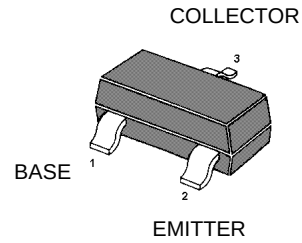
TRANSISTOR（NPN）

FEATURE

Ideally suited for automatic insertion

For Switching and AF Amplifier Applications

MARKING:1K



SOT-23

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current –Continuous	0.1	A
P_{C*}	Collector Power Dissipation	200	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V_{CBO}	I_C= 10μA, I_E=0	30			V
Collector-emitter breakdown voltage	V_{CEO}	I_C= 10mA, I_B=0	30			V
Emitter-base breakdown voltage	V_{EBO}	I_E= 10μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=30 V , I_E=0			0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}=30 V , I_B=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5 V , I_C=0			0.1	μA
DC current gain	h_{FE}	V_{CE}= 5V, I_C= 2mA	200		450	
Collector-emitter saturation voltage	V_{CE}(sat)	I_C=100mA, I_B= 5mA			0.5	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C=100mA, I_B= 5mA			1.1	V
Transition frequency	f_T	V_{CE}= 5 V, I_C= 10mA f=100MHz	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, f=1MHz			4.5	pF

Typical Characteristics

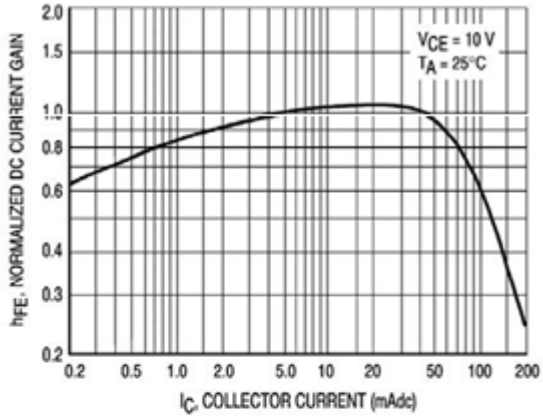


Figure 1. Normalized DC Current Gain

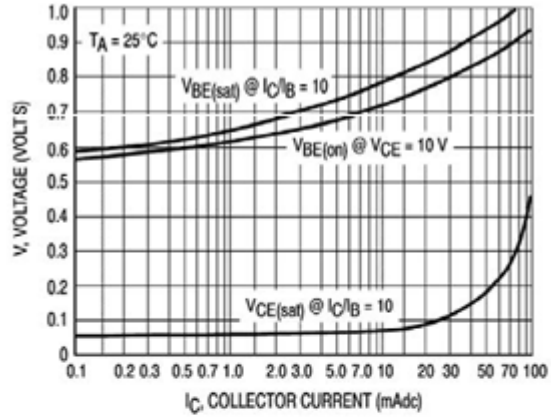


Figure 2. "Saturation" and "On" Voltages

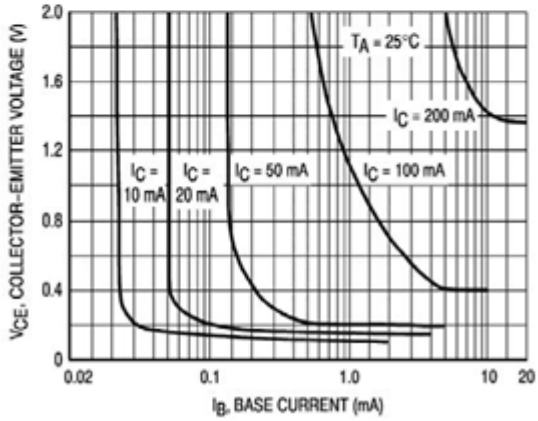


Figure 3. Collector Saturation Region

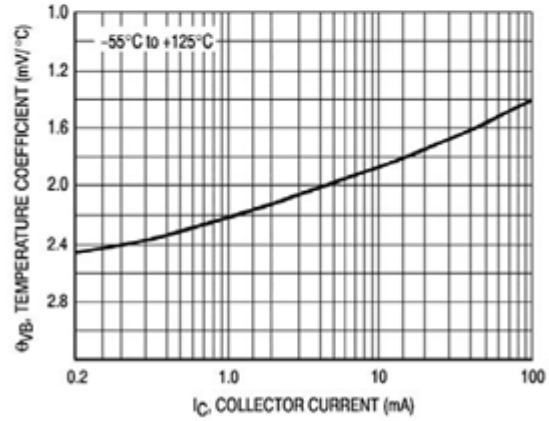


Figure 4. Base–Emitter Temperature Coefficient

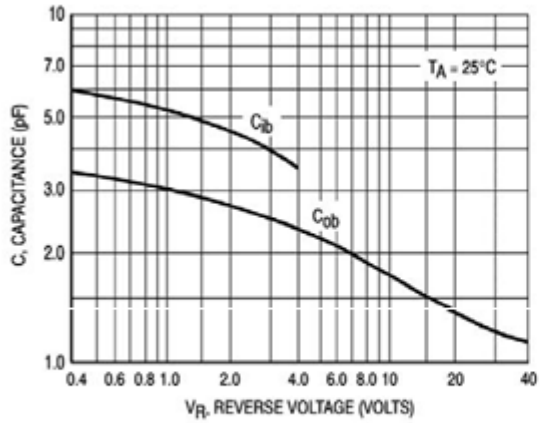


Figure 5. Capacitances

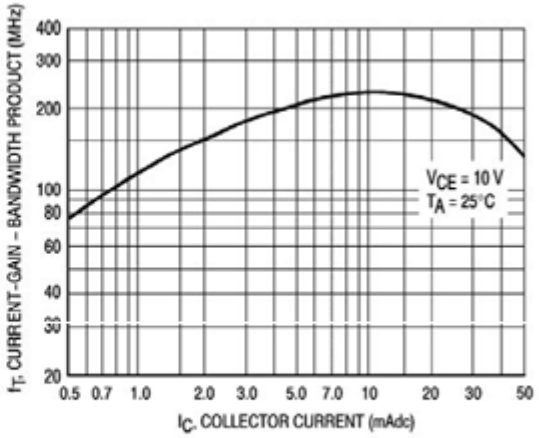
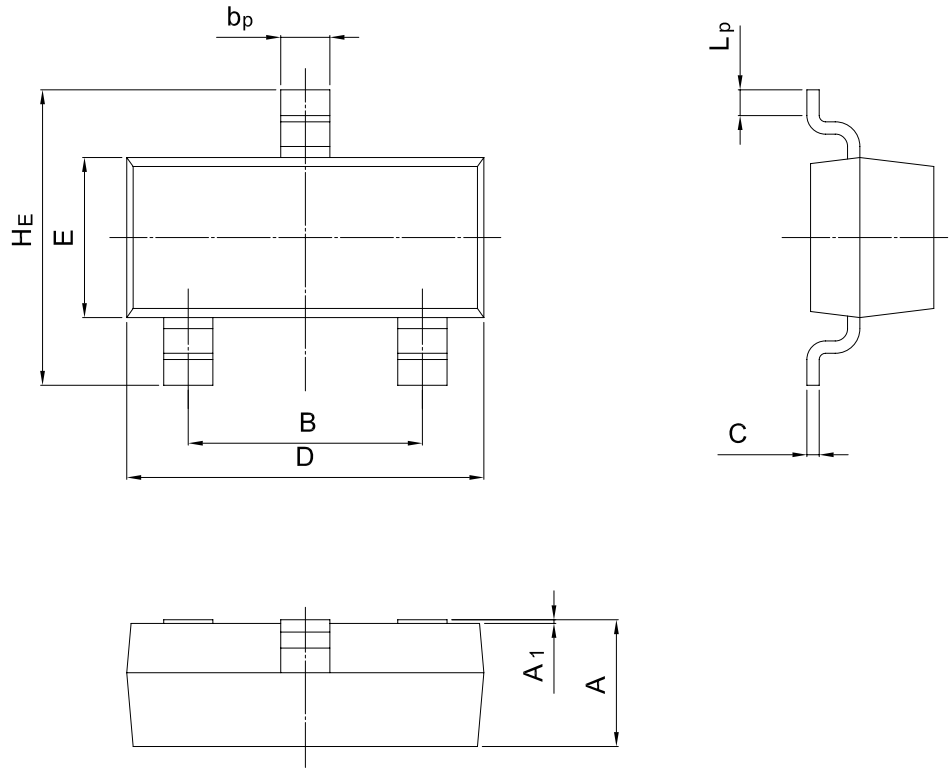


Figure 6. Current–Gain – Bandwidth Product

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20