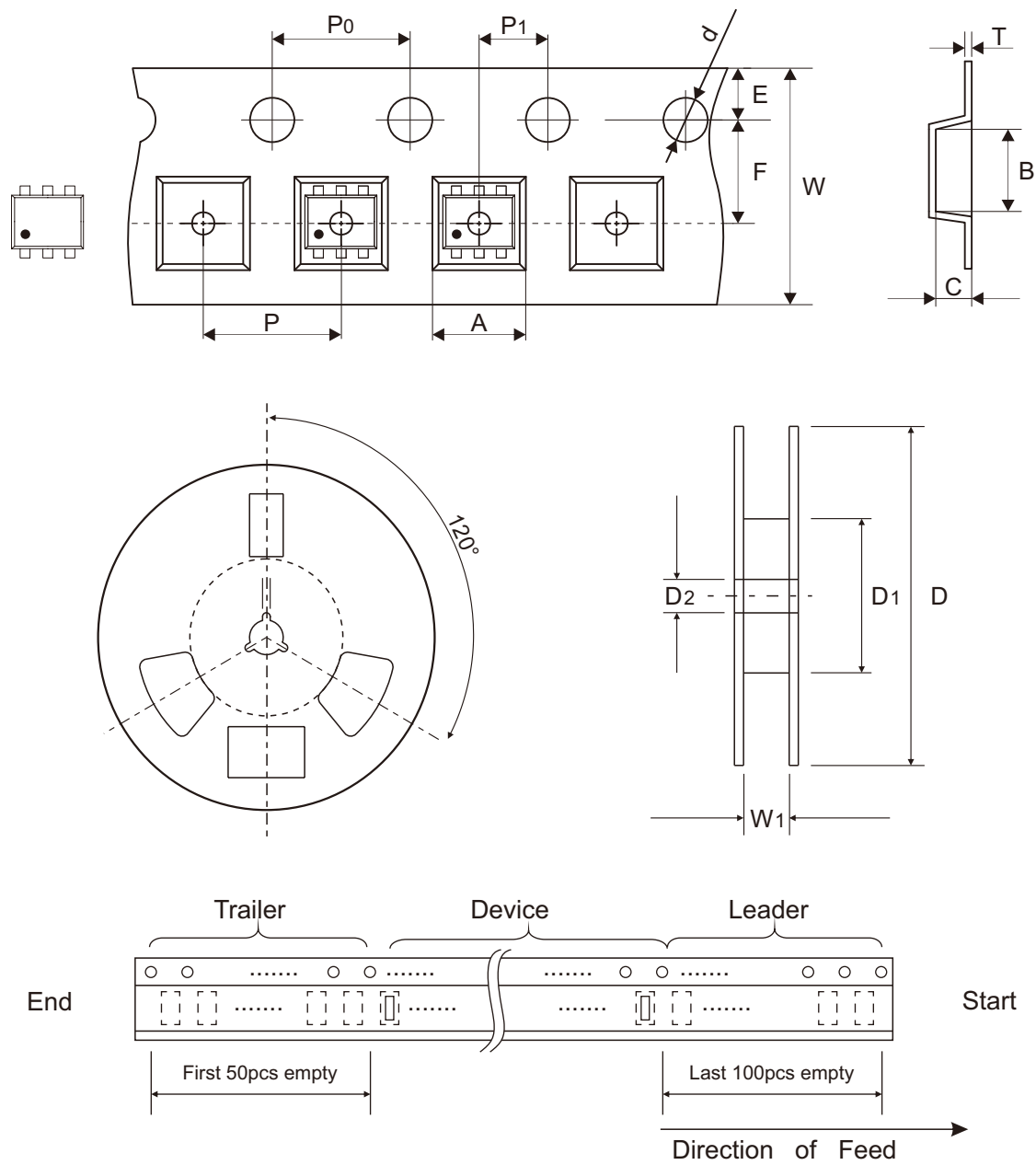


Fig.4 - $V_{BE(on)}$ — I_C



Reel Taping Specification

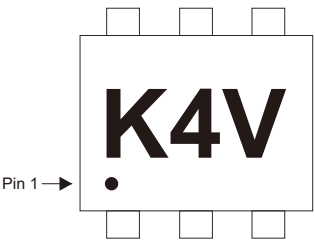


SOT-563	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.78 ± 0.05	1.78 ± 0.05	0.69 ± 0.05	1.55 ± 0.05	178 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.070 ± 0.002	0.070 ± 0.002	0.027 ± 0.002	0.061 ± 0.002	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

SOT-563	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.03	8.00 + 0.30 - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.374 ± 0.039

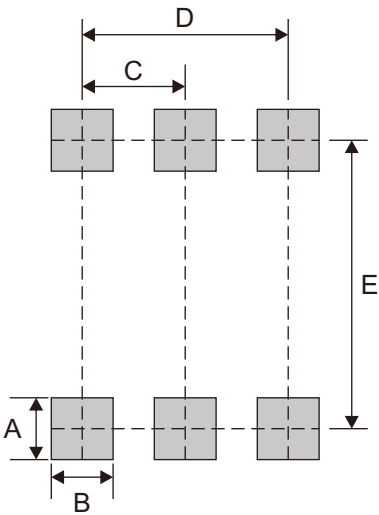
Marking Code

Part Number	Marking Code
ABC847BV-HF	K4V



Suggested P.C.B. PAD Layout

SIZE	SOT-563	
	(mm)	(inch)
A	0.30	0.012
B	0.30	0.012
C	0.50	0.020
D	1.00	0.039
E	1.40	0.055



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-563	3,000	7