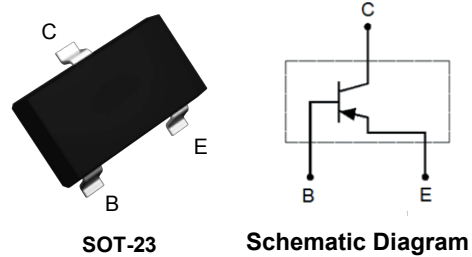


**Features**

- Epoxy meets UL 94V-0 flammability rating
- Surface mount SOT-23 package
- RoHS compliant/green EMC
- General purpose amplifier applications



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

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	-80	V
Collector-Emitter Voltage	$V_{CE0}$	-80	V
Emitter-Base Voltage	$V_{EB0}$	-4	V
Collector Current-Continuous	$I_C$	-500	mA
Collector Power Dissipation <sup>1</sup>	$P_C$	225	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	555	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

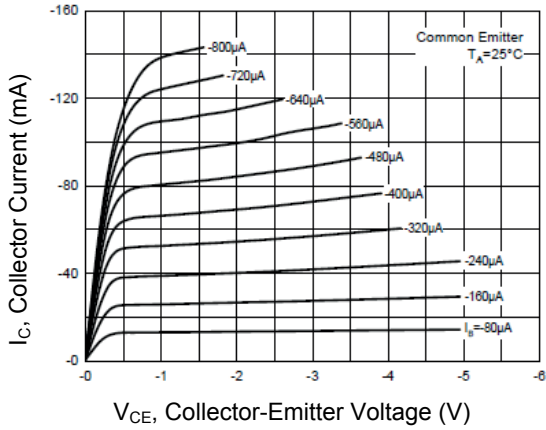
Note:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

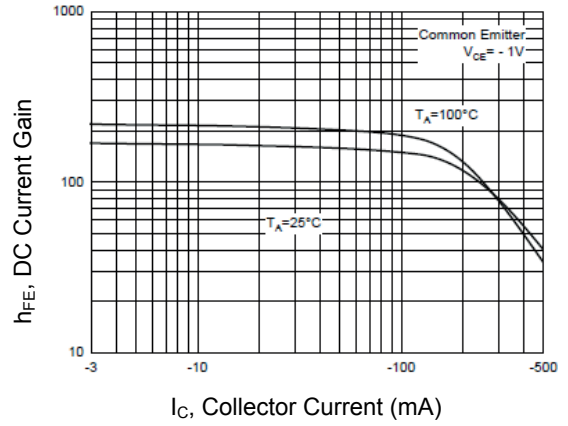
**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C=-100\mu\text{A}, I_E=0$	-80	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CE0}$	$I_C=-1\text{mA}, I_B=0$	-80	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E=-100\mu\text{A}, I_C=0$	-4	-	V
Collector-Base Cutoff Current	$I_{CB0}$	$V_{CB}=-80\text{V}, I_E=0$	-	-0.1	$\mu\text{A}$
Collector Cut-Off Current	$I_{CE0}$	$V_{CE}=-60\text{V}, I_B=0$	-	-1	$\mu\text{A}$
Emitter-Base Cutoff Current	$I_{EB0}$	$V_{EB}=-4\text{V}, I_C=0$	-	-0.1	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100	-	-
	$h_{FE(2)}$	$V_{CE}=-1\text{V}, I_C=-100\text{mA}$	100	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-100\text{mA}, I_B=-10\text{mA}$	-	-0.25	V
Base-Emitter Voltage	$V_{BE}$	$I_C=-100\text{mA}, V_{CE}=-1\text{V}$	-	-1.2	V
Transition Frequency	$f_T$	$V_{CE}=-1\text{V}, I_C=-100\text{mA}, F=100\text{MHz}$	50	-	MHz

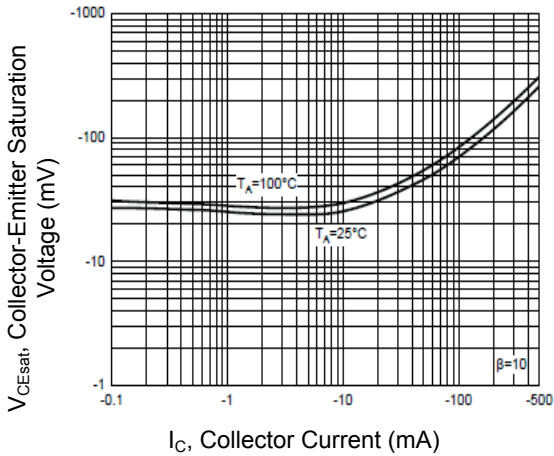
**Typical Electrical and Thermal Characteristic Curves**



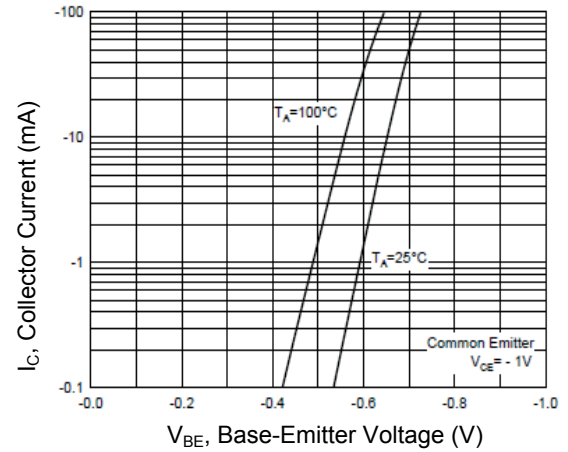
**Figure 1. Static Characteristics**



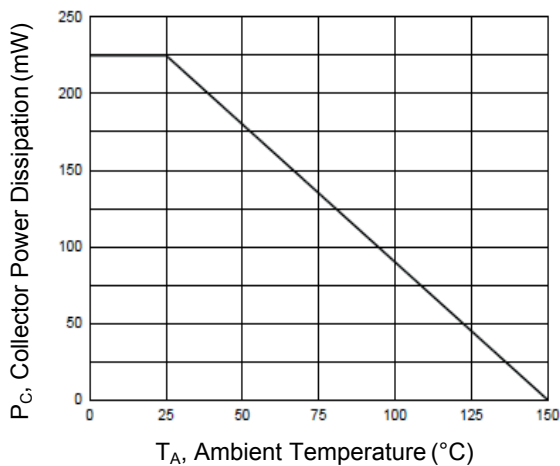
**Figure 2. DC Current Gain Characteristics**



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

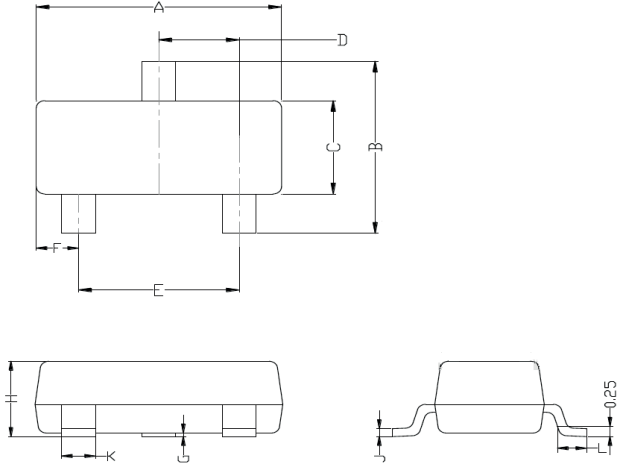


**Figure 4. Base-Emitter Voltage Characteristics**



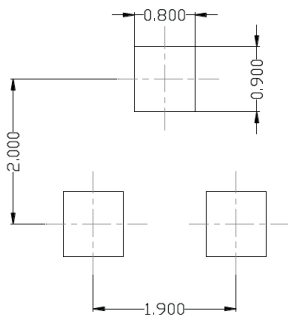
**Figure 5. Collector Power Derating Curve**

**Package Outline Dimensions (SOT-23)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.800	3.040	0.110	0.120
B	2.100	2.640	0.083	0.104
C	1.200	1.400	0.047	0.055
D	0.890	1.030	0.035	0.041
E	1.780	2.050	0.070	0.081
F	0.450	0.600	0.018	0.024
G	0.013	0.100	0.001	0.004
H	0.900	1.110	0.035	0.044
J	0.085	0.180	0.003	0.007
K	0.370	0.510	0.015	0.020
L	0.300	0.500	0.012	0.020

**Recommended Pad Layout**



**Note:**

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	Carrier	Quantity
GSMMBTA56	SOT-23	2GM	Tape & Reel	3,000pcs / Reel

For more information, please contact us at: [inquiry@goodarksemi.com](mailto:inquiry@goodarksemi.com)