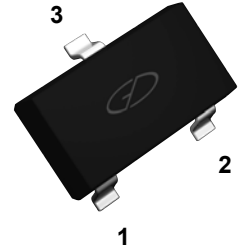


## Features

- High breakdown voltage
- Low saturation voltage
- RoHS compliant



1. Base
2. Emitter
3. Collector

**SOT-23**

## Applications

- High voltage control circuits
- Complementary to GSMMBTA94

## Maximum Ratings

( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	400	V
Collector to Emitter Voltage	$V_{CEO}$	400	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	200	mA
Collector Power Dissipation	$P_C$	350	mW
Junction Temperature	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

## Thermal Characteristics

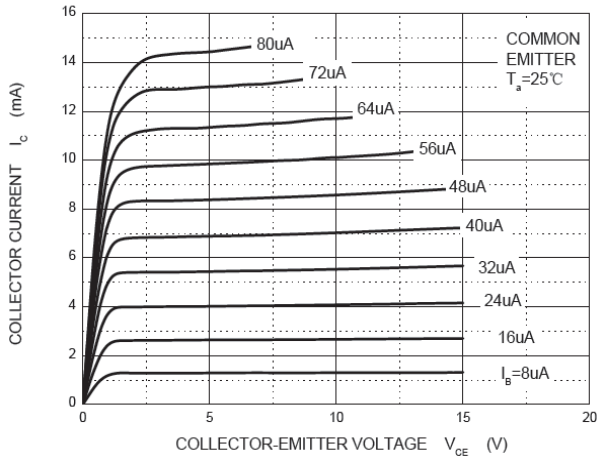
Parameter	Symbol	Typical	Unit
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$

**Electrical Characteristics**

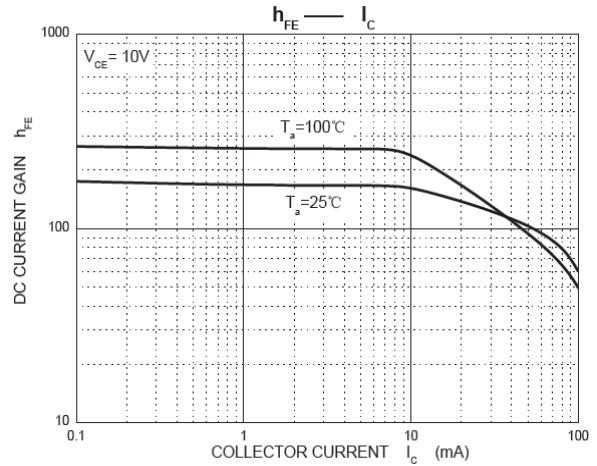
(T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V <sub>CBO</sub>	I <sub>C</sub> =100μA I <sub>E</sub> =0	400	-	-	V
Collector to Base Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =1.0mA I <sub>B</sub> =0	400	-	-	V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =10μA I <sub>C</sub> =0	6.0	-	-	V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =400V I <sub>E</sub> =0	-	-	0.1	μA
Collector Cut-Off Current	I <sub>CEO</sub>	V <sub>CE</sub> =400V V <sub>BE</sub> =0	-	-	0.5	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4.0V I <sub>C</sub> =0	-	-	0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =1.0mA	40	-	-	-
		V <sub>CE</sub> =10V I <sub>C</sub> =10mA	50	-	200	
		V <sub>CE</sub> =10V I <sub>C</sub> =50mA	45	-	-	
		V <sub>CE</sub> =10V I <sub>C</sub> =100mA	40	-	-	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1.0mA I <sub>B</sub> =0.1mA	-	-	0.4	V
		I <sub>C</sub> =10mA I <sub>B</sub> =1.0mA	-	-	0.5	V
		I <sub>C</sub> =50mA I <sub>B</sub> =5.0mA	-	-	0.75	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10mA I <sub>B</sub> =1.0mA	-	-	0.75	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =20V I <sub>E</sub> =0 f=1.0MHz	-	-	7.0	pF

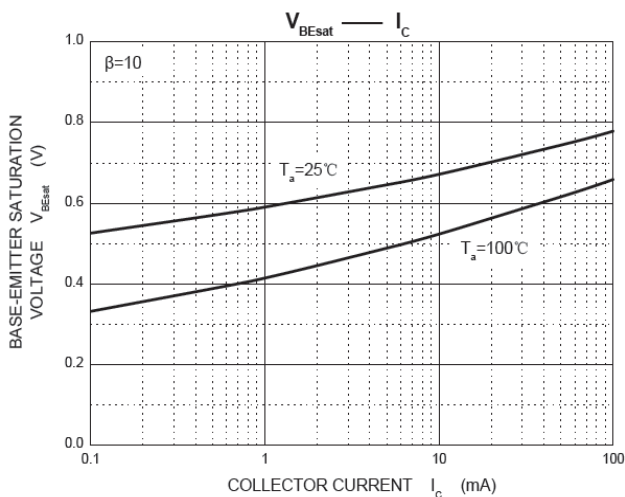
**Ratings and Characteristic Curves**



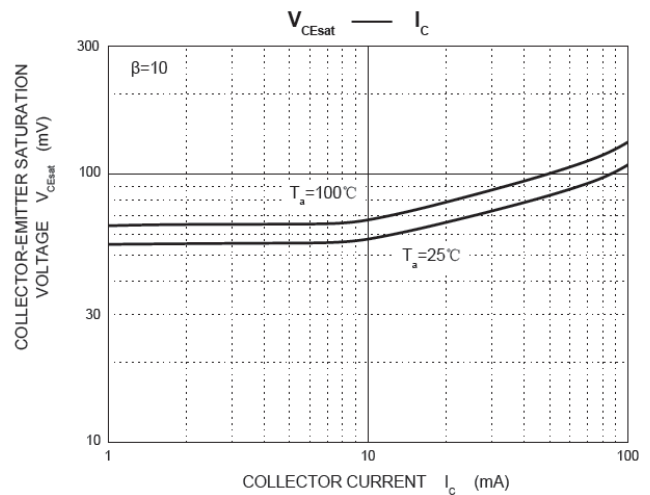
**Figure 1. Static Characteristic**



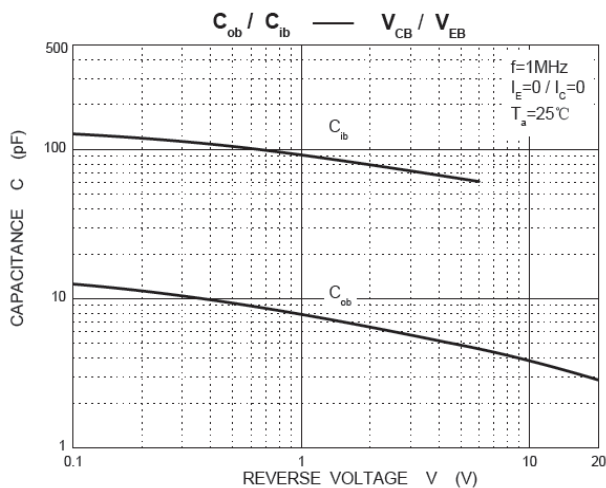
**Figure 2. DC Current Gain**



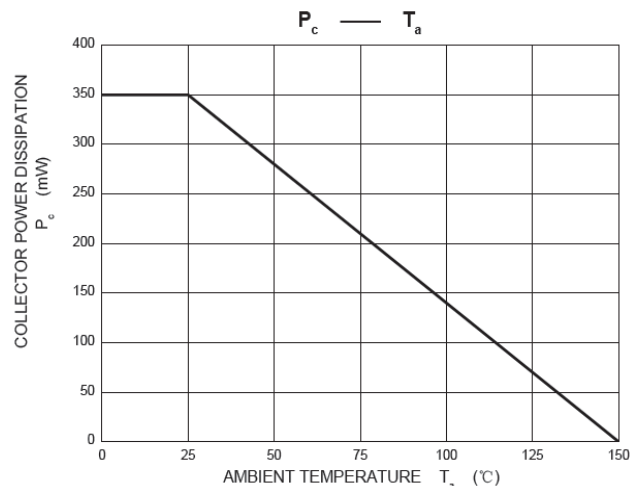
**Figure 3. Base-Emitter Saturation Voltage vs Collector current**



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

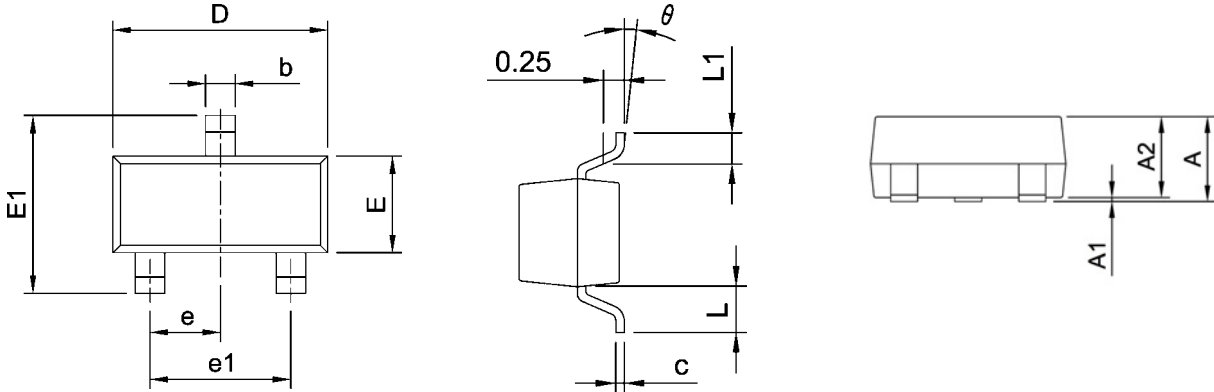


**Figure 5. Capacitance Characteristics**



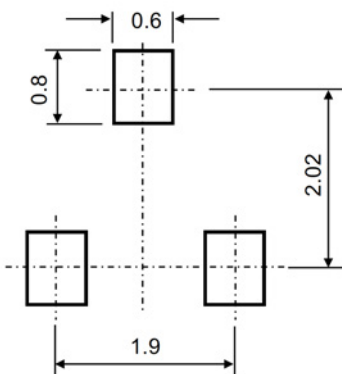
**Figure 6. Power Derating Curve**

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



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**Recommended Pad Layout**



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05mm.
3. The pad layout is for reference purposes only.