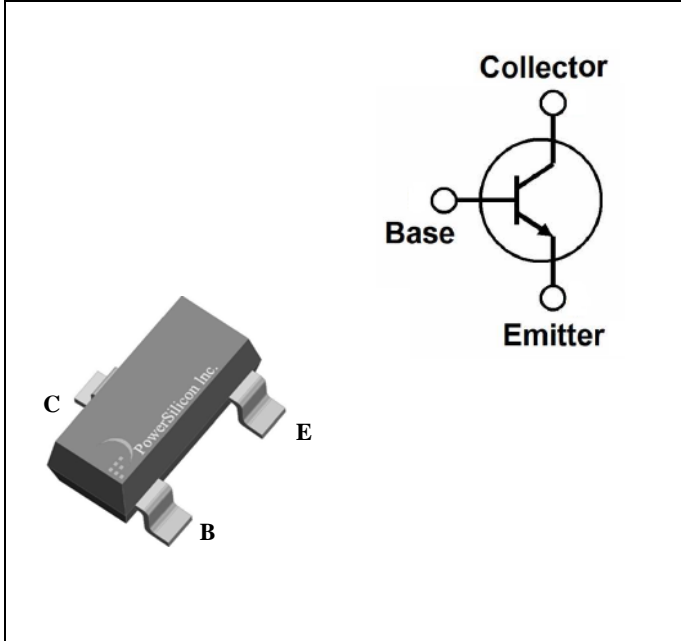


PLASTIC-ENCAPSULATE TRANSISTORS NPN Silicon



FEATURES

- Collector Current : $I_C = 0.5A$

MECHANICAL DATA

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

ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING	MARKING CODE
S8050□-△-T3	SOT-23	Tape Reel	J3Y

Notes:

- : none is for Lead Free package;
"G" is for Halogen Free package.
- △: Rank Of h_{FE} ; See Classification Of h_{FE}

THERMAL DATA

PARAMETER	SYMBOL	VALUES	UNIT
Thermal Resistance, Junction-to-Ambient	$R_{\theta_{JA}}$	357	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta_{JC}}$	90	°C/W

Notes:

- $R_{\theta_{JA}}$ 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 in² FR-4 board with 2 oz copper.

ABSOLUTE MAXIMUM RATINGS
 $T_A = 25^\circ\text{C}$, 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	0.5	A
Power Dissipation	P_C	0.3	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

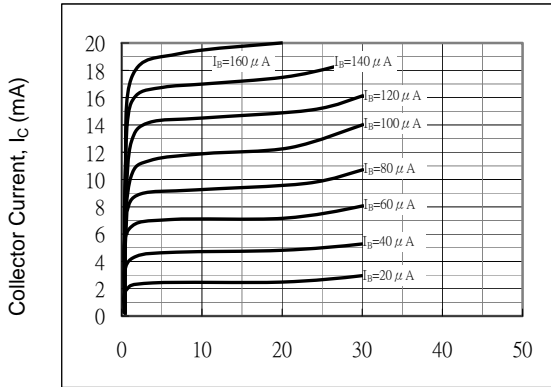
ELECTRICAL CHARACTERISTICS
 $T_A = 25^\circ\text{C}$, unless otherwise noted.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	25			V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\ \mu\text{A}, I_E = 0$	40			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\ \mu\text{A}, I_C = 0$	5			V
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			0.1	μA
Collector Cut-off Current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$			0.1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 20\text{V}, I_B = 0$			0.1	μA
ON CHARACTERISTICS						
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 1\text{V}, I_C = 50\text{mA}$	120		350	
	$h_{FE(2)}$	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$	50			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$			1.2	V
SMALL-SIGNAL CHARACTERISTICS						
Transition Frequency	f_T	$I_C = 20\text{mA}, V_{CE} = 6\text{V}, f = 30\text{MHz}$	150			MHz

CLASSIFICATION OF $h_{FE(1)}$

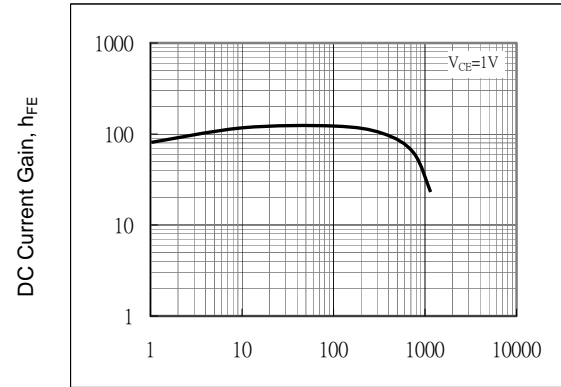
RANK	L	H
$h_{FE(1)}$ RANGE	120~200	200~350

TYPICAL PERFORMANCE CHARACTERISTICS



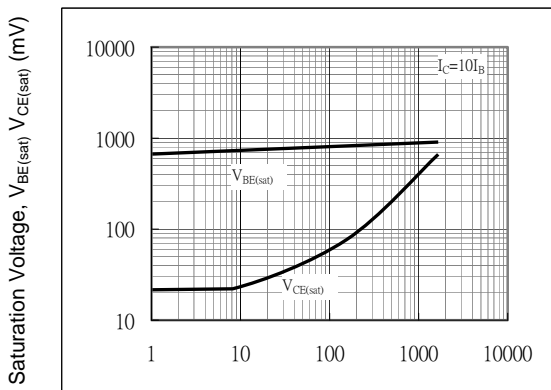
Collector-Emitter Voltage, V_{CE} (V)

Fig.- Static Characteristic



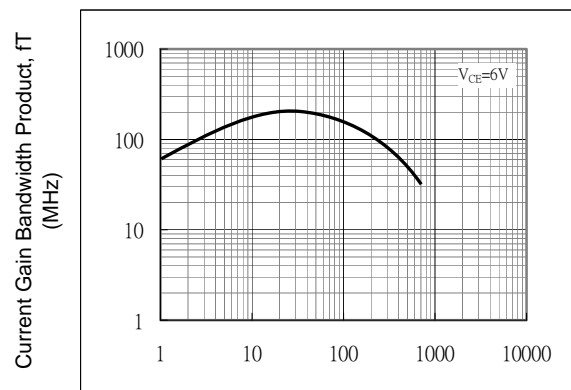
Collector Current, I_C (mA)

Fig.2 - DC Current Gain



Collector Current, I_C (mA)

Fig.3 - Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Collector Current, I_C (mA)

Fig.4 - Current Gain Bandwidth Product

PHYSICAL DIMENSION

Unit : Inch(Millimeter)

