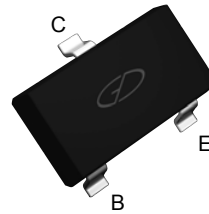


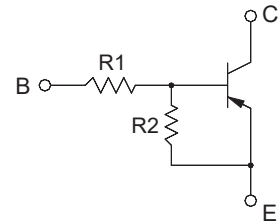
GSMMBTRA101Y thru GSMMBTRA106Y PNP Transistors

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce quantity of parts and manufacturing process



SOT-23



Schematic Diagram

Applications

For switching and interface circuit and drive circuit

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)	Type	R1 (KΩ)	R2 (KΩ)
GSMMBTRA101Y	4.7	4.7	GSMMBTRA104Y	47	47
GSMMBTRA102Y	10	10	GSMMBTRA105Y	2.2	47
GSMMBTRA103Y	22	22	GSMMBTRA106Y	4.7	47

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

Parameter	Symbol	GSMMBT RA101Y	GSMMBT RA102Y	GSMMBT RA103Y	GSMMBT RA104Y	GSMMBT RA105Y	GSMMBT RA106Y	Unit
Collector Base Voltage	V _{CBO}	-50						V
Collector Emitter Voltage	V _{CEO}	-50						V
Input Voltage	V _I	-20, 10	-40, 10	-40, 10	-40, 10	-12, 5	-20, 5	V
Collector Current	I _C	-100						mA
Total Power Dissipation	P _{tot}	200						mW
Max. Thermal Resistance from Junction to Ambient ¹	R _{θJA}	625						°C/W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to +150						°C

Note:

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

GSMMBTRA101Y thru GSMMBTRA106Y PNP Transistors

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
DC Current Gain	GSMMBTRA101Y	h _{FE}	V _{CE} =-5V, I _C =-10mA	30	-	-	-
	GSMMBTRA102Y			50	-	-	
	GSMMBTRA103Y			70	-	-	
	GSMMBTRA104Y			80	-	-	
	GSMMBTRA105Y			80	-	-	
	GSMMBTRA106Y			80	-	-	
Collector Emitter Cutoff Current		I _{CEO}	V _{CE} =-50V	-	-	-500	nA
Emitter Base Cutoff Current	GSMMBTRA101Y	I _{EBO}	V _{EB} =-5V	-	-	-1.8	mA
	GSMMBTRA102Y			-	-	-0.88	
	GSMMBTRA103Y			-	-	-0.36	
	GSMMBTRA104Y			-	-	-0.18	
	GSMMBTRA105Y			-	-	-3.6	
	GSMMBTRA106Y			-	-	-1.8	
Collector Emitter Saturation Voltage		V _{CE(sat)}	I _C =-10mA, I _B =-0.5mA	-	-	-0.3	V
Input Voltage (ON)	GSMMBTRA101Y	V _{I(ON)}	V _{CE} =-0.2V, I _C =-5mA	-	-	-2	V
	GSMMBTRA102Y			-	-	-2.4	
	GSMMBTRA103Y			-	-	-3	
	GSMMBTRA104Y			-	-	-5	
	GSMMBTRA105Y			-	-	-1.1	
	GSMMBTRA106Y			-	-	-1.3	
Input Voltage (OFF)	GSMMBTRA101Y-104Y	V _{I(OFF)}	V _{CE} =-5V, I _C =-0.1mA	-1	-	-	V
	GSMMBTRA105Y-106Y			-0.5	-	-	
Transition Frequency ¹		f _T	V _{CE} =-10V, I _C =-5mA	-	200	-	MHz
Input Resistance	GSMMBTRA101Y	R ₁	-	-30%	4.7	+30%	KΩ
	GSMMBTRA102Y				10		
	GSMMBTRA103Y				22		
	GSMMBTRA104Y				47		
	GSMMBTRA105Y				2.2		
	GSMMBTRA106Y				4.7		
Resistance Ratio	GSMMBTRA101Y-104Y	R ₂ /R ₁	-	0.8	1	1.2	-
	GSMMBTRA105Y			17	21	26	
	GSMMBTRA106Y			8	10	12	

Note:

1. Characteristic of transistor only.

GSMMBTRA101Y thru GSMMBTRA106Y PNP Transistors

Electrical Characteristics Curves: GSMMBTRA102Y

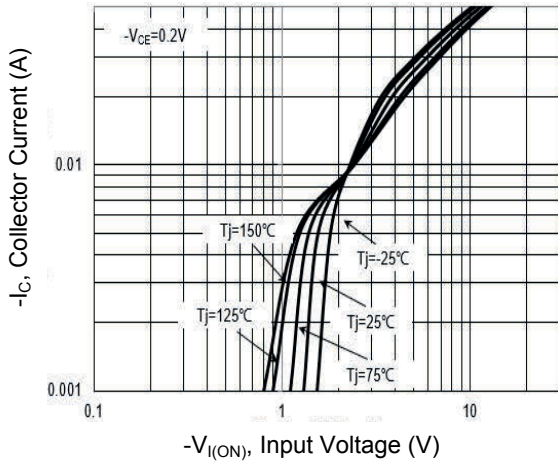


Figure 1. Collector Current vs. Input On Voltage

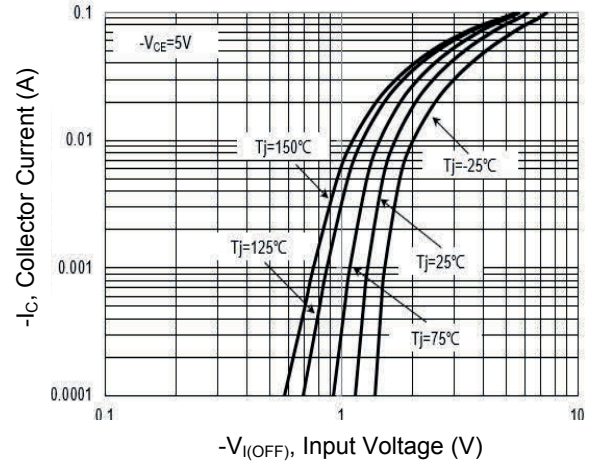


Figure 2. Collector Current vs. Input Off Voltage

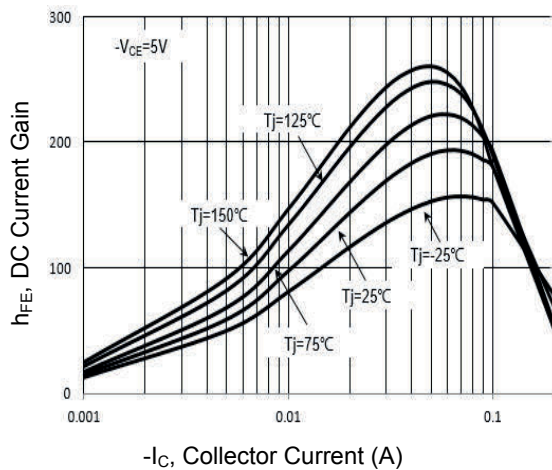


Figure 3. DC Current Gain vs. Collector Current

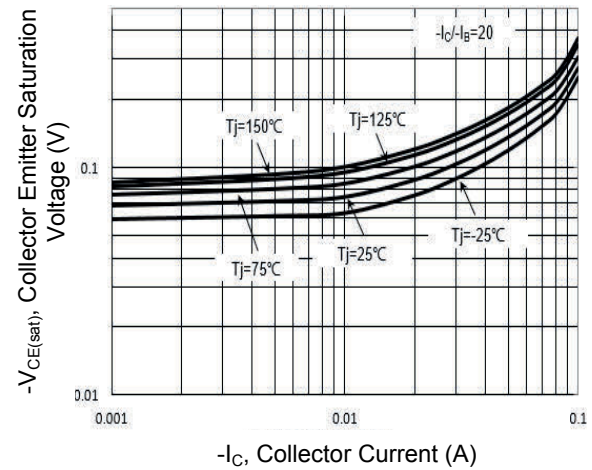


Figure 4. $V_{CE(sat)}$ vs. Collector Current

GSMMBTRA101Y thru GSMMBTRA106Y PNP Transistors

Electrical Characteristics Curves: GSMMBTRA105Y

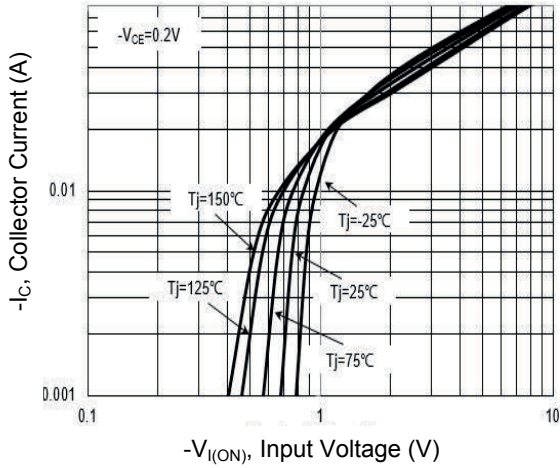


Figure 1. Collector Current vs. Input On Voltage

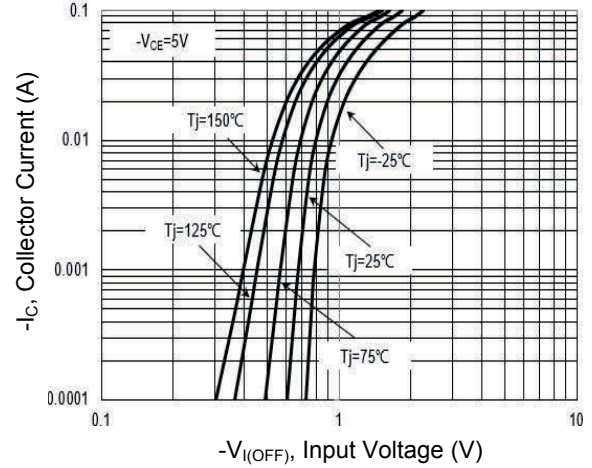


Figure 2. Collector Current vs. Input Off Voltage

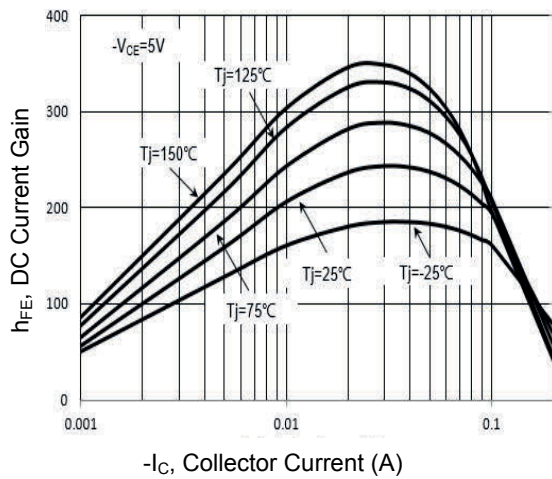


Figure 3. DC Current Gain vs. Collector Current

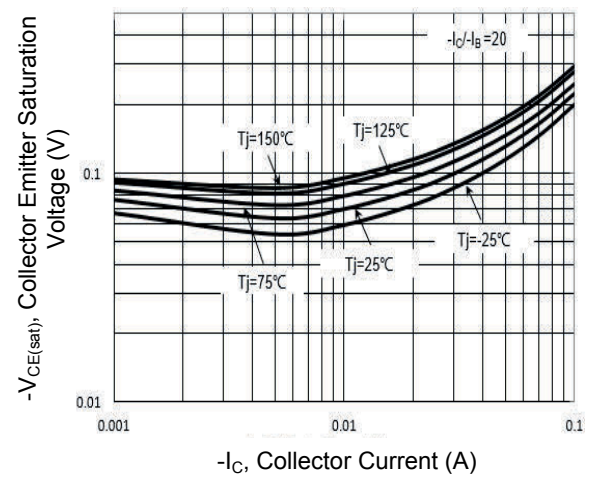
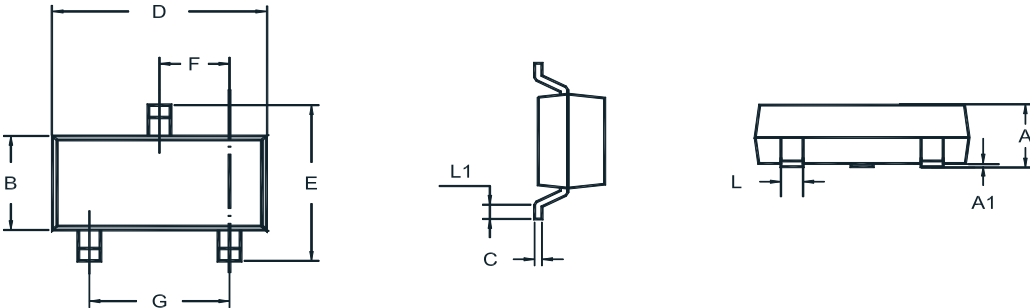


Figure 4. $V_{CE(sat)}$ vs. Collector Current

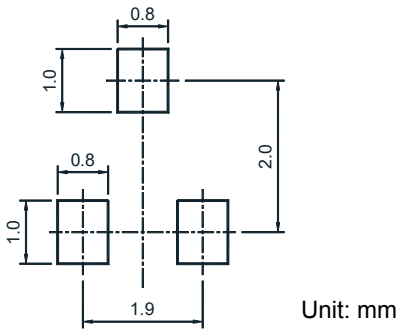
GSMMBTRA101Y thru GSMMBTRA106Y PNP Transistors

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
GSMMBTRA101Y	SOT-23	RK	Tape & Reel	3,000pcs / Reel
GSMMBTRA102Y	SOT-23	RM	Tape & Reel	3,000pcs / Reel
GSMMBTRA103Y	SOT-23	RN	Tape & Reel	3,000pcs / Reel
GSMMBTRA104Y	SOT-23	RP	Tape & Reel	3,000pcs / Reel
GSMMBTRA105Y	SOT-23	RR	Tape & Reel	3,000pcs / Reel
GSMMBTRA106Y	SOT-23	RX	Tape & Reel	3,000pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com