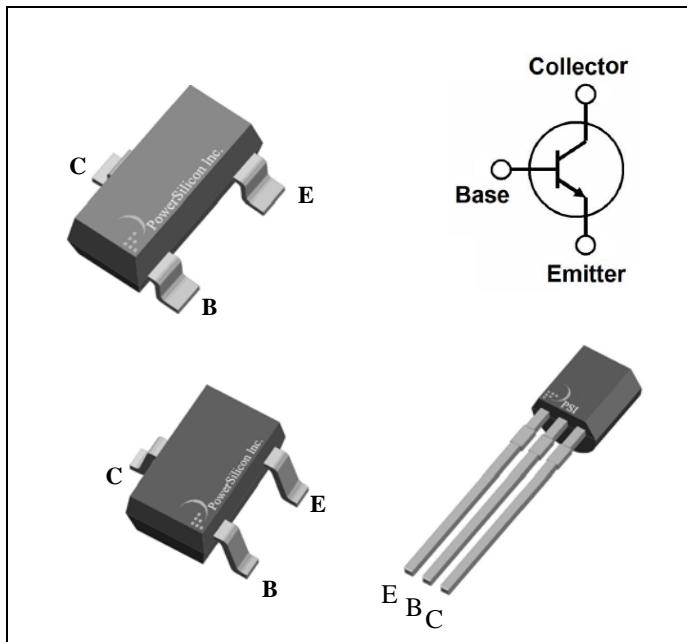


## PLASTIC-ENCAPSULATE TRANSISTORS NPN Silicon



### FEATURES

- Collector Current :  $I_C = 1.5A$

### MECHANICAL DATA

- Available in SOT-23, SOT-323, TO-92 Package
- Solderability : MIL-STD-202, Method 208
- Full RoHS Compliance

### ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING	MARKING CODE
SS8050□-△-T3	SOT-23	Tape Reel	Y1
SS8050□-△-3T3	SOT-323	Tape Reel	
SS8050□-△-T92	TO-92	Bulk	SS8050 LS yww
SS8050□-△-T92B	TO-92	Tape Box	

#### Notes:

1. □: none is for Lead Free package;  
“G” is for Halogen Free package.
2. △: Rank Of  $h_{FE}$ ; See Classification Of  $h_{FE}$
3. Marking Code: yww: y: Year code; ww: Week code.

### THERMAL DATA

PARAMETER	SYMBOL	SOT-323	SOT-23	TO-92	UNIT
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	625	357	120	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	-	90	20	°C/W

**Notes:**

4.  $R_{\theta JA}$  is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins.  $R_{\theta JC}$  is guaranteed by design while  $R_{\theta CA}$  is determined by the user's board design. The value of  $R_{\theta JA}$  is measured with device mounted on 1 in<sup>2</sup> FR-4 board with 2 oz copper.

### ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ C$ , unless otherwise noted.

PARAMETER	SYMBOL	VALUES	UNIT
Collector-Emitter Voltage	$V_{CEO}$	25	V
Collector-Base Voltage	$V_{CBO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current-Continuous	$I_C$	1.5	A
Power Dissipation	TO-92	$P_C$	W
	SOT-23		
	SOT-323		
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	°C

## ELECTRICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$ , unless otherwise noted.

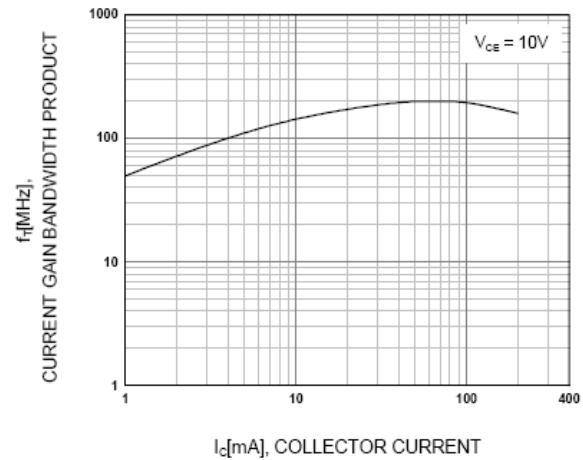
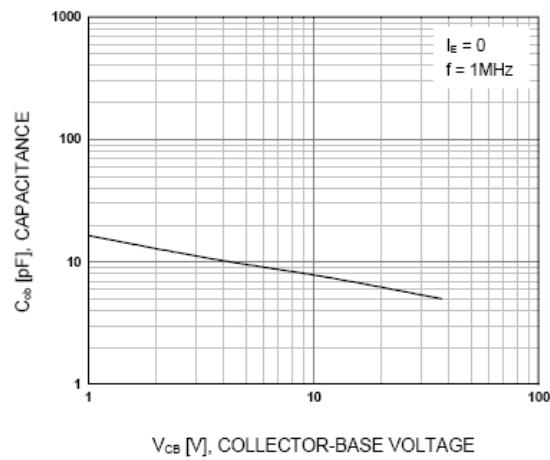
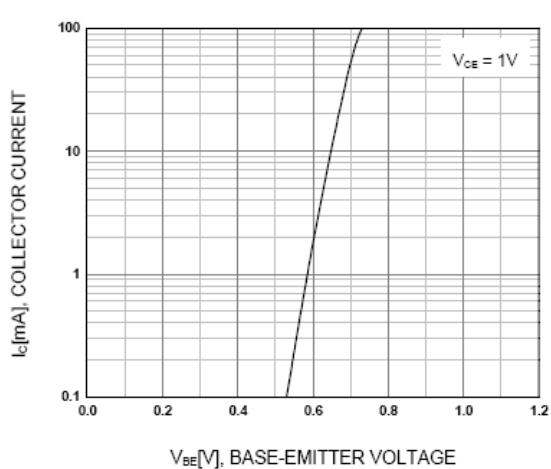
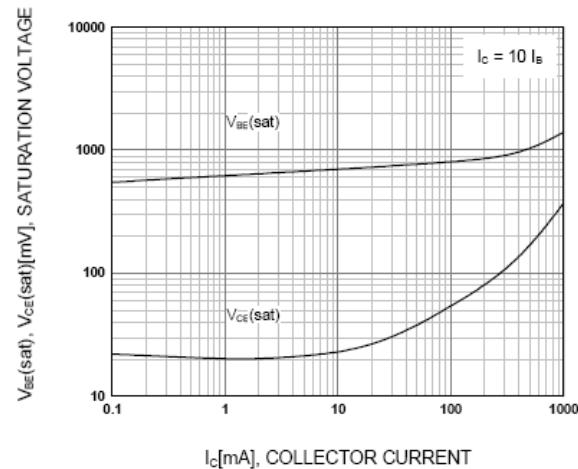
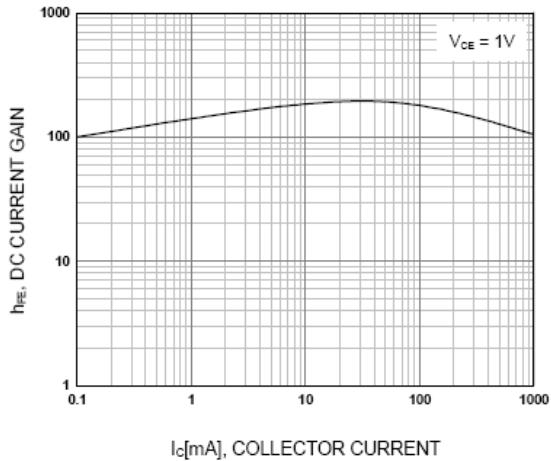
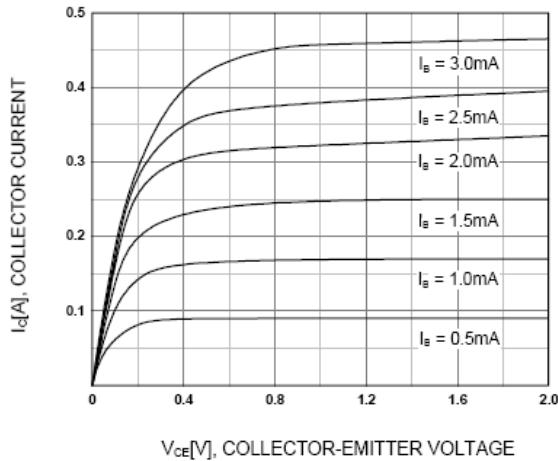
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
<b>OFF CHARACTERISTICS</b>							
Collector-Emitter Breakdown Voltage	$V_{(\text{BR})\text{CEO}}$	$I_C = 0.1\text{mA}, I_B = 0$	25			V	
Collector-Base Breakdown Voltage	$V_{(\text{BR})\text{CBO}}$	$I_C = 100 \mu\text{A}, I_E = 0$	40			V	
Emitter-Base Breakdown Voltage	$V_{(\text{BR})\text{EBO}}$	$I_E = 100 \mu\text{A}, I_C = 0$	5			V	
Emitter Cut-off Current	$I_{\text{EBO}}$	$V_{\text{EB}} = 5\text{V}, I_C = 0$		0.1		$\mu\text{A}$	
Collector Cut-off Current	$I_{\text{CBO}}$	$V_{\text{CB}} = 40\text{V}, I_E = 0$		0.1		$\mu\text{A}$	
Collector Cut-off Current	$I_{\text{CEO}}$	$V_{\text{CE}} = 20\text{V}, I_B = 0$		0.1		$\mu\text{A}$	
<b>ON CHARACTERISTICS</b>							
DC Current Gain	TO-92	$h_{\text{FE}(1)}$	$V_{\text{CE}} = 1\text{V}, I_C = 100\text{mA}$	85		400	
	SOT-23, SOT-323			120		400	
		$h_{\text{FE}(2)}$	$V_{\text{CE}} = 1\text{V}, I_C = 800\text{mA}$	50			
Collector-Emitter Saturation Voltage	$V_{\text{CE}(\text{sat})}$	$I_C = 800\text{mA}, I_B = 80\text{mA}$			0.5	V	
Base-Emitter Saturation Voltage	$V_{\text{BE}(\text{sat})}$	$I_C = 800\text{mA}, I_B = 80\text{mA}$			1.2	V	
<b>SMALL-SIGNAL CHARACTERISTICS</b>							
Transition Frequency	$f_T$	$I_C = 50\text{mA}, V_{\text{CE}} = 10\text{V}, f = 30\text{MHz}$	100			MHz	

### CLASSIFICATION OF $h_{\text{FE}(1)}$

SOT-23, SOT-323 RANK	L	H	J
$h_{\text{FE}(1)}$ RANGE	120~200	200~350	300~400

TO-92 RANK	B	C	D	D3
$h_{\text{FE}(1)}$ RANGE	85~160	120~200	160~300	300~400

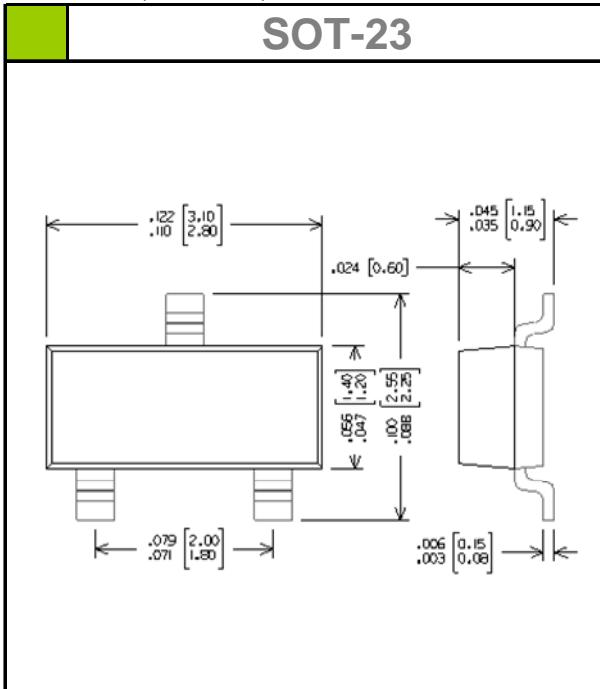
## TYPICAL PERFORMANCE CHARACTERISTICS



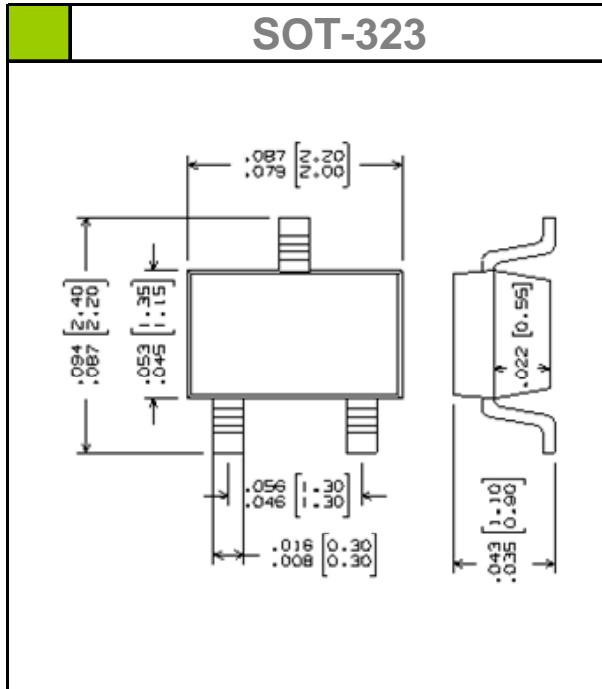
## **PHYSICAL DIMENSION**

Unit : Inch (Millimeter)

SOT-23



SOT-323



TO-92

