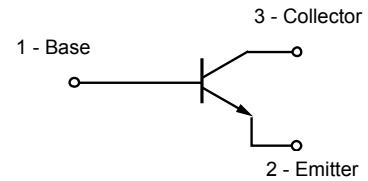


Feature

- This device is Pb-Free, Halogen Free/BFR Free and RoHS compliant.


Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness : ≤3mil

Structure

NPN epitaxial planar silicon transistor (Resistor built-in type)

Electrical characteristics per line@25°C (unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	50	-	-	V	$I_C=100\mu A, I_E=0$
BV_{CEO}	45	-	-	V	$I_C=1mA, I_B=0$
BV_{EBO}	5	-	-	V	$I_E=100\mu A, I_C=0$
I_{CBO}	-	-	50	nA	$V_{CB}=50V, I_E=0$
I_{EBO}	-	-	50	nA	$V_{BE}=5V, I_C=0$
$V_{CE(sat)}$	-	0.14	0.3	V	$I_C=100mA, I_B=5mA$
$V_{BE(sat)}$	-	0.84	1	V	$I_C=100mA, I_B=5mA$
$V_{BE(on)}$	0.58	0.63	0.7	V	$V_{CE}=5V, I_C=2mA$
h_{FE}	100	280	1000		$V_{CE}=5V, I_C=1mA$
f_T	150	270	-	MHz	$V_{CE}=5V, I_C=10mA$
Cob	-	2.20	3.5	pF	$V_{CB}=10V, f=1MHz, I_E=0$

Absolute maximum rating@25°C

Parameter	Symbol	Ratings	Units
Junction Temperature	T_j	+150	°C
Storage Temperature	T_{stg}	-55~+150	°C
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	45	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_D	450	mW

Characteristics Curve

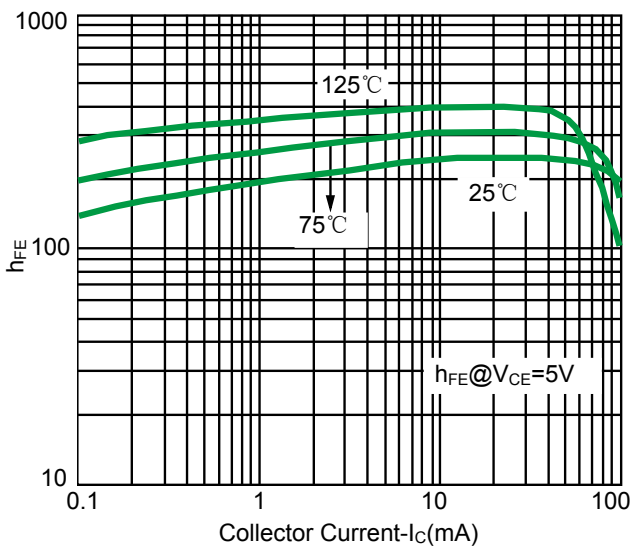


Fig 1. Current Gain & Collector Current

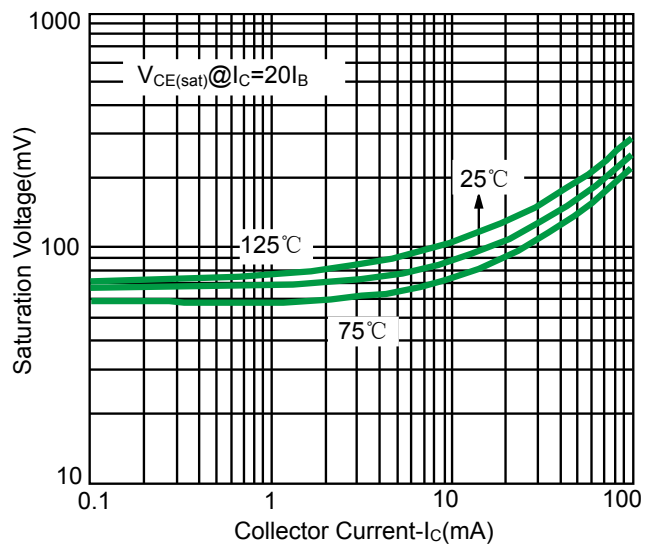


Fig 2. Saturation Voltage & Collector Current

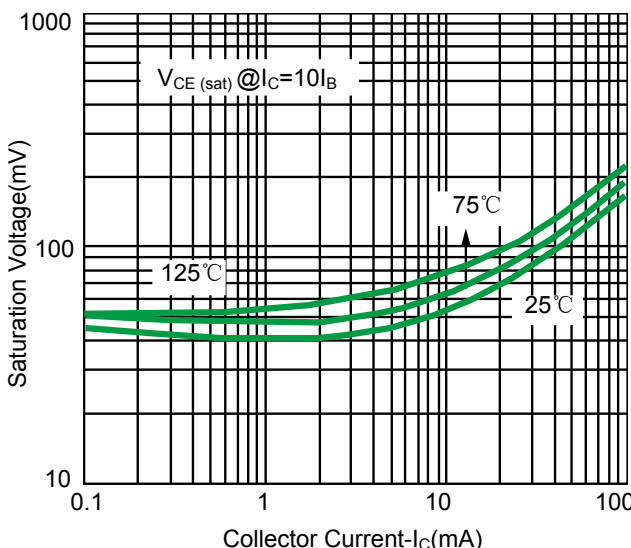


Fig 3. Saturation Voltage & Collector Current

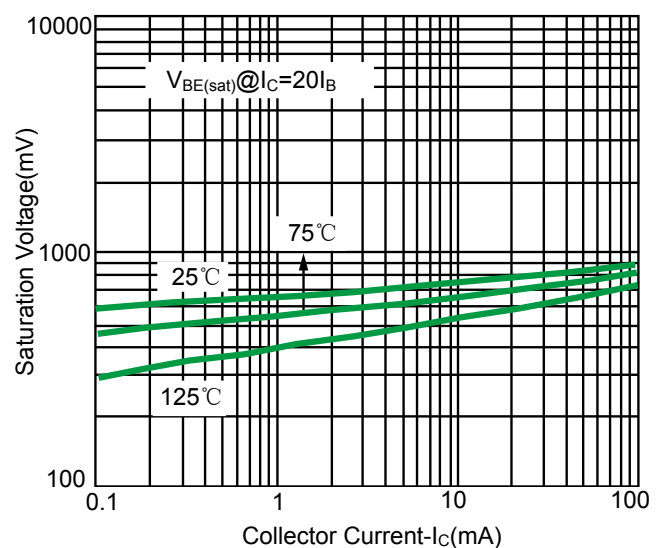


Fig 4. Saturation Voltage & Collector Current

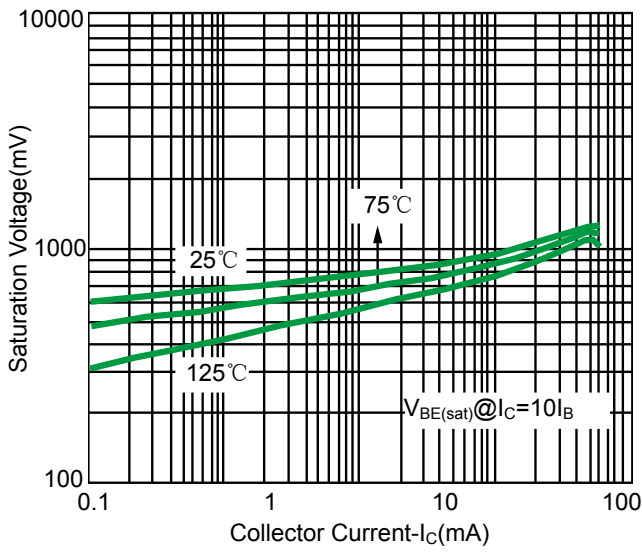


Fig 5. Saturation Voltage & Collector Current

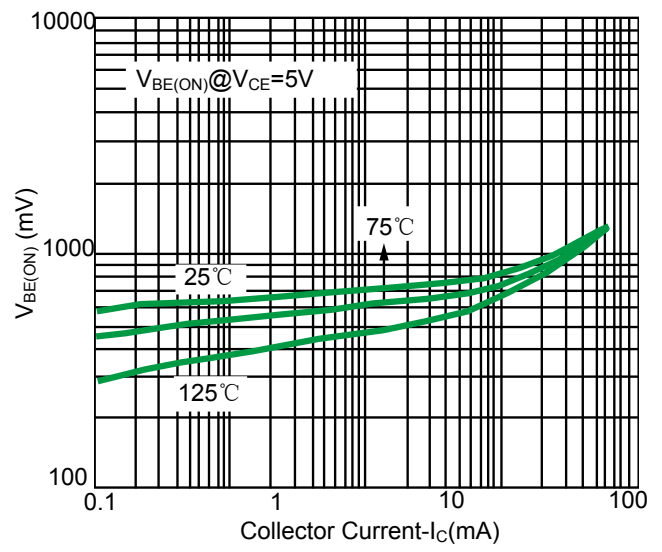


Fig 6. $V_{BE(ON)}$ & Collector Current

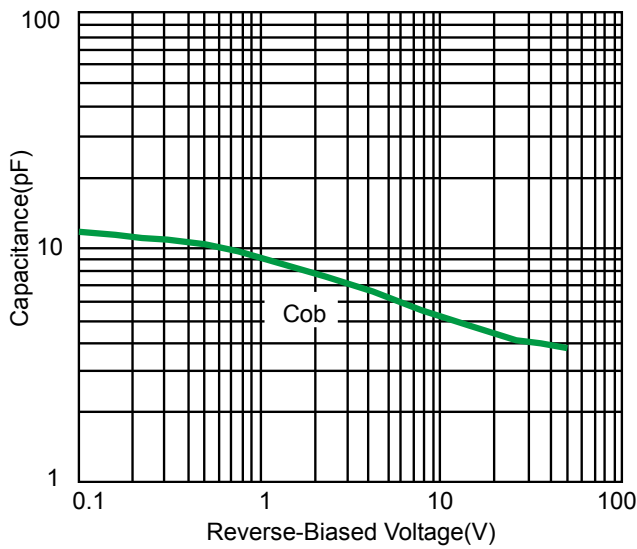


Fig 7. Capacitance & Reverse-Biased Voltage

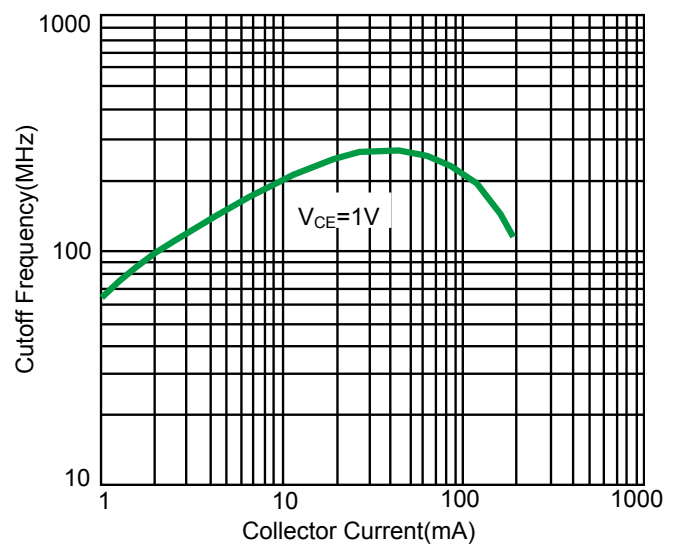
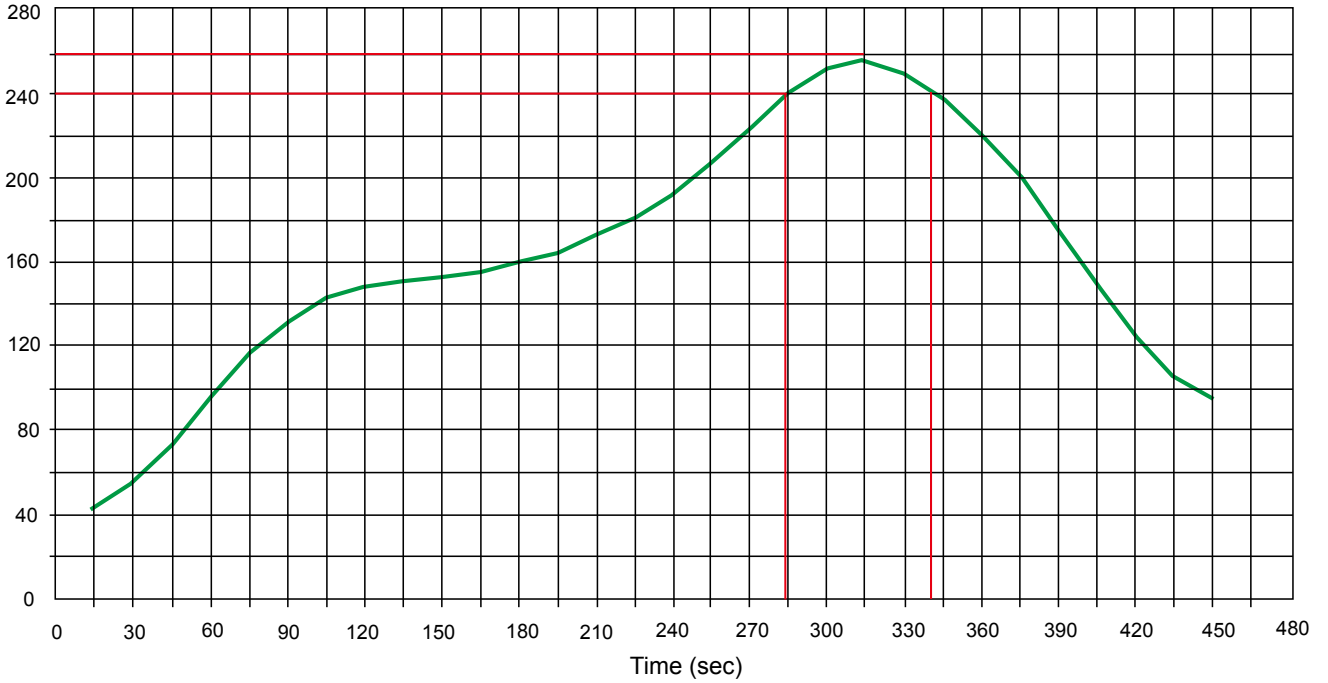


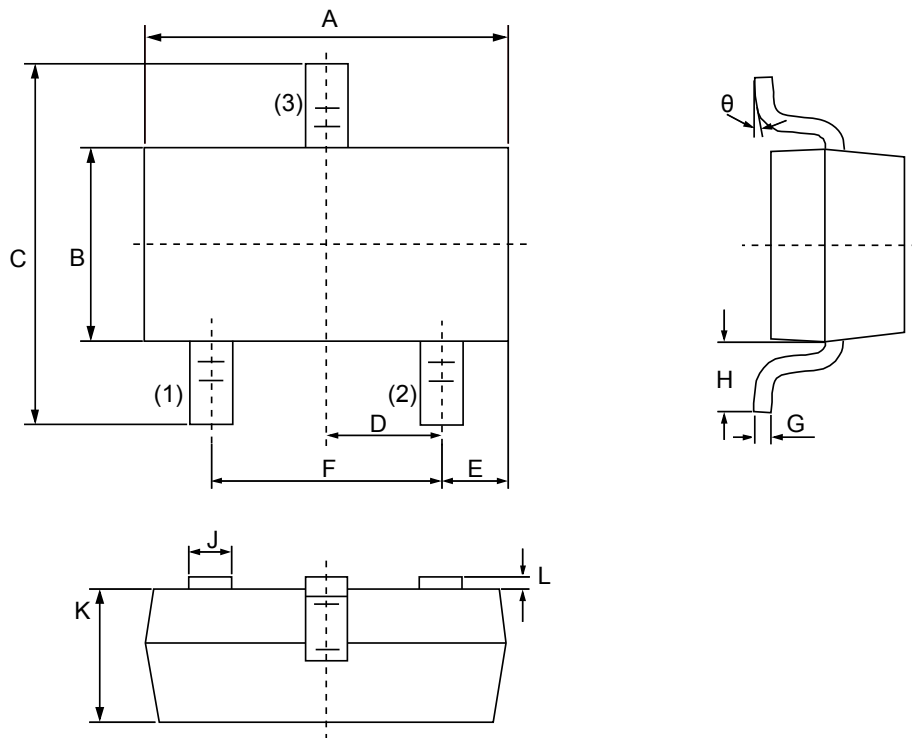
Fig 8. Cutoff Frequency & Collector Current

Solder Reflow Recommendation

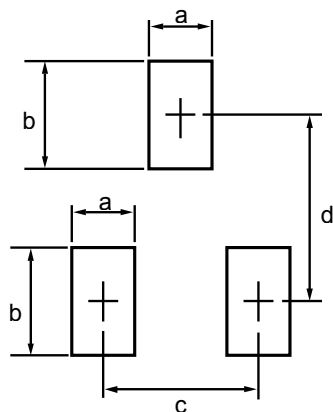
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension(SOT-23)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.80	3.00	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	2.10	2.50	0.0830	0.0984
D	0.89	1.02	0.0350	0.0401
E	0.45	0.60	0.0177	0.0236
F	1.78	2.04	0.0701	0.0807
G	0.085	0.177	0.0034	0.0070
H	0.45	0.60	0.0180	0.0236
J	0.37	0.50	0.0150	0.0200
K	0.89	1.11	0.0350	0.0440
L	0.013	0.100	0.0005	0.0040
θ	0°	10°	0°	10°




Dim	Millimeters	
	MIN	MAX
a	--	0.7
b	--	1.2
c	--	2.04
d	--	2.2

Ordering information

Device	Package	Shipping
PT23T9014	SOT-23 (Pb-Free)	3000 / Tape & Reel


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