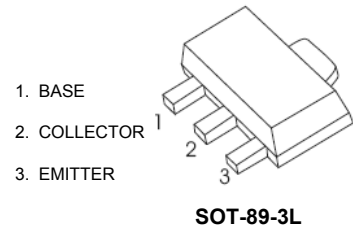


Features

- Low collector emitter saturation voltage



Applications

- For driver stages of audio / video amplifiers

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Max.	Unit
Collector-Base Voltage	V _{CB0}	120	V
Collector-Emitter Voltage	V _{CEO}	100	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current-Continuous	I _C	1	A
Peak Pulse Collector Current	I _{CM}	2	A
Base Current	I _B	200	mA
Total Power Dissipation ¹	P _{tot}	1	W
Operating Junction Temperature Range	T _J	-65 To +150	°C
Storage Temperature Range	T _{STG}	-65 To +150	°C
Thermal Resistance from Junction to Ambient ¹	R _{θJA}	125	°C/W

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

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

Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$	120	-	V
Collector-Emitter Breakdown Voltage ¹	$V_{(BR)CEO}$	$I_C=1\text{mA}$	100	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$	7	-	V
Collector Base Cut-off Current	I_{CBO}	$V_{CB}=100\text{V}$	-	100	nA
Emitter Base Cut-off Current	I_{EBO}	$V_{EB}=5\text{V}$	-	100	nA
Collector Emitter Cut-off Current	I_{CES}	$V_{CE}=100\text{V}$	-	100	nA
DC Current Gain ¹	h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	100	-	-
	h_{FE}	$V_{CE}=10\text{V}, I_C=250\text{mA}$	100	300	-
	h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	60	-	-
	h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{A}$	20	-	-
Collector-Emitter Saturation Voltage ¹	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	0.3	V
		$I_C=1\text{A}, I_B=100\text{mA}$	-	0.6	
Base-Emitter Saturation Voltage ¹	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}$	-	1.15	V
Base Emitter Turn-on Voltage ¹	$V_{BE(on)}$	$V_{CE}=10\text{V}, I_C=1\text{A}$	-	1	V
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, F=100\text{MHz}$	150	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, F=1\text{MHz}$	-	10	pF

Note:

1. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

Typical Characteristic Curves

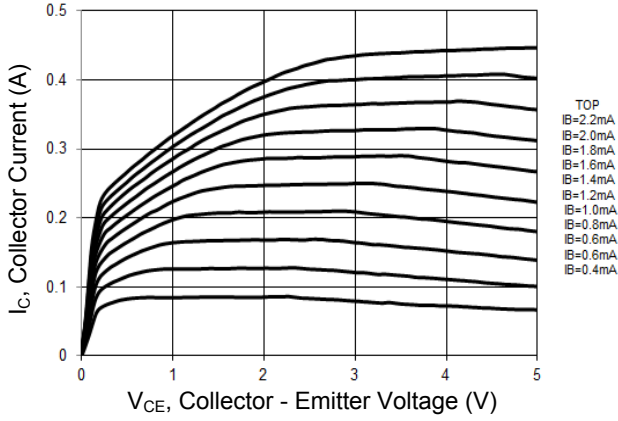


Figure 1. Static Characteristics

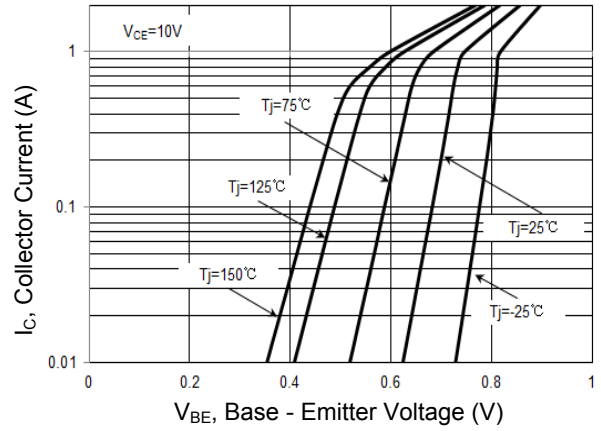


Figure 2. Collector Current vs. Base - Emittor Voltage

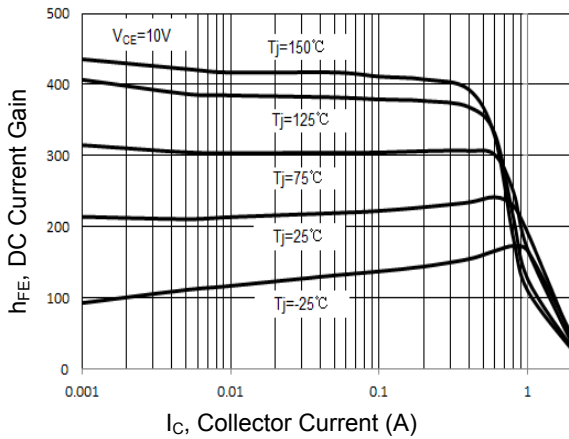


Figure 3. DC Current Gain vs. Collector Current

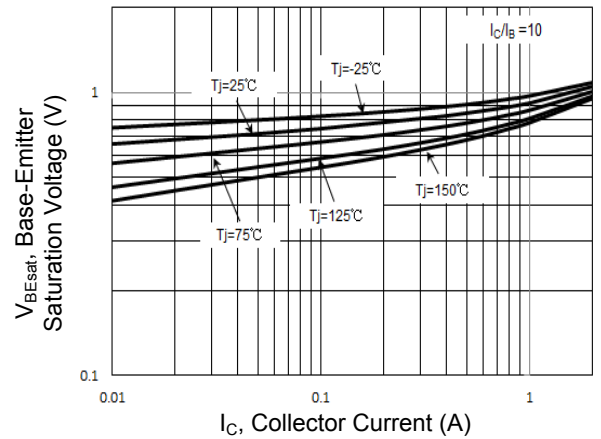


Figure 4. Base - Emittor Saturation Voltage vs. Collector Current

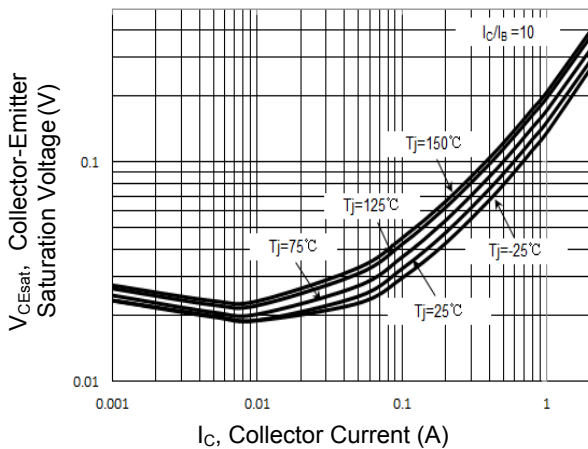


Figure 5. Collector - Emittor Saturation Voltage vs. Collector Current

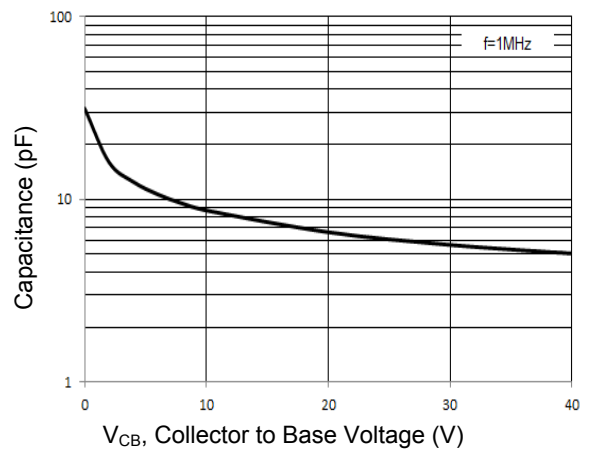


Figure 6. Output Capacitance

Typical Characteristic Curves

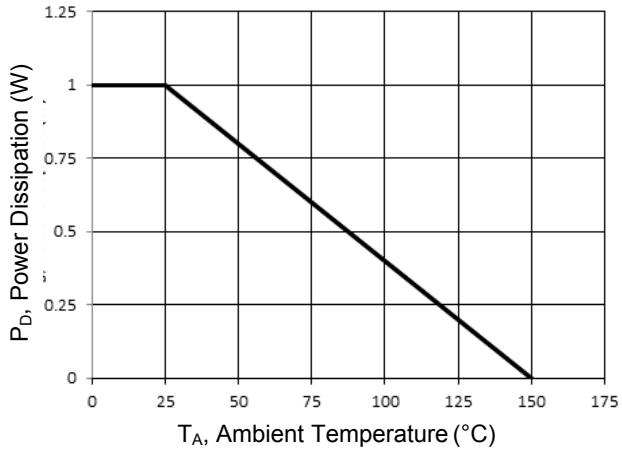
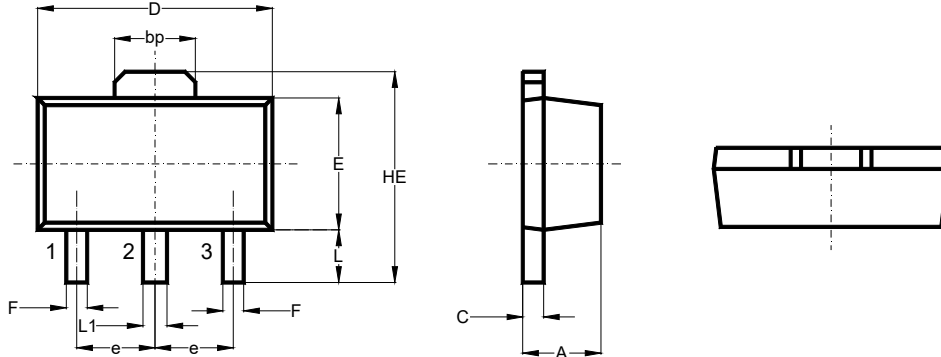


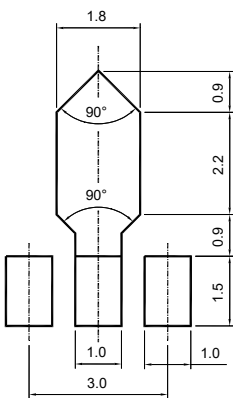
Figure 7. Power Derating Curve

Package Outline Dimensions (SOT-89)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
bp	1.500	1.600	0.059	0.063
C	0.300	0.500	0.012	0.020
D	4.400	4.600	0.173	0.181
E	2.400	2.600	0.094	0.102
F	0.350	0.450	0.014	0.018
HE	3.750	4.250	0.148	0.167
e	1.500 Typ.		0.059 Typ.	
L	0.950	1.050	0.037	0.041
L1	0.410	0.510	0.016	0.020

Recommended Pad Layout



Order Information

Device	Package	Marking	Quantity	HSF Status
GSFCX493U	SOT-89-3L	FCX493U	1,000 pcs / Reel	RoHS Compliant