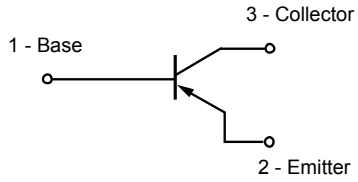
Feature

- PNP epitaxial planar silicon transistor



Mechanical Characteristics

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

Absolute maximum rating@25℃

Parameter	Symbol	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0	V
Collector Current - Continuous	I_C	-600	mA
Total Device Dissipation T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/℃
Thermal Resistance, Junction to Ambient	R_{qJA}	556	℃/W
Total Device Dissipation Alumina Substrate,(2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/℃
Thermal Resistance, Junction to Ambient	R_{qJA}	417	℃/W
Operating and Storage Junction Temperature Range	T_J T_{Stg}	-55to+15	℃

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-60	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-10uA,I_E=0	-60	-	-	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10uA,I_C=0	-5.0	-	-	V
Collector Cutoff Current	I_{CEX}	(V_{CE} = –30 V, V_{BE}(off) = –0.5 V)	-50	-	-	nA
Collector Cutoff Current	I_{CBO}	V_{CB}=-50V, I_E=0V V_{CB}=-50V, I_E=0,T_A=125℃	-	-	-0.010 -10	μA
Base Current	I_B	V_{CE}=-30V,$V_{EB(off)}$=-0.5V	-	-	-50	nA
ON CHARACTERISTICS						
DC Current Gain	H_{FE}	I_C=-0.1mA,V_{CE}=-10V	75	-	-	-
		I_C=-1.0mA,V_{CE}=-10V	100	-	-	
		I_C=-10mA,V_{CE}=-10V	100	-	-	
		I_C=-150mA,V_{CE}=-10V(3)	100	-	300	
		I_C=-500mA,V_{CE}=-10V(3)	50	-	-	
Collector-Emitter Saturation Voltage(3)	$V_{CE(sat)}$	I_C=-150mA,I_B=-15mA	-	-	-0.4	V
		I_C=-500mA,I_B=-50mA	-	-	-1.6	
Base-Emitter Saturation Voltage(3)	$V_{BE(sat)}$	I_C=-150mA,I_B=-15mA	-	-	-1.3	V
		I_C=-500mA,I_B=-50mA	-	-	-2.6	
SMALL SIGNAL CHARACTERISTICS						
Current-Gain-Bandwidth Product	f_T	I_C=-50mA,V_{CE}=-20V, f=100MHz	200	-	-	MHz
Output Capacitance	C_{obo}	V_{CB}=-10V,I_E=0, f=1.0MHz	-	-	8.0	pF
Input Capacitance	C_{ibo}	V_{EB}=-2.0V,I_C=0, f=1.0MHz	-	-	30	pF
SWITCHING CHARACTERISTICS						
Turn-On Time	(V_{CC}=-30V,I_C=-150mA,I_{B1}=-15mA)		t_{on}	-	45	ns
Delay Time			t_d	-	10	
Rise Time			t_r	-	40	
Turn-Off Time	(V_{CC}=-6.0V,I_C=-150mA,I_{B1}=I_{B2}=-15mA)		t_{off}	-	100	ns
Storage Time			t_s	-	80	
Fall Time			tf	-	30	

1. FR-5 = 1.0 X 0.75 X 0.062 in.
2. Alumina = 0.4 X 0.3 X 0.024 in. 99.5% alumina.
3. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
4. f_T is defined as the frequency at which |hfe| extrapolates to unity.

Typical Characteristics

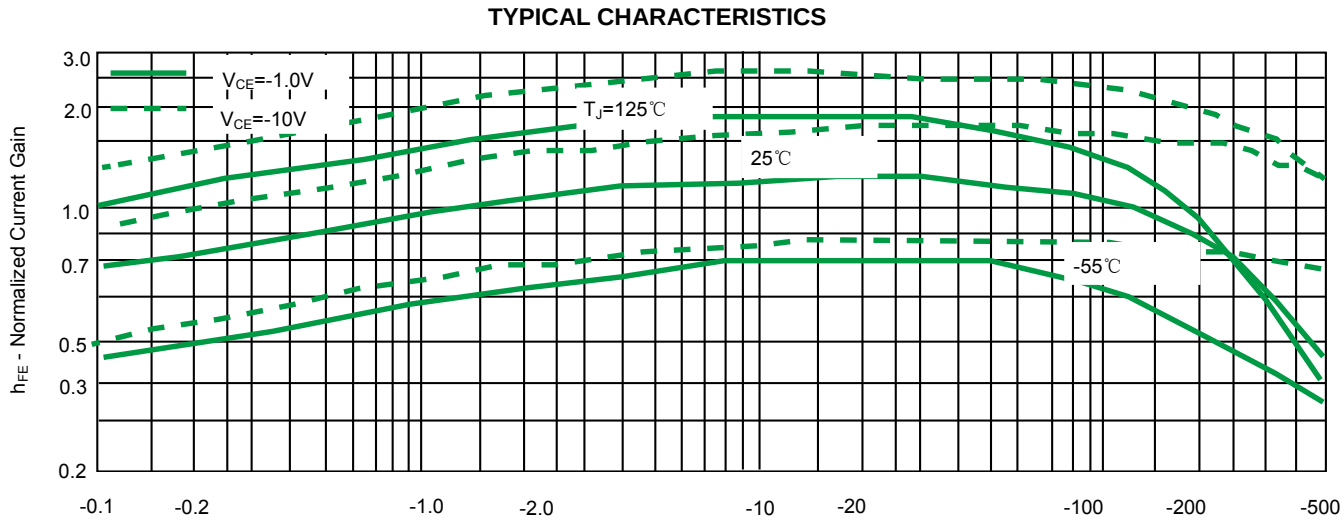


Figure1.DC Current Gain

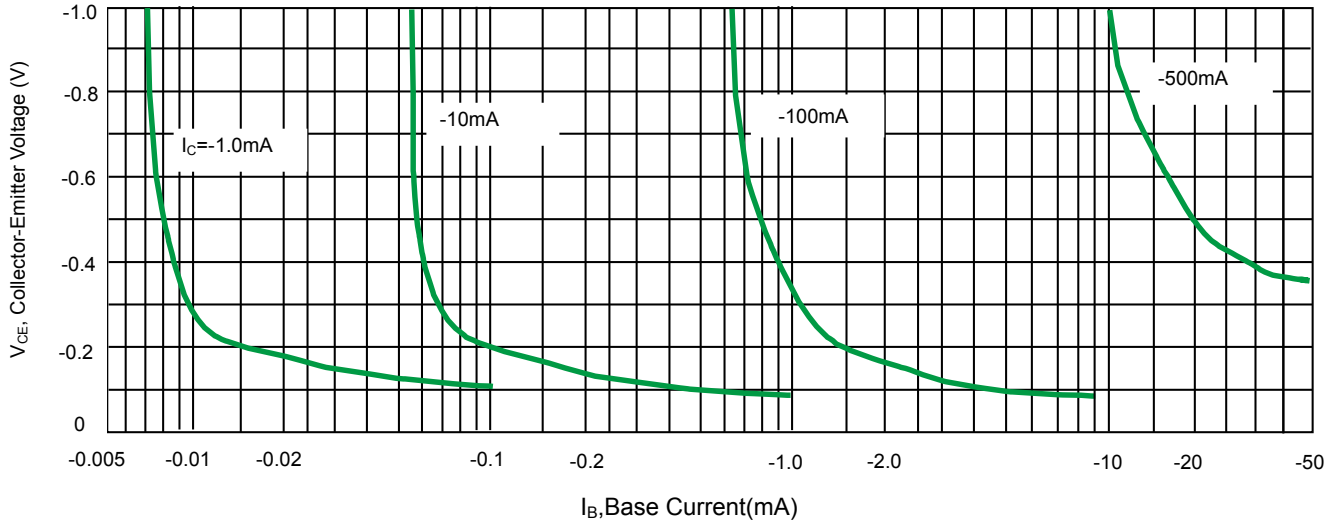


Figure2.Collector Saturation Region

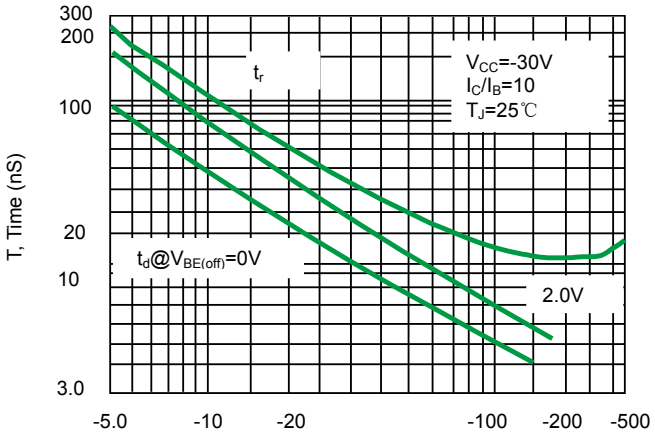


Figure3.Turn-On Time

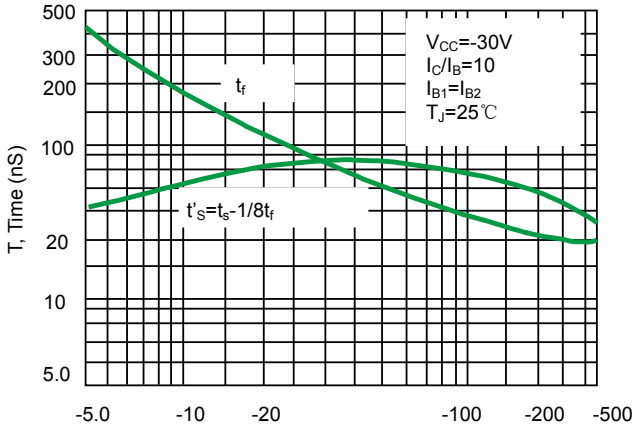


Figure4.Turn-Off Time

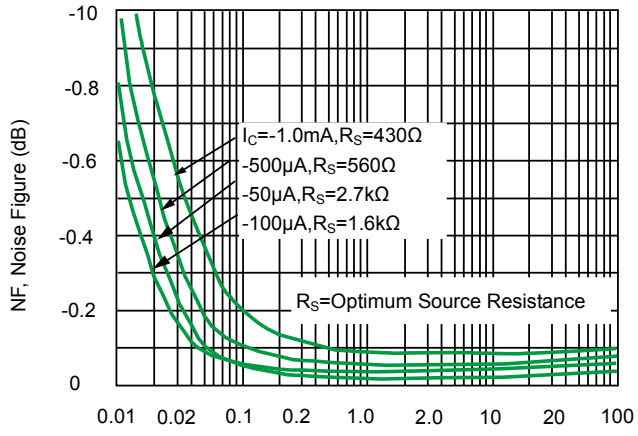


Figure5.Frequency Effects

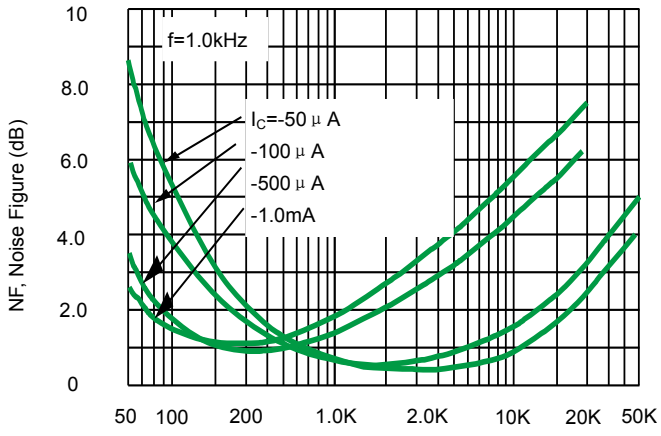


Figure6.Source Resiatance Effects

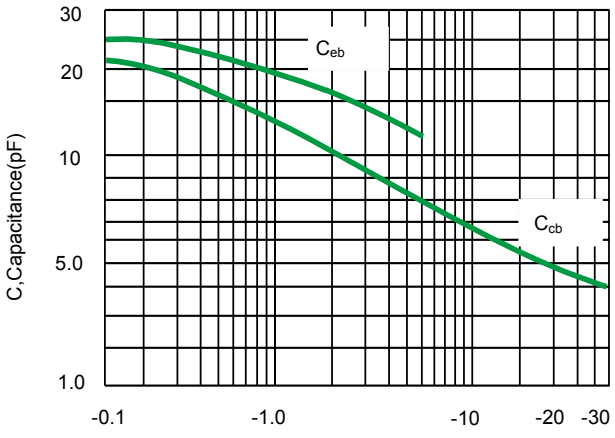


Figure7.Capacitance

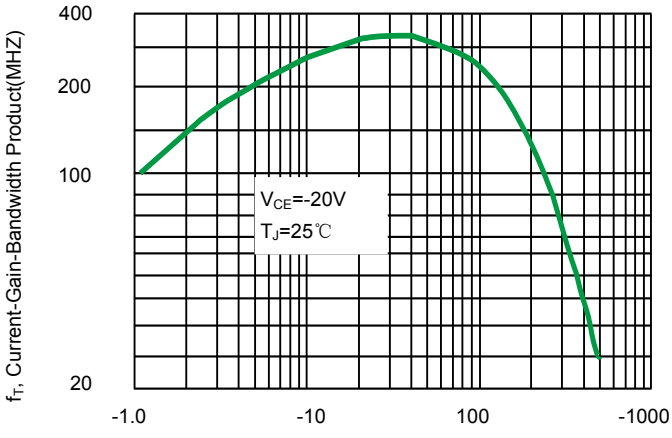


Figure8.Current-Gain-Bandwidth Product

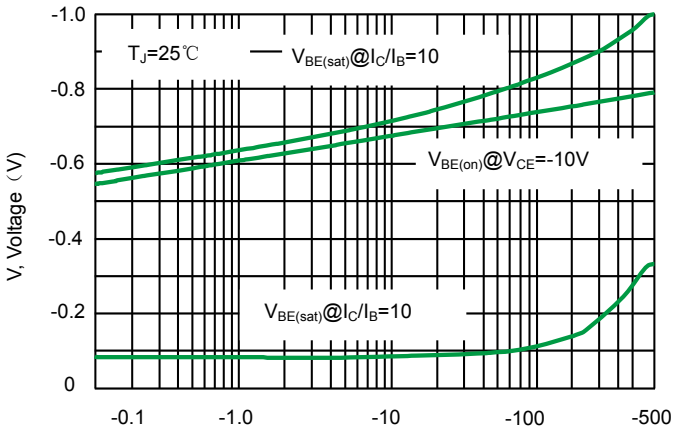


Figure9. "On" Voltage

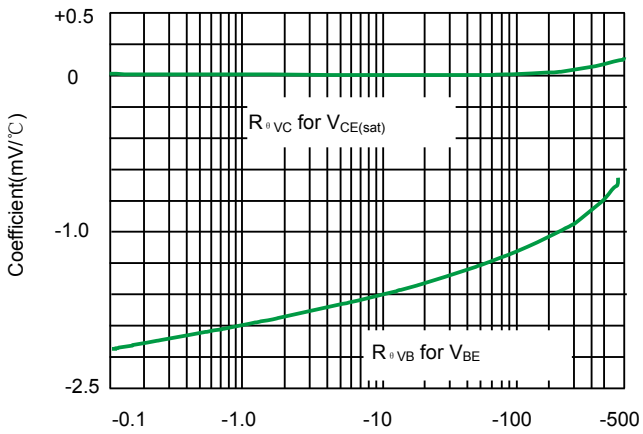
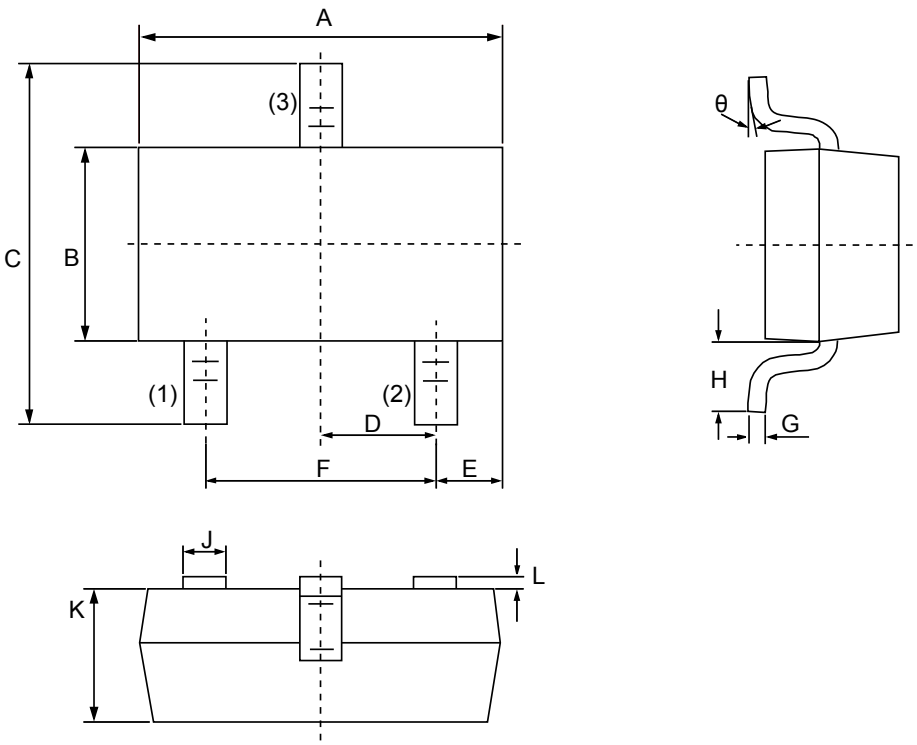
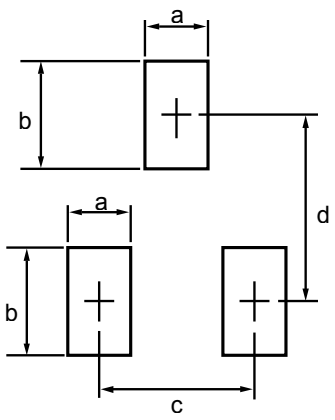


Figure10.Temperature Coeffcients

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
PT23T2907A	SOT-23 (Pb-Free)	3000 / Tape & Reel

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