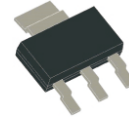


ABCP51/52/53-16-HF Series (PNP)

RoHS Device

Halogen Free



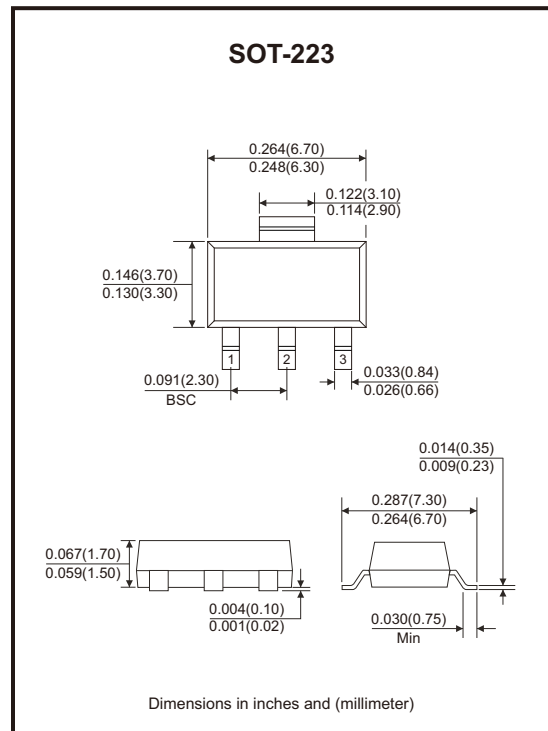
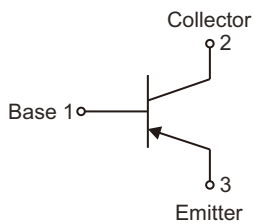
Features

- High collector current.
- Low collector-emitter saturation voltage.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-223, molded plastic.
- Mounting position: Any.

Circuit Diagram



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

Parameter	Symbol	ABCP51-16-HF	ABCP52-16-HF	ABCP53-16-HF	Unit
Collector-base voltage	V _{CBO}	-45	-60	-100	V
Collector-emitter voltage	V _{CEO}	-45	-60	-80	V
Emitter-base voltage	V _{EBO}	-5			V
Collector continuous current (Note 1)	I _C	-1			A
Peak pulsed collector current	I _{CM}	-2			A
Base continuous current	I _B	-100			mA
Peak pulsed base current	I _{BM}	-200			mA
Collector power dissipation (Note 1)	P _C	1.5			W
Thermal resistance from junction to ambient (Note 1)	R _{θJA}	83.3			°C/W
Collector power dissipation @ T _L ≤ 120°C	P _{C2}	2.1			W
Thermal resistance from junction to lead (Note 1)	R _{θJL}	14			°C/W
Operation junction and storage temperature range	T _J , T _{STG}	-55 to +150			°C

Notes: 1. Measured with the device mounted on 1 inch² FR-4 board with 1oz. copper, in a still air environment with T_a=25°C.

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage	ABCP51-16-HF ABCP52-16-HF ABCP53-16-HF $I_C = -0.1\text{mA}$, $I_E = 0\text{A}$	$V_{(BR)CBO}$	-45 -60 -100			V
Collector-emitter breakdown voltage	ABCP51-16-HF ABCP52-16-HF ABCP53-16-HF $I_C = -10\text{mA}$, $I_B = 0\text{A}$	$V_{(BR)CEO}$	-45 -60 -80			V
Emitter-base breakdown voltage	$I_E = -10\mu\text{A}$, $I_C = 0\text{A}$	$V_{(BR)EBO}$	-5			V
Collector-base cut-off current	$V_{CB} = -30\text{V}$, $I_E = 0\text{A}$	I_{CBO}			-100	nA
DC current gain	$V_{CE} = -2\text{V}$, $I_C = -5\text{mA}$	$h_{FE(1)}$	25			
	$V_{CE} = -2\text{V}$, $I_C = -150\text{mA}$	$h_{FE(2)}$	100		250	
	$V_{CE} = -2\text{V}$, $I_C = -500\text{mA}$	$h_{FE(3)}$	25			
Collector-emitter saturation voltage	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$	$V_{CE(sat)}$			-0.5	V
Base-emitter voltage	$I_C = -500\text{mA}$, $V_{CE} = -2\text{V}$	V_{BE}			-1	V
Transition frequency	$V_{CE} = -10\text{V}$, $I_C = -50\text{mA}$, $f = 100\text{MHz}$	f_T	100			MHz

Classification Of $h_{FE(2)}$

Part No.	ABCP51-16-HF	ABCP52-16-HF	ABCP53-16-HF
Range	100~250		

Typical Rating and Characteristic Curves (ABCP51/52/53-16-HF Series)

Fig.1 - Static Characteristic

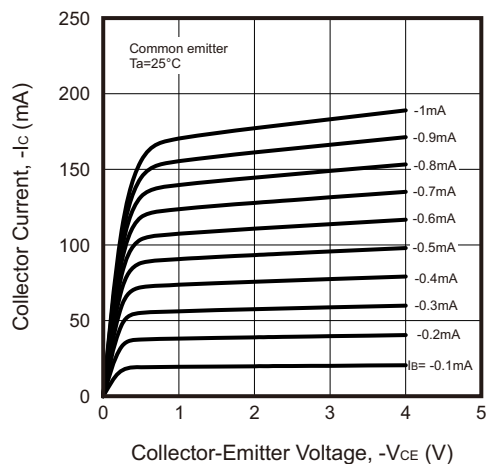
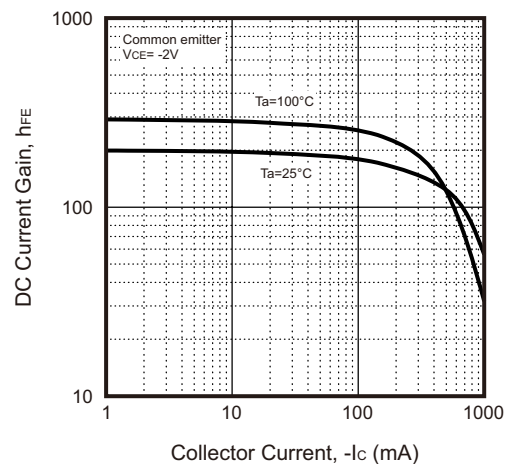


Fig.2 - $h_{FE} - I_C$



Typical Rating and Characteristic Curves (ABCP51/52/53-16-HF Series)

Fig.3 - $V_{BEsat} — I_c$

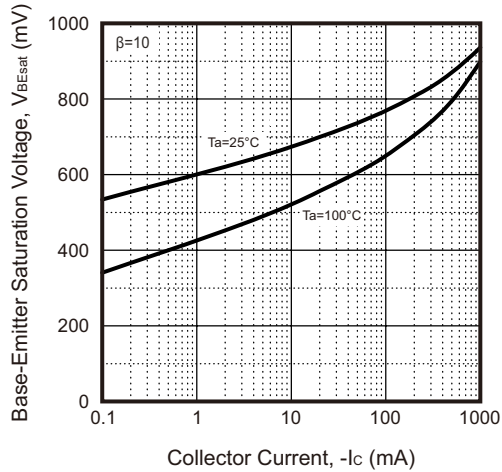


Fig.4 - $V_{CEsat} — I_c$

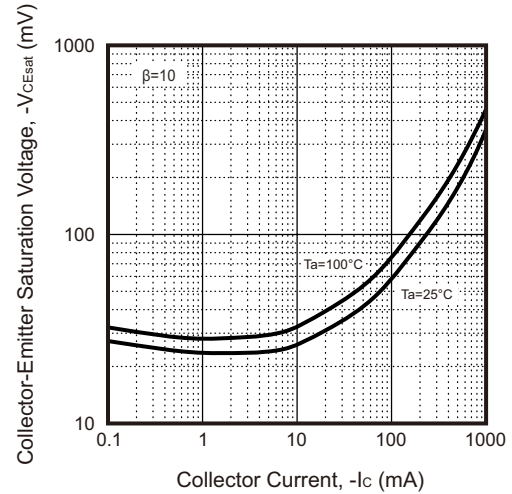


Fig.5 - $I_c — V_{BE}$

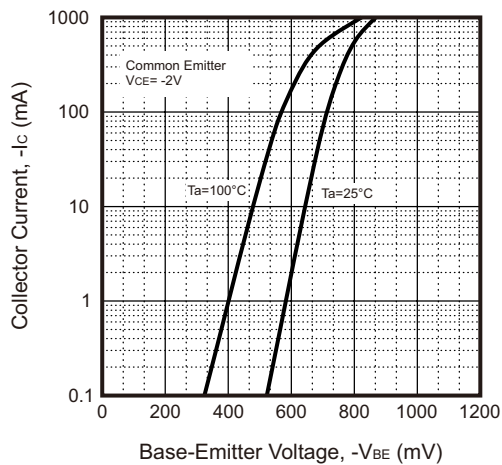


Fig.6 - $f_T — I_c$

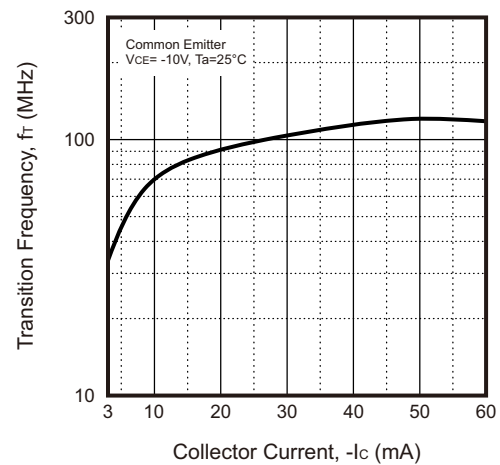


Fig.7 - $C_{ob}/C_{ib} — V_{CB}/V_{EB}$

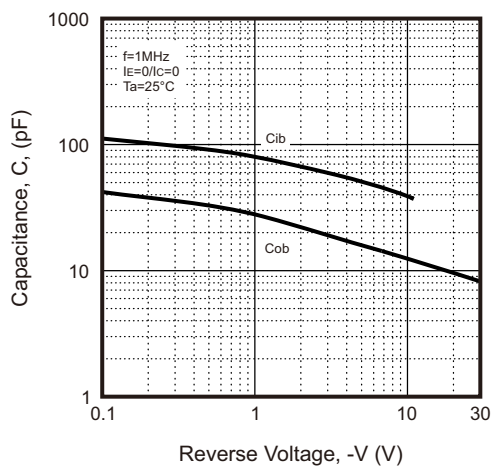
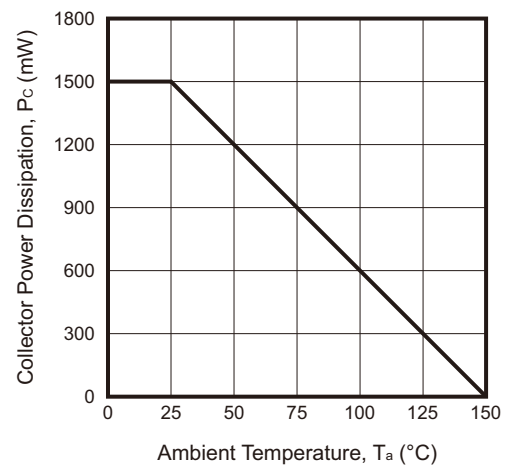
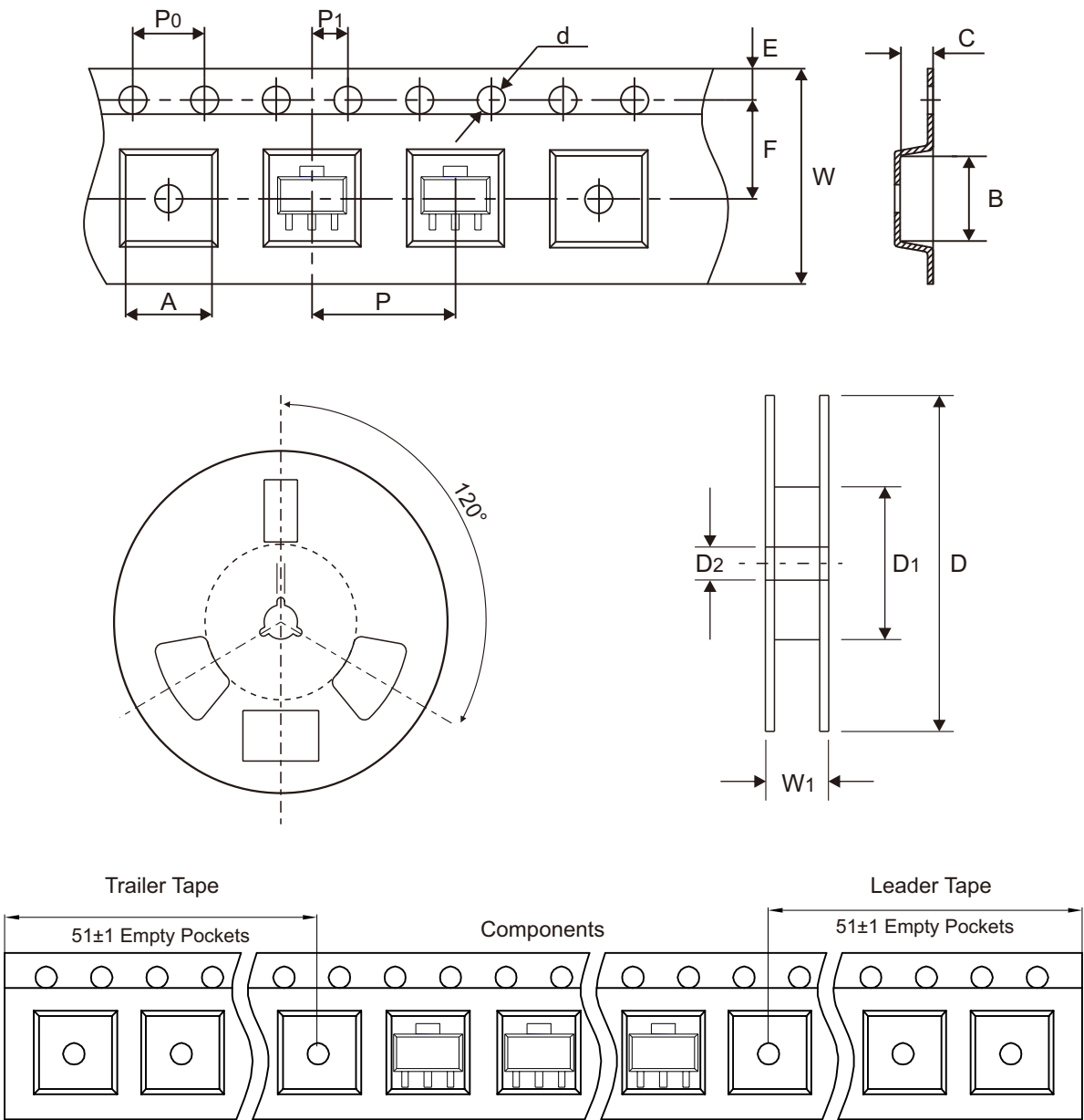


Fig.8 - $P_C — T_a$



Reel Taping Specification

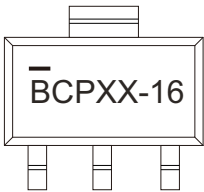


SOT-223	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	6.765 ± 0.10	7.335 ± 0.10	1.88 ± 0.10	1.50 + 0.10 - 0.00	330.00 ± 1.00	100.00 ± 0.05	13.00 ± 0.02
	(inch)	0.266 ± 0.004	0.289 ± 0.004	0.074 ± 0.004	0.059 + 0.004 - 0.000	12.992 ± 0.039	3.937 ± 0.002	0.512 ± 0.001

SOT-223	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	12.00 + 0.30 - 0.10	17.60 ± 1.00
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.472 + 0.012 - 0.004	0.693 ± 0.039

Marking Code

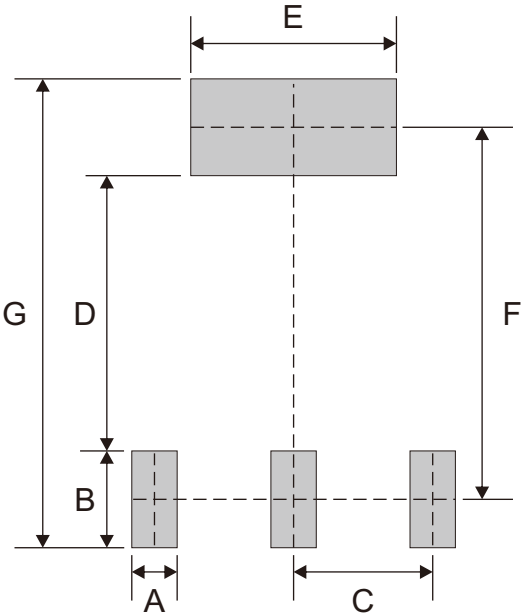
Part Number	Marking Code
ABCP51-16-HF	BCP51-16
ABCP52-16-HF	BCP52-16
ABCP53-16-HF	BCP53-16



XX = Product type marking code

Suggested P.C.B. PAD Layout

SIZE	SOT-223	
	(mm)	(inch)
A	0.75	0.030
B	1.60	0.063
C	2.30	0.091
D	4.55	0.179
E	3.40	0.134
F	6.15	0.242
G	7.75	0.305



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-223	2,500	13