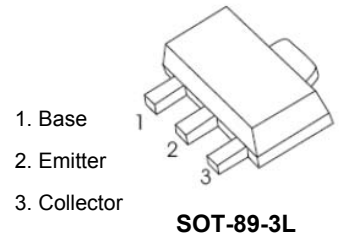


Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- For low-frequency output amplification



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current-Continuous	I_C	-2	A
Collector Power Dissipation	P_C	500	mW
Operation Junction Temperature Range	T_J	-55 To +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 To +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0$	-50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$, $I_B=0$	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$, $I_C=0$	-5	-	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-50\text{V}$, $I_E=0$	-	-	-1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5\text{V}$, $I_C=0$	-	-	-1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2\text{V}$, $I_C=-200\text{mA}$	120	-	340	-
	$h_{FE(2)}$	$V_{CE}=-2\text{V}$, $I_C=-1\text{A}$	60	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1\text{A}$, $I_B=-50\text{mA}$	-	-	-0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1\text{A}$, $I_B=-50\text{mA}$	-	-	-1.2	V
Transition Frequency	f_T	$V_{CE}=-10\text{V}$, $I_C=50\text{mA}$, $f=200\text{MHz}$	-	80	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}$, $I_E=0$, $f=1\text{MHz}$	-	-	60	pF

Classification Of $h_{FE(1)}$

Rank	R	S
Range	120-240	170-340

Typical Characteristic Curves

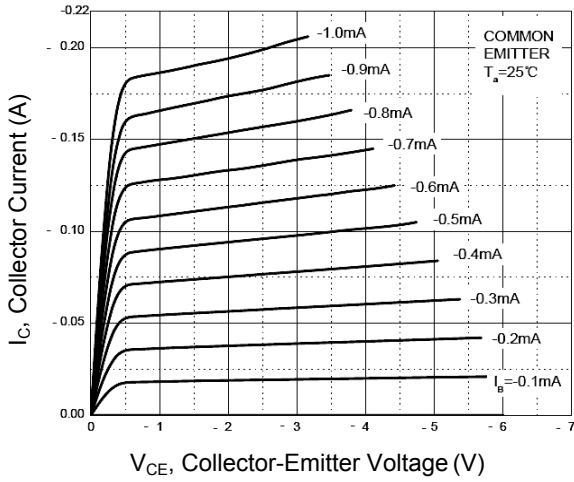


Figure 1. Static Characteristic

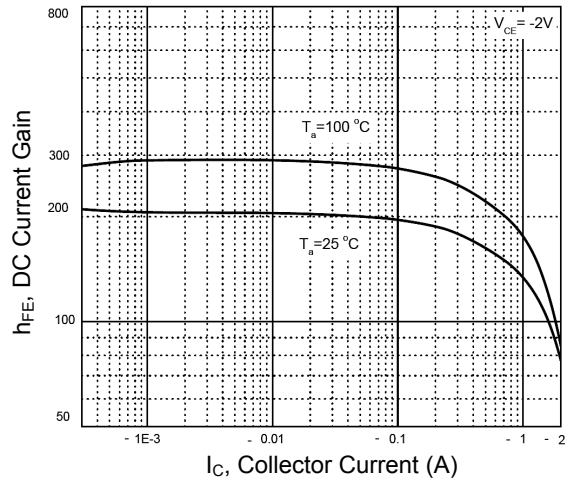


Figure 2. DC Current Gain vs. Collector Current

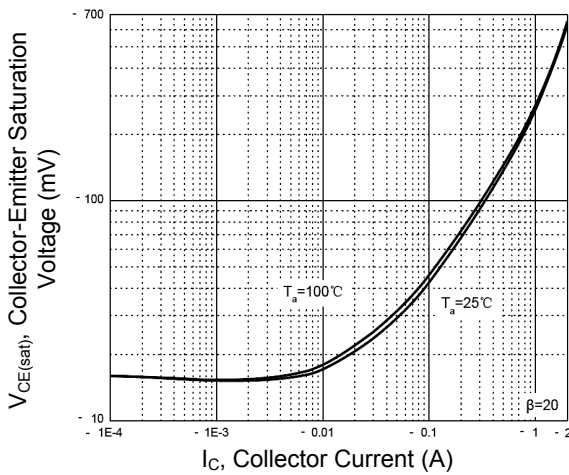


Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current

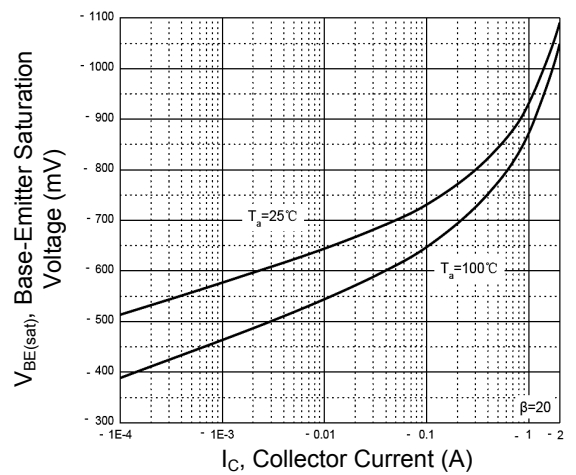


Figure 4. Base-Emitter Saturation Voltage vs. Collector Current

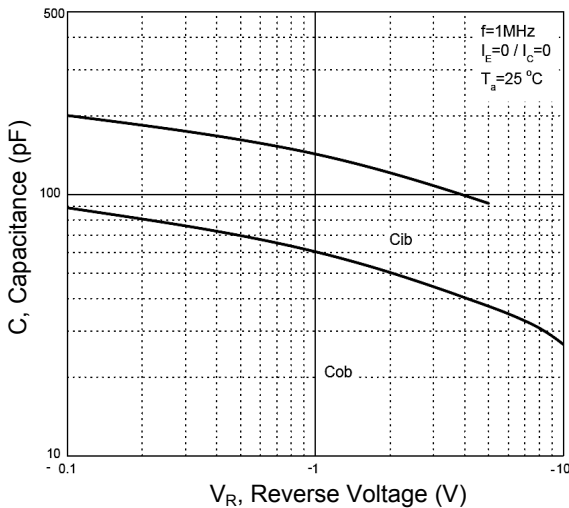


Figure 5. Capacitance Characteristics

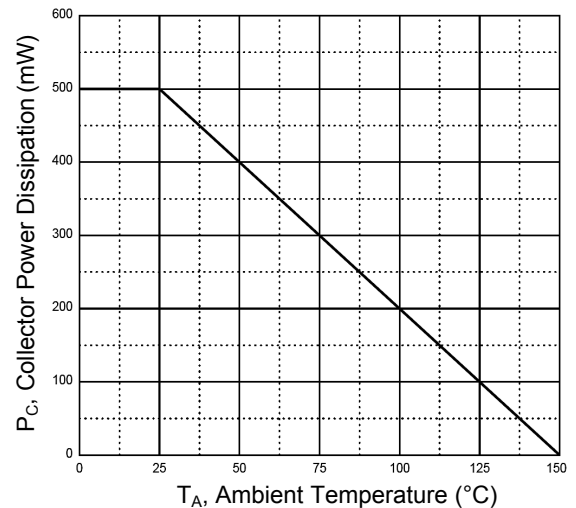
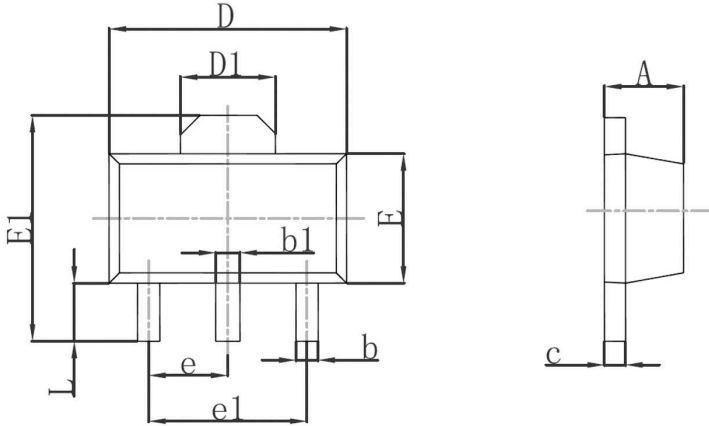


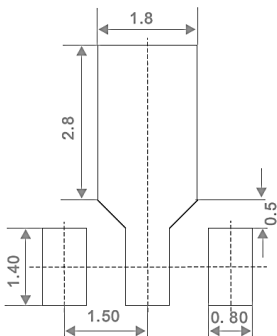
Figure 6. Collector Power Dissipation vs. Ambient Temperature

Package Outline Dimensions (SOT-89-3L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

Recommended Pad Layout



1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Order Information

Device	Package	Marking	Packaging	SPQ
GSBCX1440	SOT-89-3L	1L	Tape & Reel	1,000 Pcs / Reel