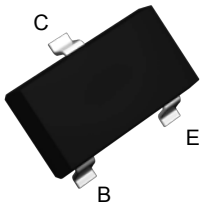
GOOD-ARK
SEMICONDUCTOR

GSMMBTA44
NPN Transistor

Features

- High breakdown voltage
- Low saturation voltage
- RoHS compliant



SOT-23

Applications

- High voltage control circuits
- Complementary to GSMMBTA94

Maximum Ratings

(T_A=25°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	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

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

Electrical Characteristics

(T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CBO}	I_C=100μA I_E=0	400	-	-	V
Collector to Base Breakdown Voltage	V_{CEO}	I_C=1.0mA I_B=0	400	-	-	V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=10μA I_C=0	6.0	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=400V I_E=0	-	-	0.1	μA
Collector Cut-Off Current	I_{CEO}	V_{CE}=400V V_{BE}=0	-	-	0.5	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4.0V I_C=0	-	-	0.1	μA
DC Current Gain	h_{FE}	V_{CE}=10V I_C=1.0mA	40	-	-	-
		V_{CE}=10V I_C=10mA	50	-	200	
		V_{CE}=10V I_C=50mA	45	-	-	
		V_{CE}=10V I_C=100mA	40	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1.0mA I_B=0.1mA	-	-	0.4	V
		I_C=10mA I_B=1.0mA	-	-	0.5	V
		I_C=50mA I_B=5.0mA	-	-	0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=10mA I_B=1.0mA	-	-	0.75	V
Output Capacitance	C_{ob}	V_{CB}=20V I_E=0 f=1.0MHz	-	-	7.0	pF

Ratings and Characteristic Curves

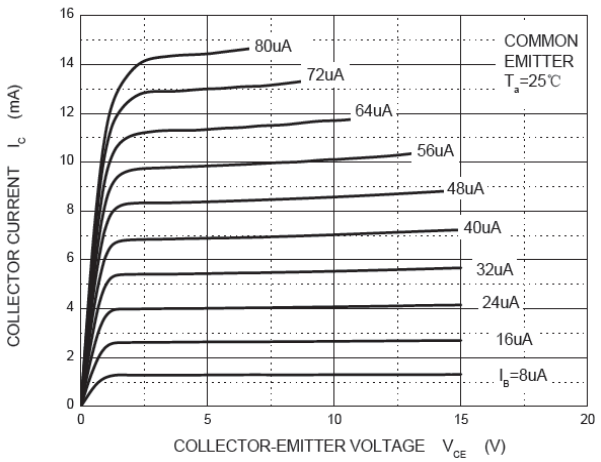


Figure 1. Static Characteristic

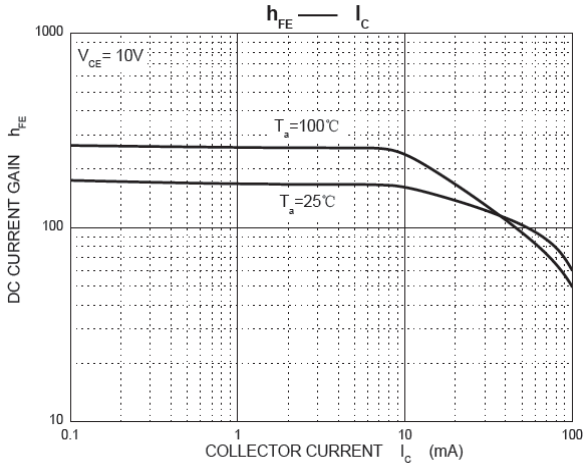


Figure 2. DC Current Gain

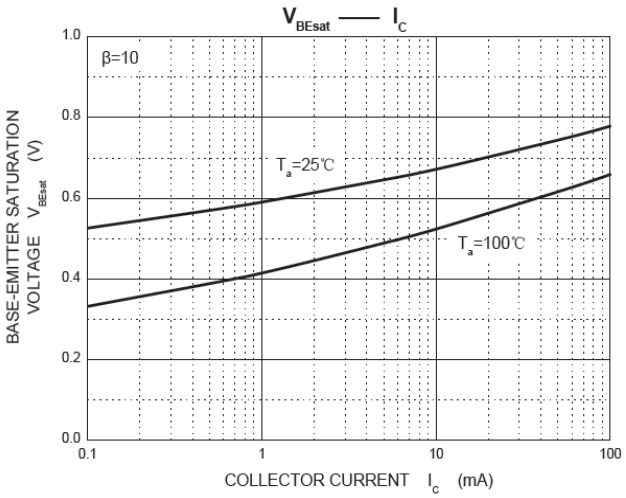


Figure 3. Base-Emitter Saturation Voltage vs Collector current

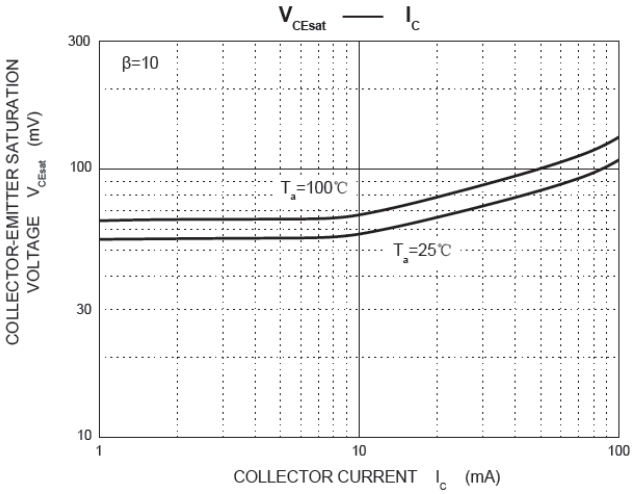


Figure 4. Collector-Emitter Saturation Voltage vs Collector Current

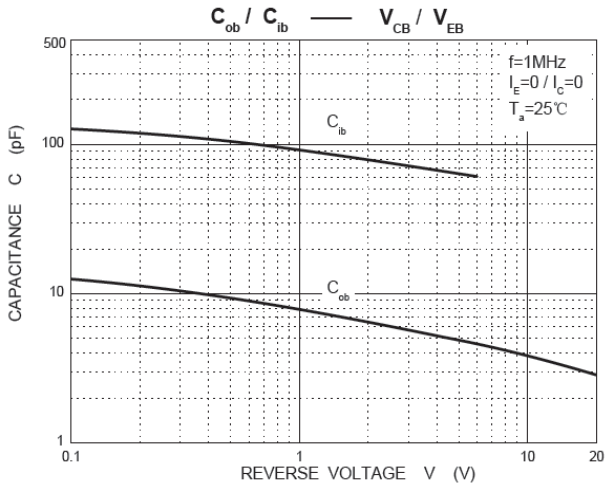


Figure 5. Capacitance Characteristics

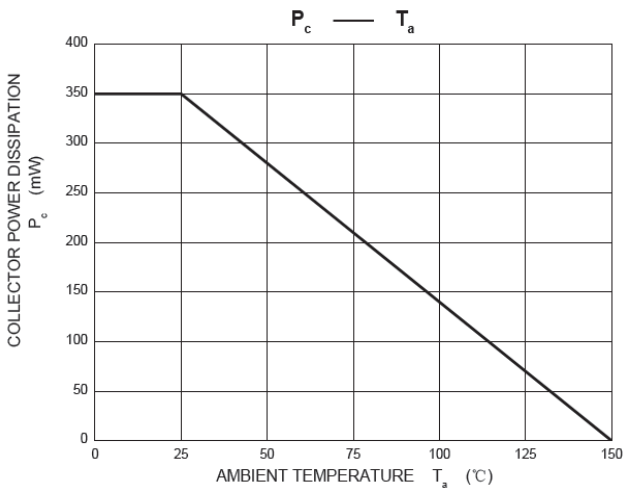
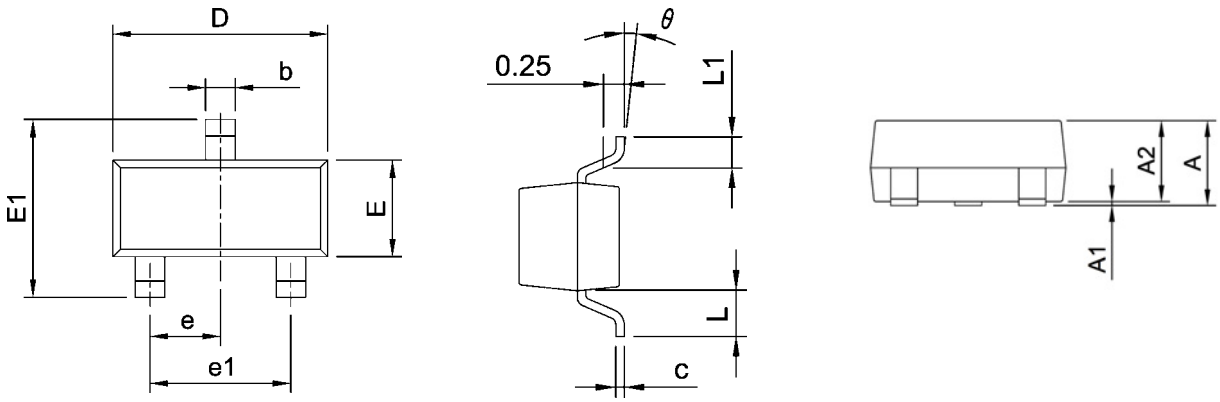


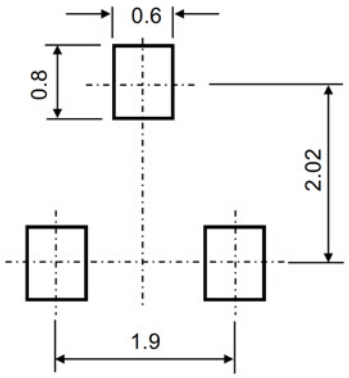
Figure 6. Power Derating Curve

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.