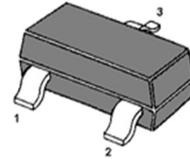


NPN Silicon Epitaxial Planar Transistor

for audio frequency general purpose amplifier applications.

The transistor is subdivided into four groups O, Y, G and L, according to its DC current gain.



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Applications

- Switching
- AF Amplifier

Absolute Maximum Ratings (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	30	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	625	°C/W

¹⁾ Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.

CLASSIFICATION OF h_{FE}

Rank	O	Y	G	L
Range	70-140	120-240	200-400	350-700
Marking	LO	LY	LG	LL

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE}=6\text{V}$, $I_C=2\text{mA}$	O	h_{FE}	70	-	140	-
	Y	h_{FE}	120	-	240	-
	G	h_{FE}	200	-	400	-
	L	h_{FE}	350	-	700	-
Collector Cutoff Current at $V_{CB}=60\text{V}$		I_{CBO}	-	-	0.1	μA
Emitter Cutoff Current at $V_{EB}=5\text{V}$		I_{EBO}	-	-	0.1	μA
Collector Saturation Voltage at $I_C=100\text{mA}$, $I_B=10\text{mA}$		$V_{CE(sat)}$	-	-	0.25	V
Transition Frequency at $V_{CE}=10\text{V}$, $I_C=1\text{mA}$		f_T	80	-	-	MHz
Collector Output Capacitance at $V_{CB}=10\text{V}$, $f=1\text{MHz}$		C_{ob}	-	2	3.5	pF
Noise Figure at $V_{CE}=6\text{V}$, $I_C=0.1\text{mA}$, $f=1\text{KHz}$, $R_g=10\text{K}\Omega$		NF	-	1	10	dB

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

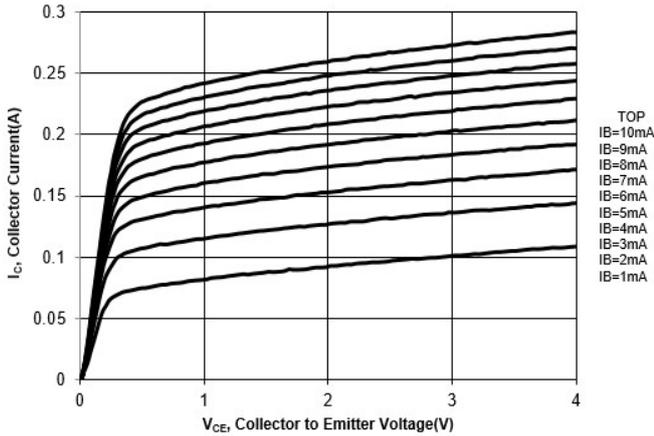


Fig. 2 Collector Current vs. Base to Emitter Voltage

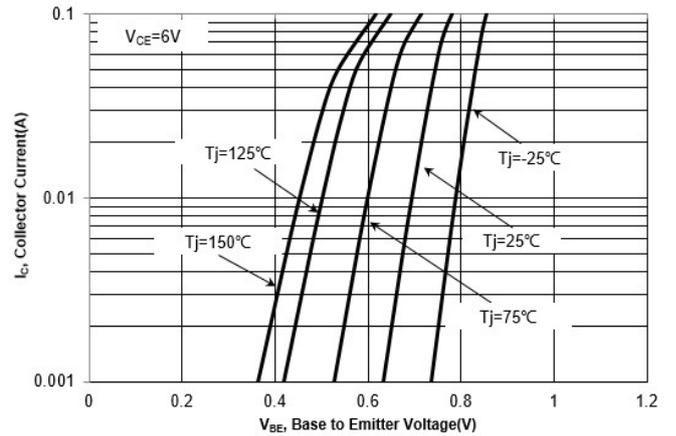


Fig. 3 DC Current Gain vs. Collector Current

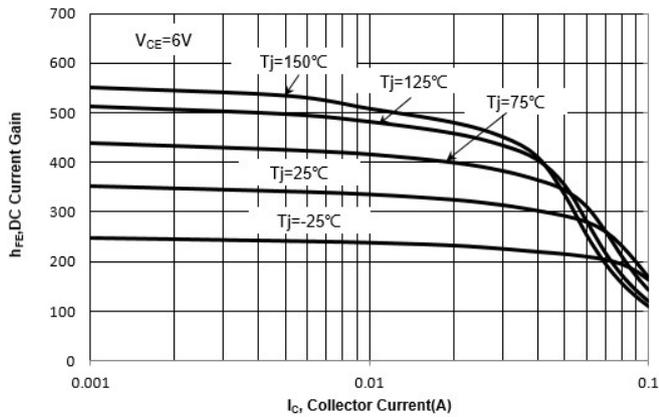


Fig. 4 $V_{BE\text{SAT}}$ vs. Collector Current

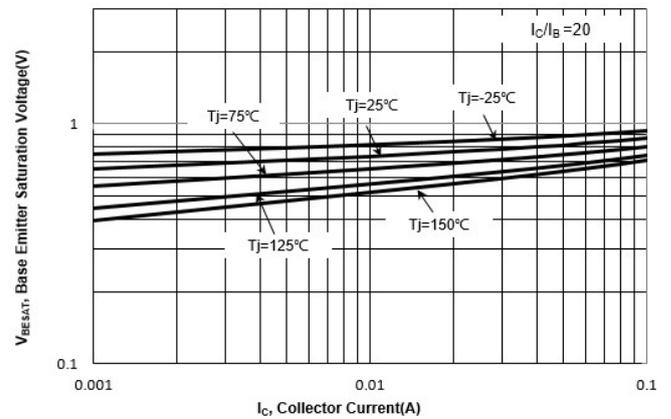


Fig. 5 $V_{CE\text{SAT}}$ vs. Collector Current

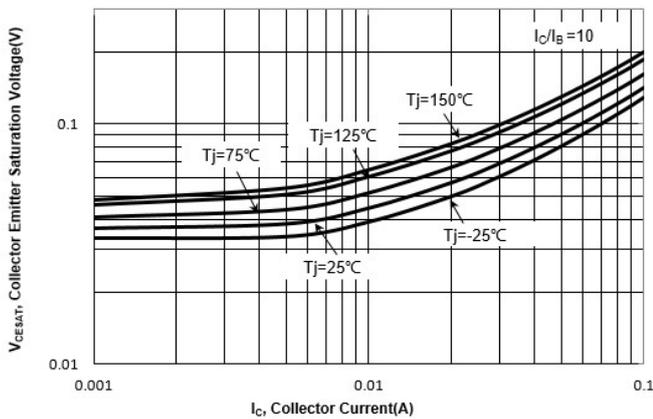


Fig. 7 Power Derating Curve

