S8050

ROHS

Plastic-Encapsulate Transistor(NPN)

www.unsemi.com.tw

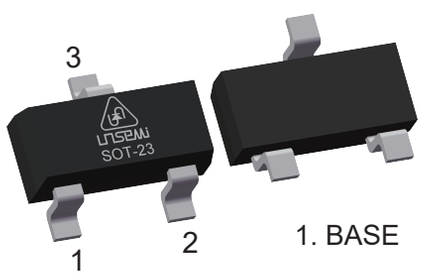
Features

- Complimentary to S8550
- Collector Current : Ic=0.5A

Mechanical Data

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating : UL 94V-O
- Lead Finish : Lead Free
- Marking : J3Y

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

Maximum Ratings (T_A=25℃ Unless Otherwise Noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	0.5	A
Collector Power Dissipation	P_C	0.3	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	417	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	Tstg	-55~150	℃

Electrical Characteristics(Tamb=25℃ Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	40		V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	25		V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	5		V
Collector Cut-Off Current	I_{CEX}	V_{CE} = 20V, I_B = 0		0.1	μA
Collector Cut-Off Current	I_{CBO}	V_{CB} = 40V, 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_{FE1}	V_{CE} = 1V, I_C = 50mA	200	350	
	h_{FE2}	V_{CE} = 1V, I_C = 500mA	50		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA		0.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 500mA, I_B = 50mA		1.2	V
Transition Frequency	f_T	V_{CE} = 6V, I_C = 20mA, f = 30MHz	150		MHz

Classification of h_{FE}(1)

Parameter	Units
h_{FE}	200-350

Electrical Characteristics Curves

Fig. 1 Static Characteristic

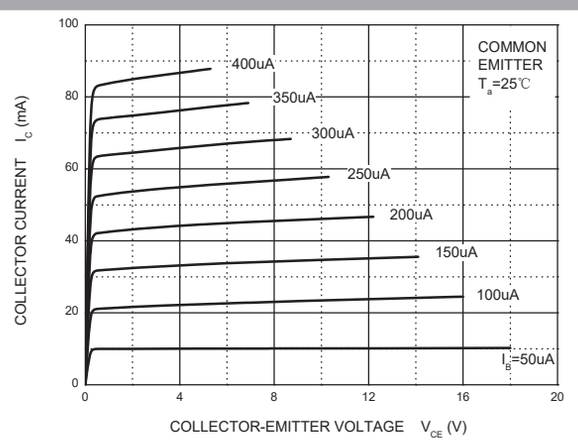


Fig. 2 hFE — Ic

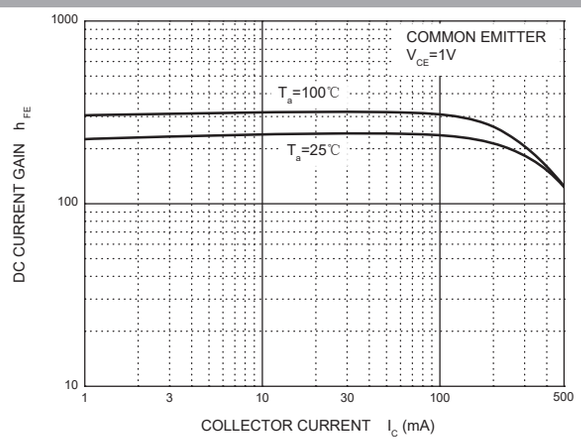


Fig. 3 $V_{CE(sat)}$ — Ic

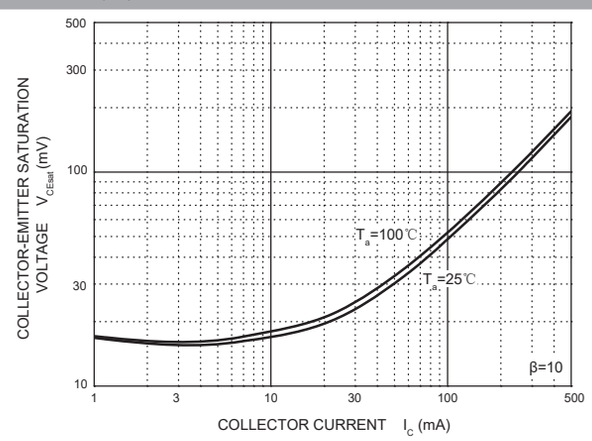


Fig. 4 $V_{BE(sat)}$ — Ic

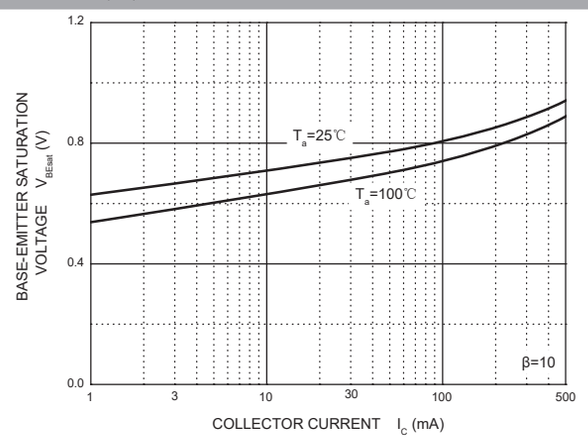


Fig. 5 Ic — VBE

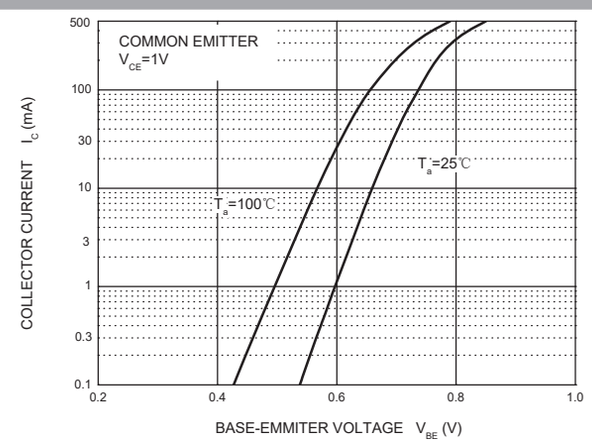
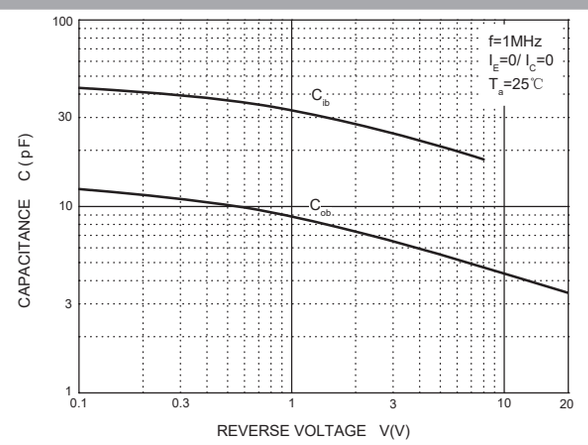


Fig. 6 Cob/ Cib — VCB/ VEB



Electrical Characteristics Curves

Fig. 7 fT — Ic

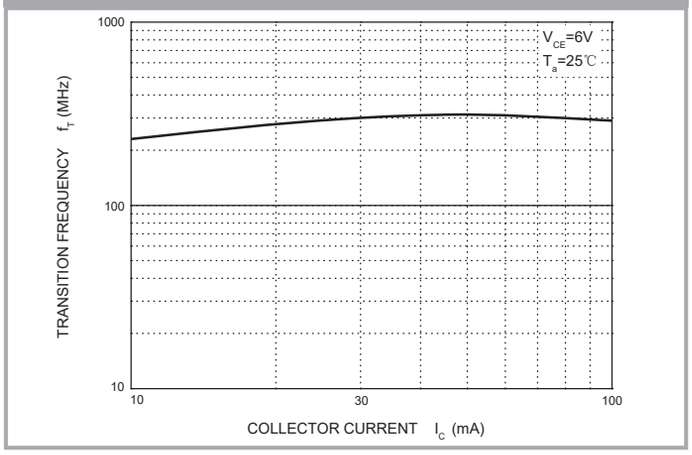
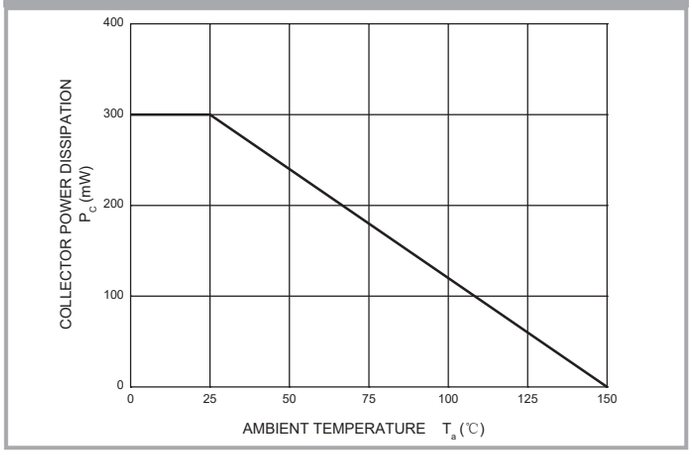
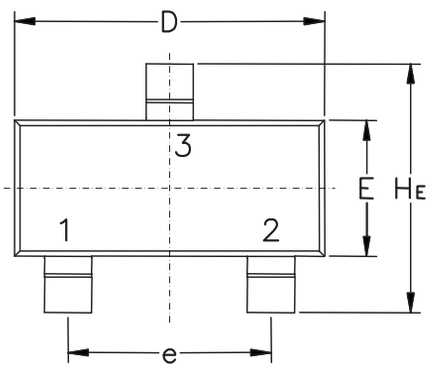


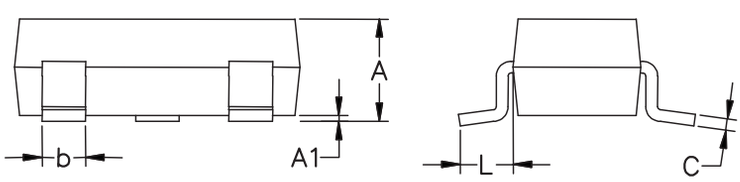
Fig. 8 Pc — Ta



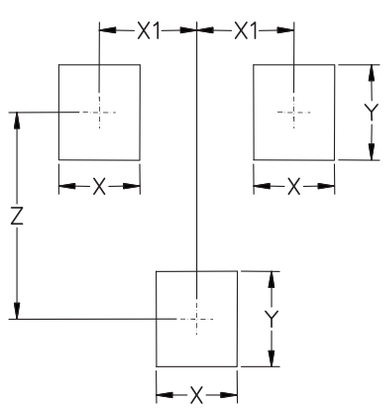
SOT-23 Package Outine & Dimensions (Units: mm / in)



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	1.05	1.11	1.25	0.042	0.044	0.050
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.30	0.44	0.50	0.012	0.018	0.020
C	0.09	0.13	0.20	0.003	0.005	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.50	1.60	1.70	0.059	0.051	0.067
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.65	2.80	2.95	0.104	0.112	0.116



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.96	0.037
Y	0.90	0.035
Z	2.40	0.096

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ROHS

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