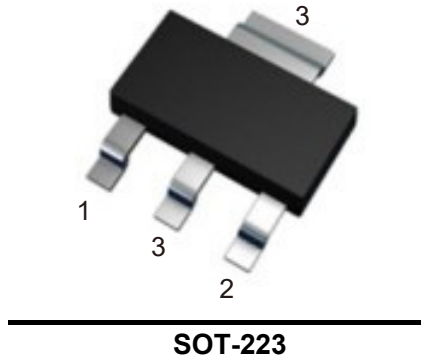


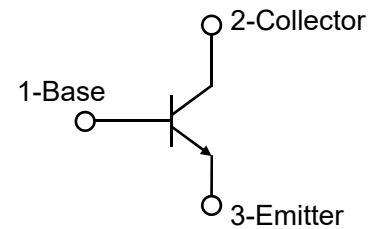
Feature

- High collector current and low $V_{CE(SAT)}$
- Pb-free lead plating and halogen-free package



Classification OF hFE

Rank	16
Range	100-250

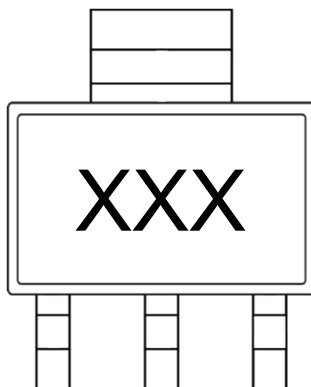


Circuit Diagram

Absolute maximum rating@25°C

Parameter	Symbol	PBCP54WK	PBCP55WK	PBCP56WK	Units
Collector-Base Voltage	V_{CBO}	45	60	100	V
Collector-Emitter Voltage	V_{CEO}	45	60	100	V
Emitter-Base Voltage	V_{EBO}	5.0			V
Collector Current -Continuous	I_C	1.0			A
Collector Power Dissipation	P_C	1.5			W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3			°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150			°C

Marking information



Note: Detailed Marking See table right

Type number	Marking code
PBCP54WK	P546
PBCP55WK	P556
PBCP56WK	P566

Electrical characteristics per line@25°C

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Collector-base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	54WK	45	-	-	V
			55WK	60	-	-	
			56WK	100	-	-	
Collector-emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	54WK	45	-	-	V
			55WK	60	-	-	
			56WK	100	-	-	
Emitter-base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$		5.0	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB}=30V, I_E=0$		-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5V, I_C=0$		-	-	0.1	μA
DC current gain	h_{FE}	$V_{CE}=2V, I_C=5mA$		25	-	-	
		$V_{CE}=2V, I_C=150mA$		100	-	250	
		$V_{CE}=2V, I_C=500mA$		25	-	-	
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		-	-	0.3	V
		$I_C=1A, I_B=50mA$		-	-	0.6	
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=50mA$		-	-	1.2	V
Base-emitter Voltage	$V_{BE(ON)}$	$V_{CE}=2V, I_C=500mA$		-	-	1.0	V
Transition Frequency	f_T	$V_{CE}=10V, I_C=50mA, f=100MHz$		-	125	-	MHz
Collector Output Capacitance	C_{Ob}	$V_{CB}=10V, I_E=0, f=1MHz$		-	-	10	pF

Typical Characteristics

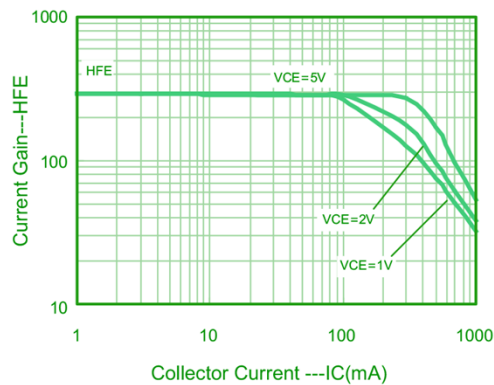


Fig 1. Current Gain vs Collector Current

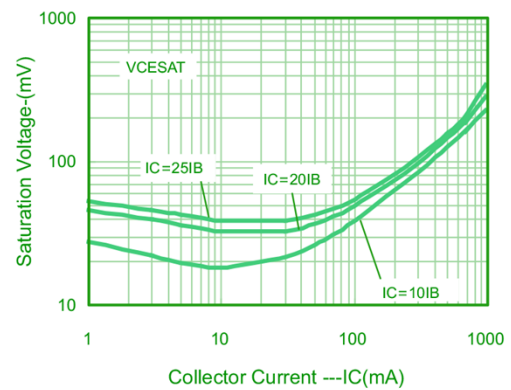


Fig 2. VCEsat vs Collector Current

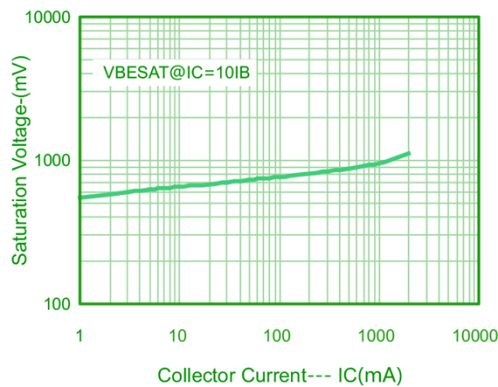


Fig 3. VBEsat vs Collector Current

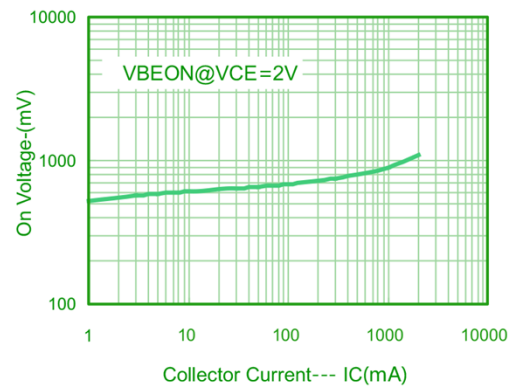


Fig 4. On Voltage vs Collector Current

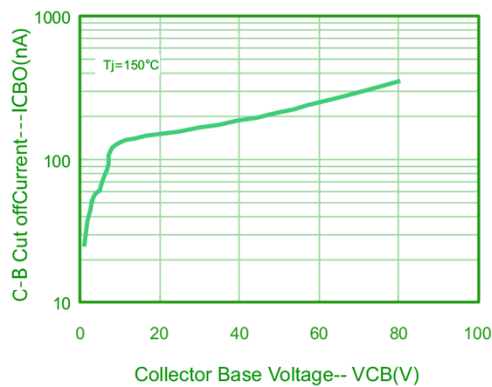


Fig 5. Typical Cut off Current Characteristics

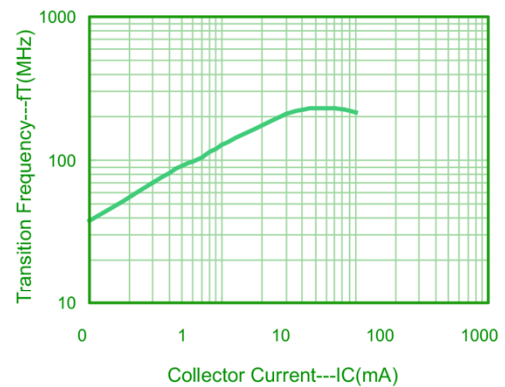


Fig 6. fT vs Collector Current

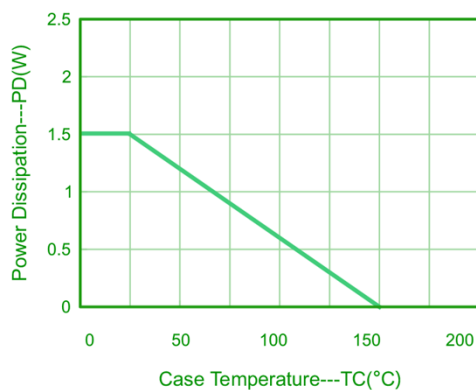
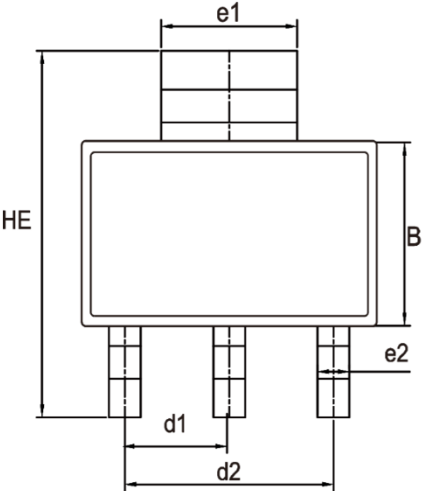
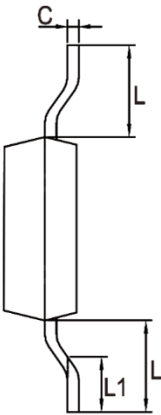


Fig 7. Power Derating Curve

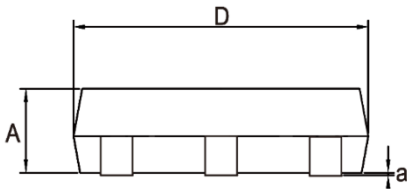
Product Dimension (SOT-223)



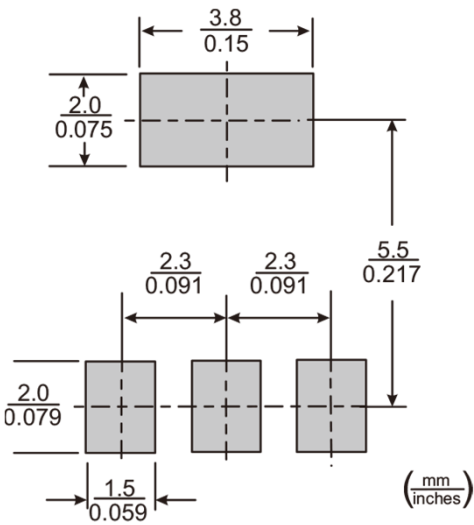
Top View



Side View



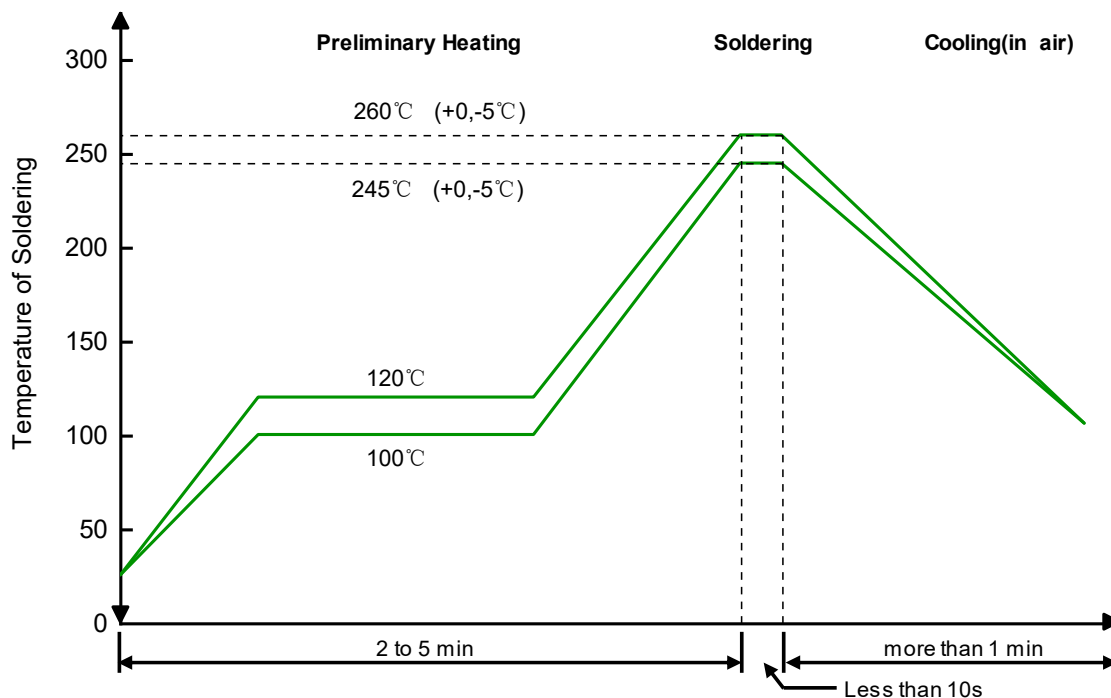
Side View



Suggested PCB Layout

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.55	1.65	0.061	0.065
B	3.30	3.70	0.130	0.146
C	0.254 Ref.		0.010 Ref.	
D	6.40	6.60	0.252	0.260
d1	2.30 BSC		0.091 BSC	
d2	4.60 BSC		0.181 BSC	
e1	2.90	3.10	0.114	0.122
e2	0.66	0.84	0.026	0.033
HE	6.80	7.20	0.268	0.283
L	1.75 Ref		0.069 Ref.	
a	0.00	0.10	0.000	0.004
L1	-	0.75	-	0.030
ALL	11°	13°	11°	13°

Solder Reflow Recommendation

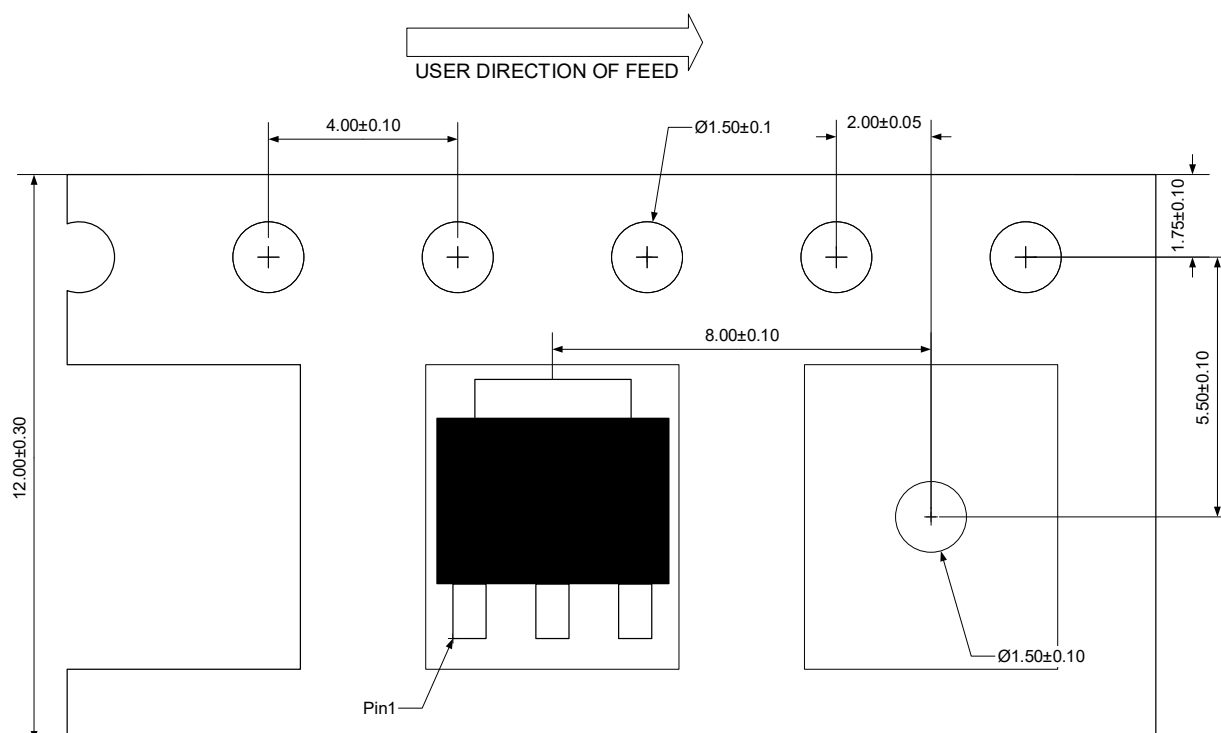


Remark: Pb free for 260°C; Pb for 245°C.

Ordering information

Package	Reel	Shipping
SOT-223	7"	1000 / Tape & Reel

Load with information



Unit:mm

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