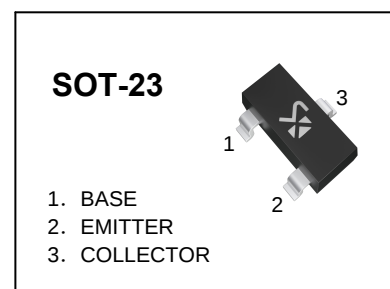


NPN Silicon Epitaxial Planar Transistor

1. Features

- For switching and AF amplifier applications



MARKING: 1RM

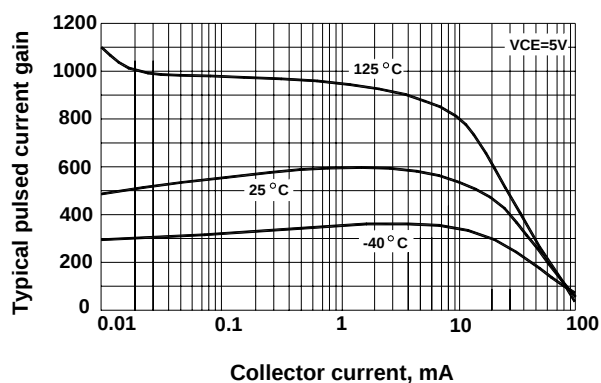
AXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	4.5	V
I_C	Collector Current -Continuous	100	mA
P_C	Collector Power Dissipation	200	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-+150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient Air	357	$^{\circ}\text{C/W}$

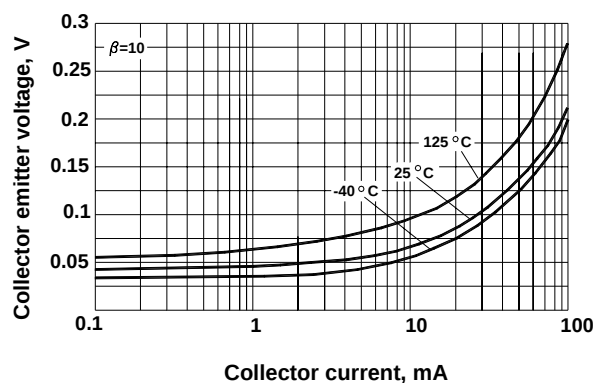
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	2.5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 15\text{V}, I_E = 0$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3\text{V}, I_C = 0$			50	nA
DC current gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 0.1\text{mA}$ $V_{CE} = 5\text{V}, I_C = 1\text{mA}$ $V_{CE} = 5\text{V}, I_C = 10\text{mA}$	400 450 400		1200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.5	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 0.5\text{mA}$	50			MHz
Collector Base Capacitance	C_{cb}	$V_{CB} = 5\text{V}, I_E = 0, f = 100\text{KMHZ}$			4	PF
Emitter Base Capacitance	C_{eb}	$V_{CB} = 0.5\text{V}, I_E = 0, f = 100\text{KMHZ}$			10	PF
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}, R_s = 10\text{K}\Omega, f = 10\text{Hz to } 15.7\text{KHz}$			2	dB

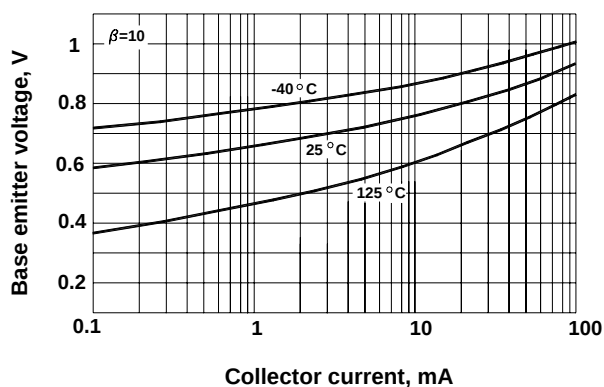
Typical pulsed current gain
vs. collector current



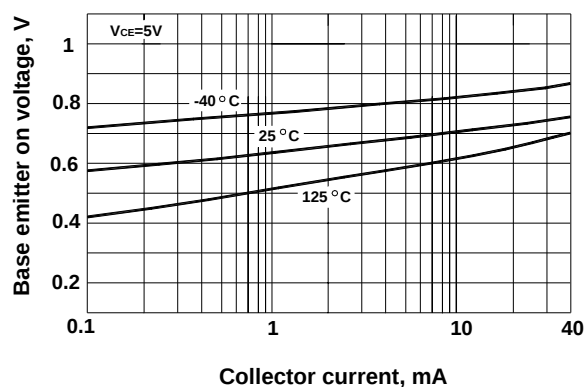
Collector emitter saturation
voltage vs. collector current



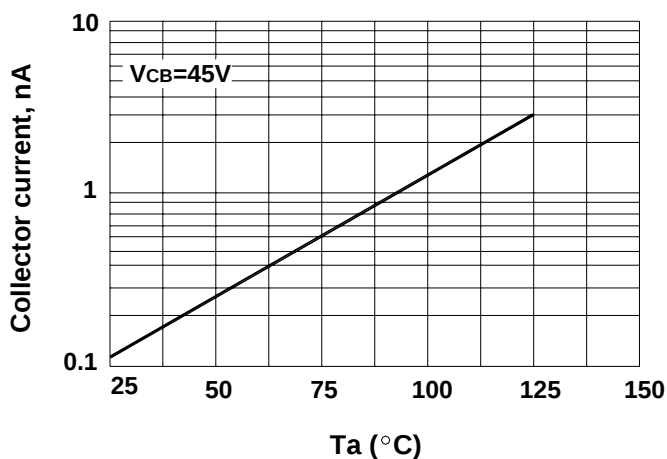
Base emitter saturation
voltage vs. collector current



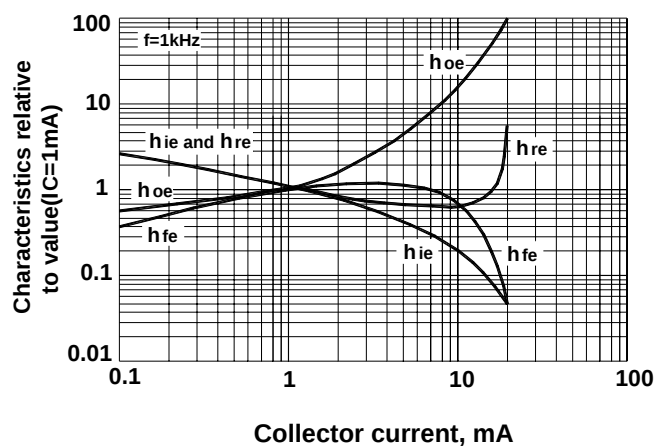
Base emitter on voltage
vs. collector current



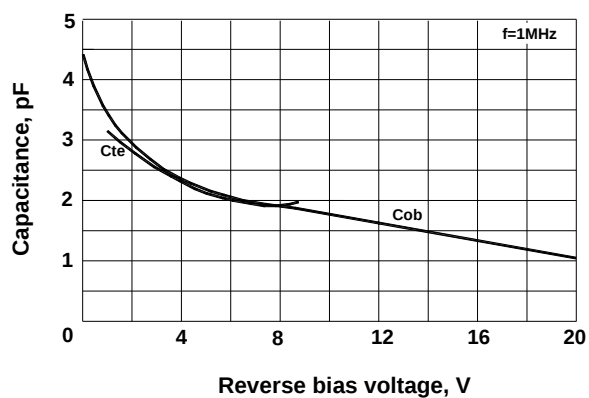
Collector cutoff current vs.
ambient temperature



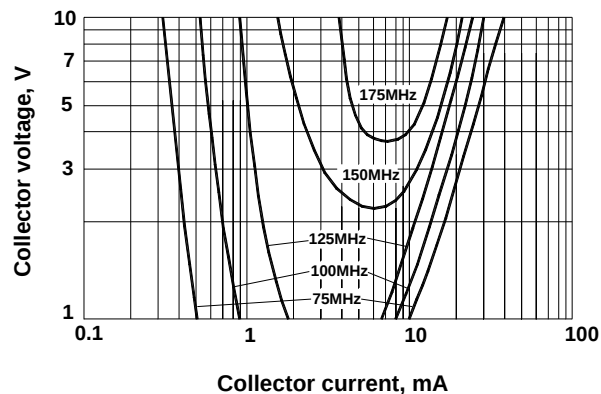
Typical common emitter characteristics



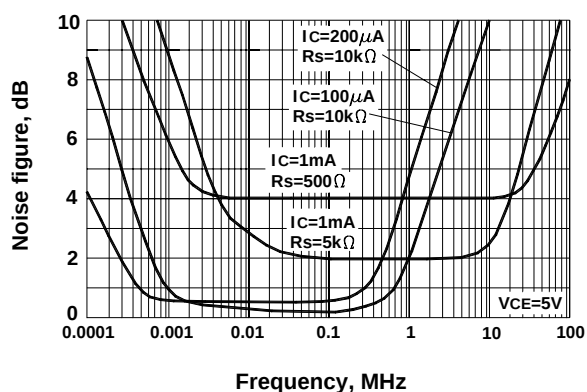
Input and output capacitance
vs. reverse bias voltage



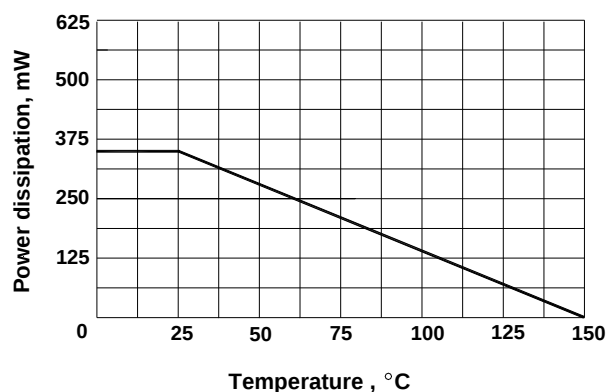
Contours of constant
gain bandwidth product



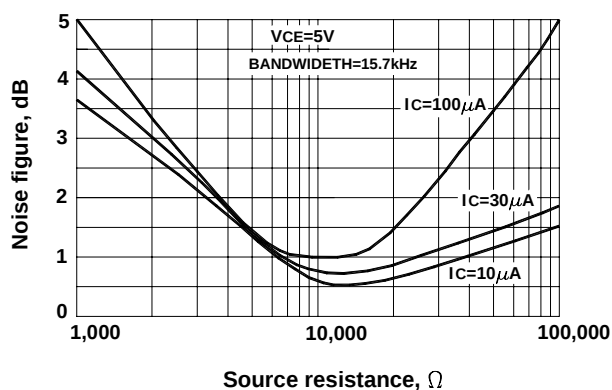
Noise figure vs. frequency



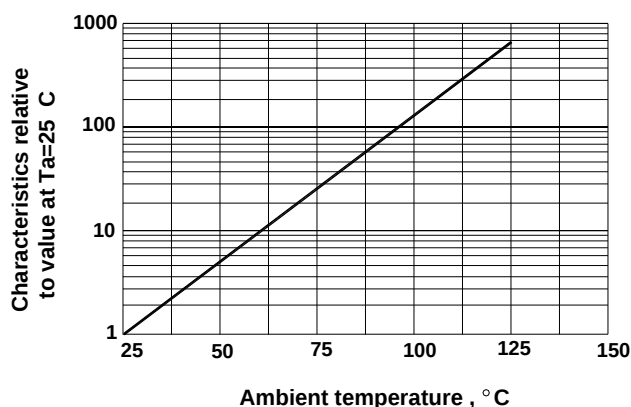
Power dissipation vs.
ambient temperature



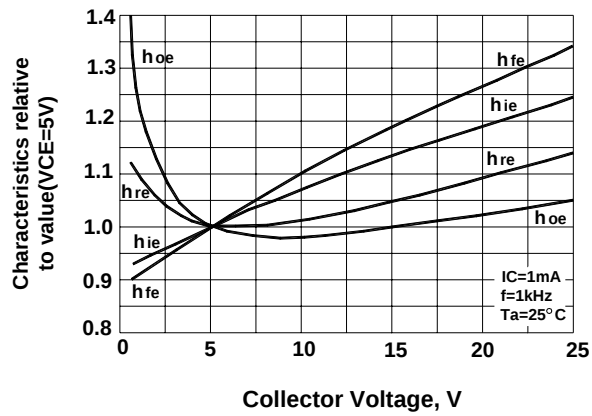
Wideband noise frequency
vs. source resistance



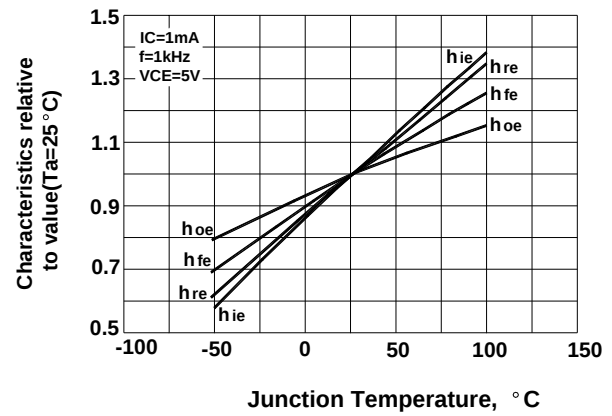
Normalized collector cutoff current
vs. ambient temperature



Typical common emitter characteristics



Typical common emitter characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23

