

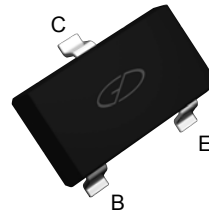
GSMMBTRC231 thru GSMMBTRC234 NPN Transistors

Features

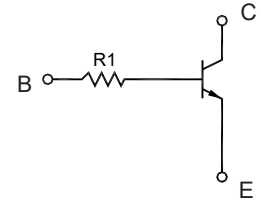
- Halogen and Antimony Free (HAF)
- RoHS compliant

Applications

For switching, audio muting, interface circuit and driver circuit applications.



SOT-23



Schematic Diagram

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	I_C	100	mA
Total Power Dissipation	P_{tot}	200	mW
Max. Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to + 150	$^{\circ}\text{C}$

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=1\text{mA}$	100	-	600	-	
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=50\mu\text{A}$	50	-	-	V	
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$	50	-	-	V	
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=50\mu\text{A}$	5	-	-	V	
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=50\text{V}$	-	-	0.5	μA	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$	-	-	0.3	V	
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_E=-5\text{mA}, F=100\text{MHz}$	-	250	-	MHz	
Input Resistor	GSMMBTRC231	R1	-	-	2.2	-	K Ω
	GSMMBTRC233			-	10	-	
	GSMMBTRC234			-	4.7	-	

Electrical Characteristics Curves

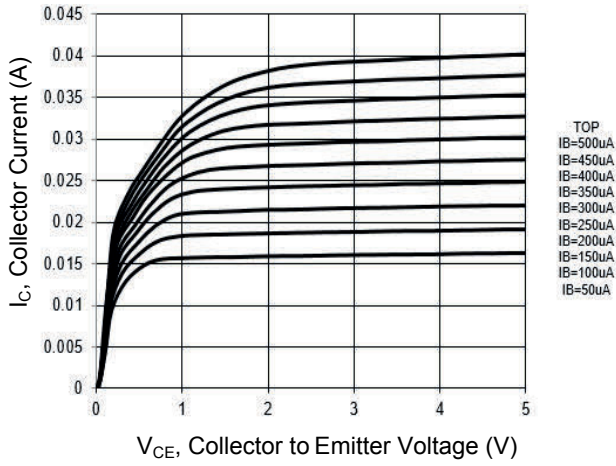


Figure 1. Output Characteristics Curve

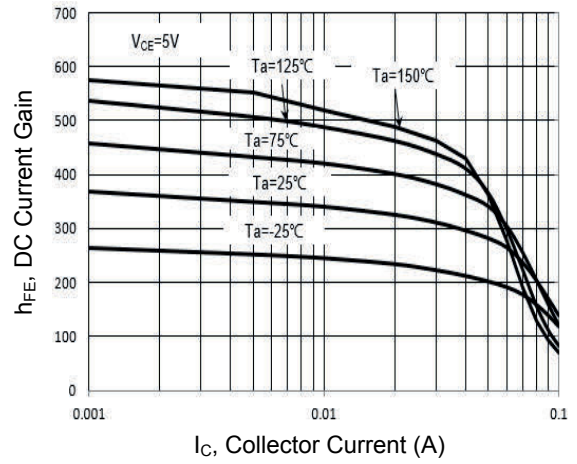


Figure 2. DC Current Gain vs. Collector Current

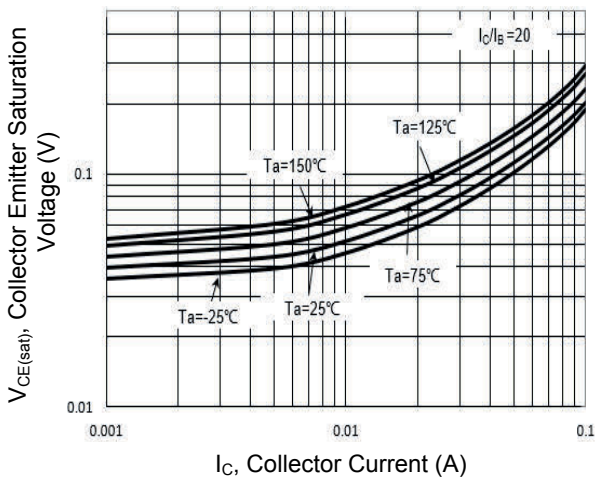


Figure 3. $V_{CE(sat)}$ vs. Collector Current

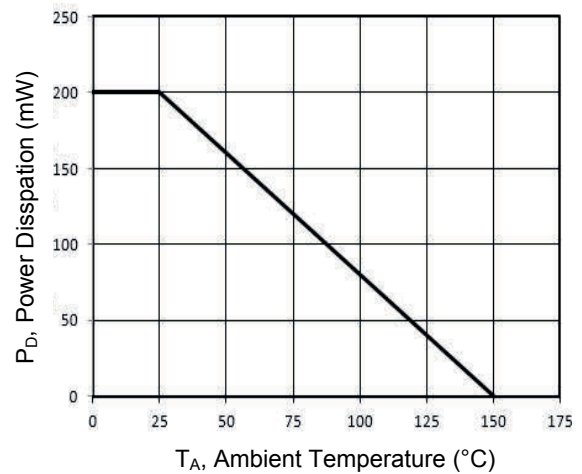
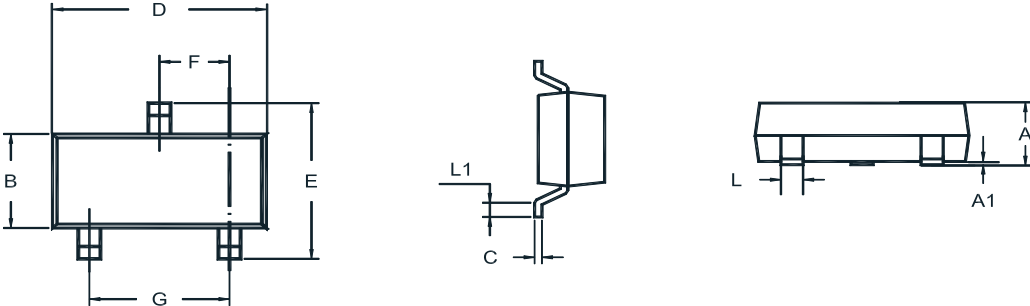


Figure 4. Power Derating Curve

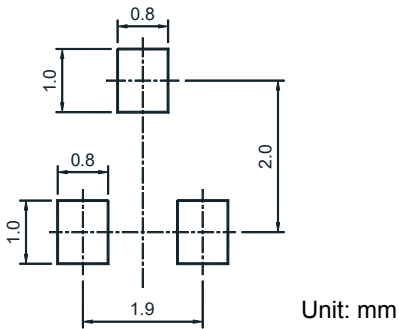
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Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.890	1.200	0.035	0.047
A1	0.013	0.100	0.001	0.004
B	1.200	1.400	0.047	0.055
C	0.080	0.190	0.003	0.007
D	2.800	3.040	0.110	0.120
E	2.200	2.600	0.087	0.102
F	0.890	1.020	0.035	0.040
G	1.780	2.040	0.070	0.080
L	0.370	0.510	0.015	0.020
L1	0.200	-	0.008	-

Recommended Pad Layout



Order Information

Device	Package	Marking Code	Carrier	Quantity
GSMMBTRC231	SOT-23	ZZ	Tape & Reel	3,000pcs / Reel
GSMMBTRC233	SOT-23	XE	Tape & Reel	3,000pcs / Reel
GSMMBTRC234	SOT-23	XD	Tape & Reel	3,000pcs / Reel