C1815

ROHS

Plastic-Encapsulate Transistor(NPN)

Feature

- Power Dissipation

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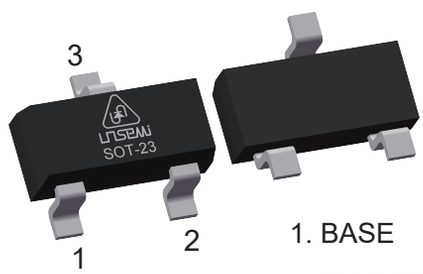
Mechanical Data

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating : UL 94V-O
- Quantity Per Reel : 3,000pcs
- Marking : HF

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}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	0.15	A
Collector Power Dissipation	P_C	0.2	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	℃/W
Junction Temperature Range	T_J	-55~+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	60		V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 0.1mA, I_B = 0	50		V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	5		V
Collector Cut-Off Current	I_{CBO}	V_{CB} = 60V, I_E = 0		0.1	μA
Collector Cut-Off Current	I_{CEO}	V_{CE} = 50V, I_B = 0		0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB} = 5V, I_C = 0		0.1	μA
DC Current Gain	h_{FE}	V_{CE} = 6V, I_C = 2mA	130	400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 10mA		0.25	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 100mA, I_B = 10mA		1.0	V
Transition Frequency	f_T	V_{CE} = 10V, I_C = 1mA, f = 30MHz	80		MHz

Classification of h_{FE}

Rank	L	H
Range	130-200	200-400

Electrical Characteristics Curves

Fig. 1 Static Characteristic

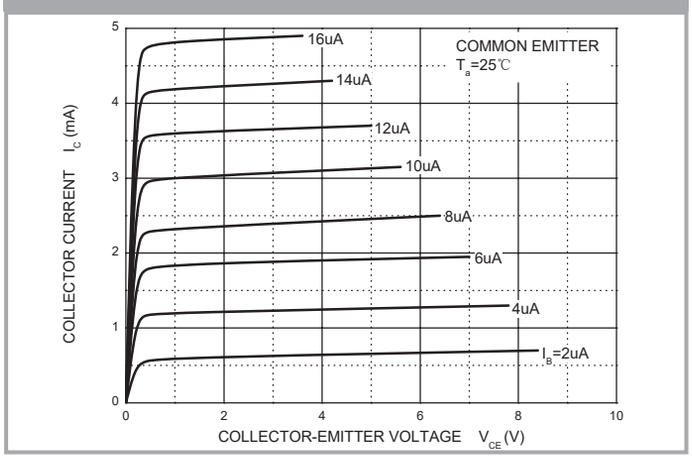
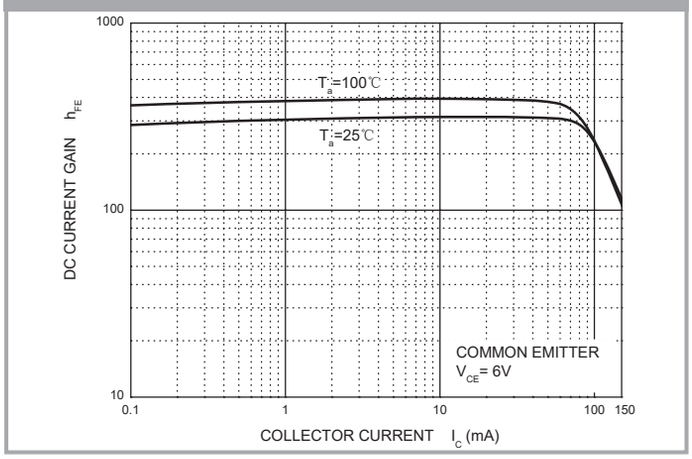


Fig. 2 h_{FE} — I_C



Electrical Characteristics Curves

Fig. 3 $V_{CE(sat)}$ — Ic

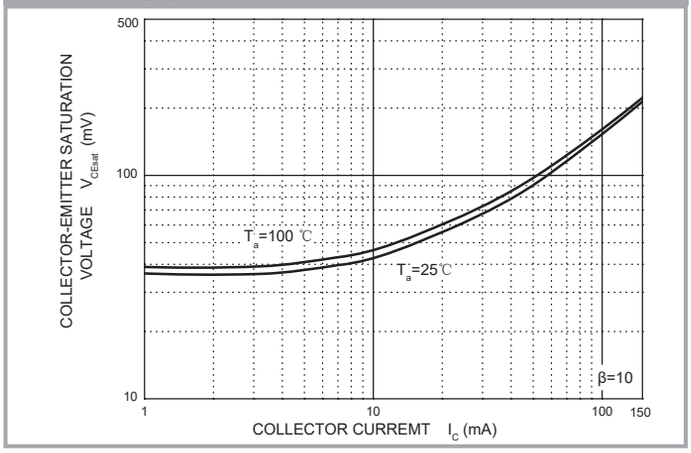


Fig. 4 $V_{BE(sat)}$ — Ic

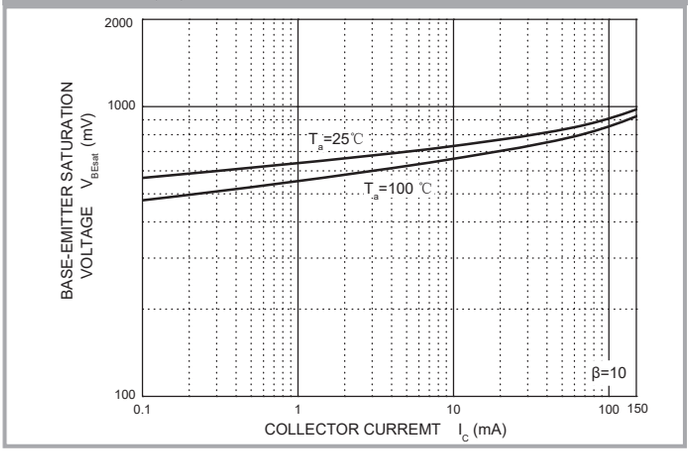


Fig. 5 Ic — VBE

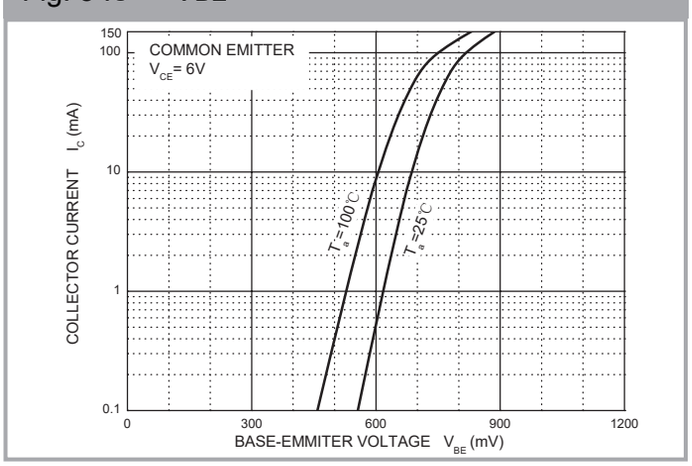


Fig. 6 Cob/ Cib — VCB/ VEB

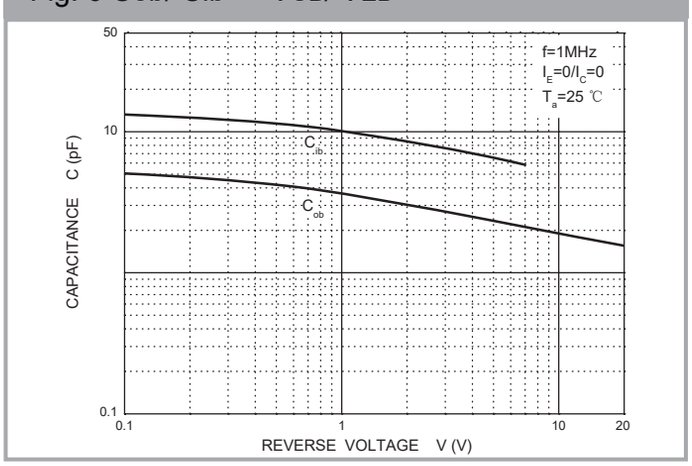


Fig. 7 fT — Ic

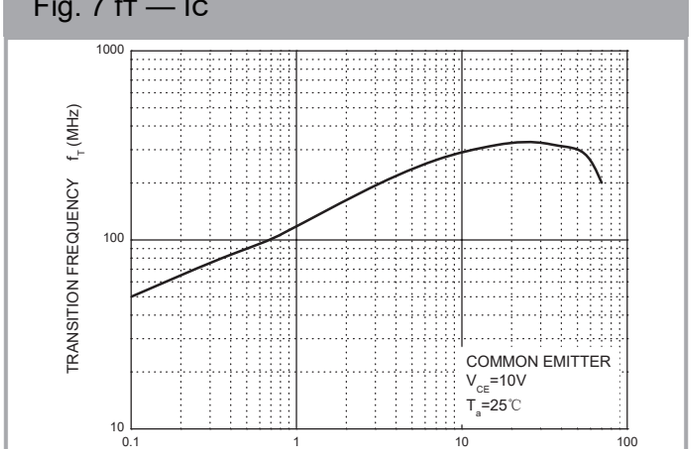
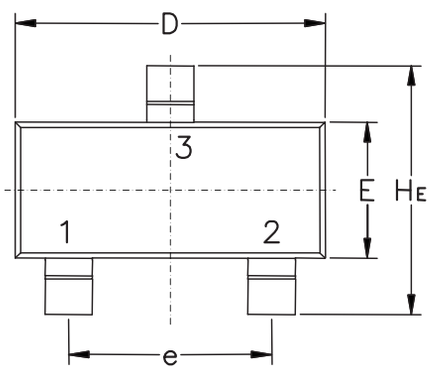
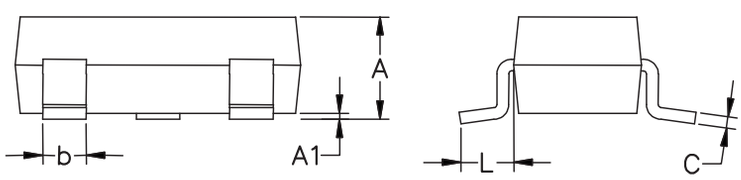


Fig. 8 Pc — Ta

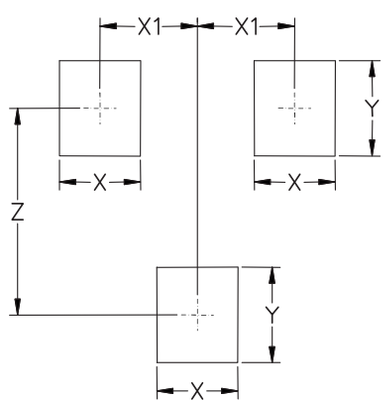
SOT-23 Package Outine & Dimensions (Units: mm / in)



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
C	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.96	0.037
Y	0.90	0.035
Z	2.00	0.079

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ROHS

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