

## SOT-23 Plastic-Encapsulate Transistors

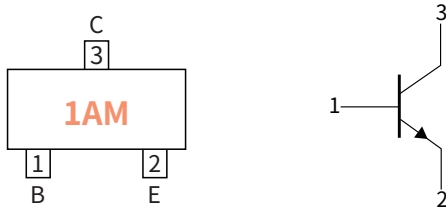
### Features

- Complementary to MMBT3906
- Power dissipation of 200mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

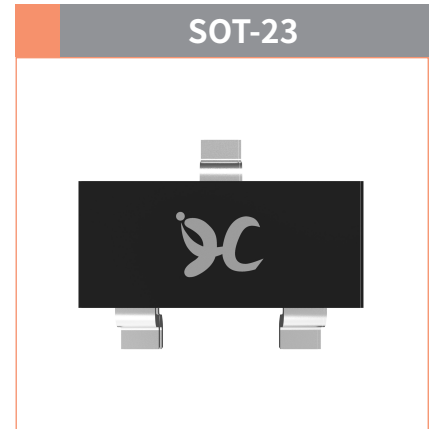
### Mechanical Data

- Case: SOT-23  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

### Function Diagram



**Collector-Base Voltage**  
VCBO 60V  
**Collector Current**  
0.2 Ampere



### Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	$V_{CBO}$	V	60
Collector-Emitter Voltage	$V_{CEO}$		40
Emitter-Base Voltage	$V_{EBO}$		6.0
Collector Current	$I_C$	mA	200
Collector Power Dissipation	$P_C$	mW	200
Storage temperature	$T_{stg}$	°C	-55 ~+150
Junction temperature	$T_j$	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	625

### Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=10\mu A, I_E=0$	60	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=1.0mA, I_B=0$	40	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=10\mu A, I_C=0$	6.0	—
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=60V, I_E=0$	—	100
Collector cut-off current	$I_{CEX}$		$V_{CE}=30V, V_{EB(off)}=3.0V$	—	50
Emitter-Base cut-off current	$I_{EBO}$		$V_{EB}=5.0V, I_C=0$	—	100
DC Current Gain	$h_{FE}$	—	$I_C=10mA, V_{CE}=1.0V$	100	300
			$I_C=50mA, V_{CE}=1.0V$	60	—
			$I_C=100mA, V_{CE}=1.0V$	30	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=50mA, I_B=5.0mA$	—	0.3
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		$I_C=50mA, I_B=5.0mA$	—	0.95
Delay time	$t_d$	ns	$V_{CC}=3.0V, V_{BE(off)}=0.5V$ $I_C=10mA, I_{B1}=1.0mA$	—	35
Rise time	$t_r$			—	35
Storage time	$t_s$			—	200
Fall time	$t_f$			—	50

## ● Classification Of $h_{FE}$

RANK	L	H
Range	100-200	200-300

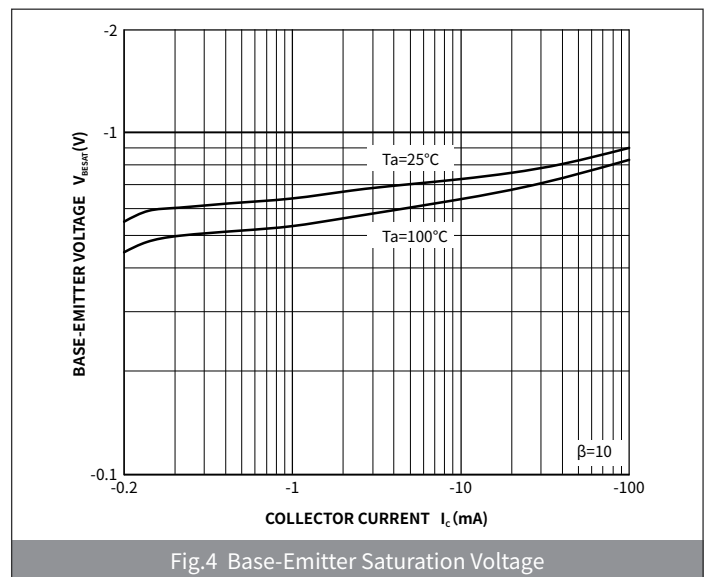
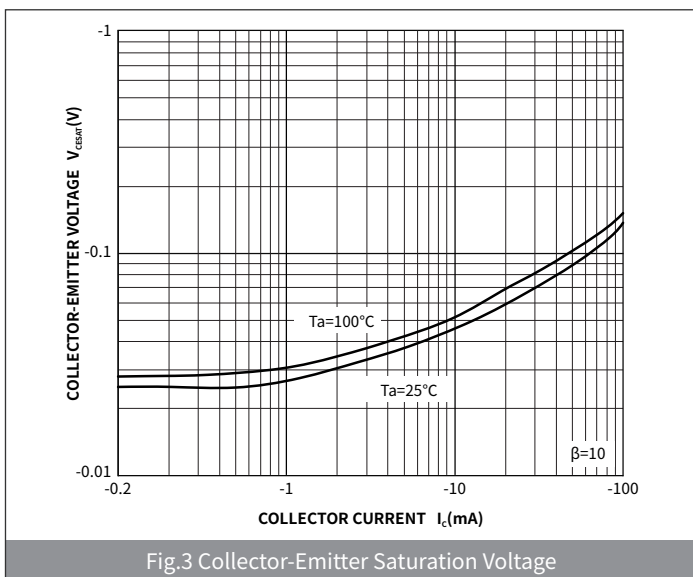
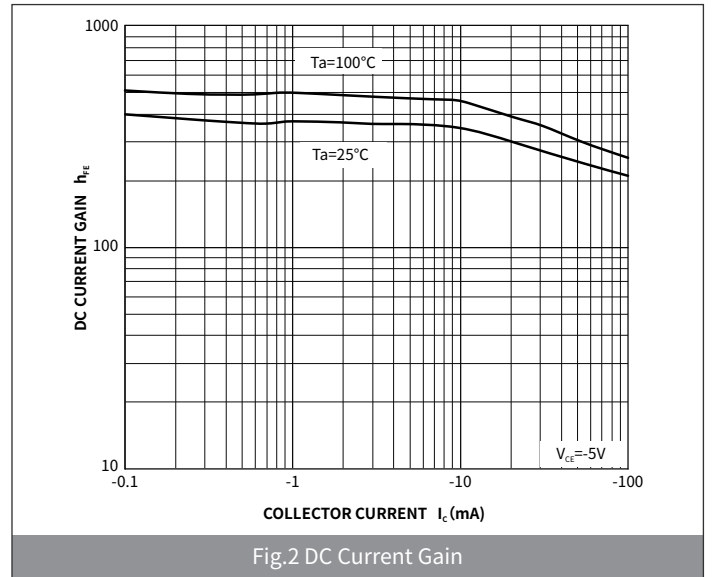
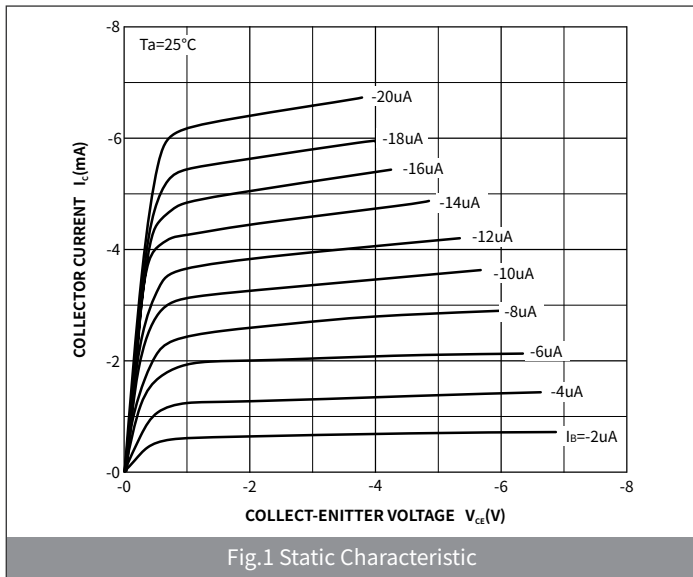
## ● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$	MHz	300	—

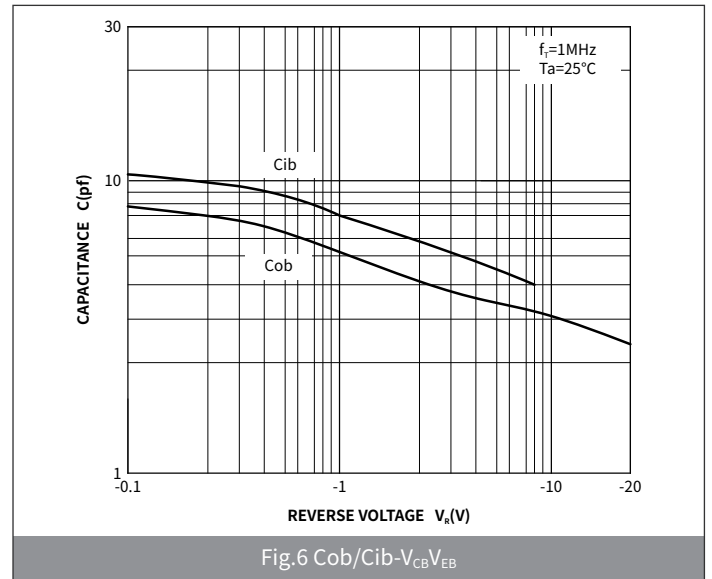
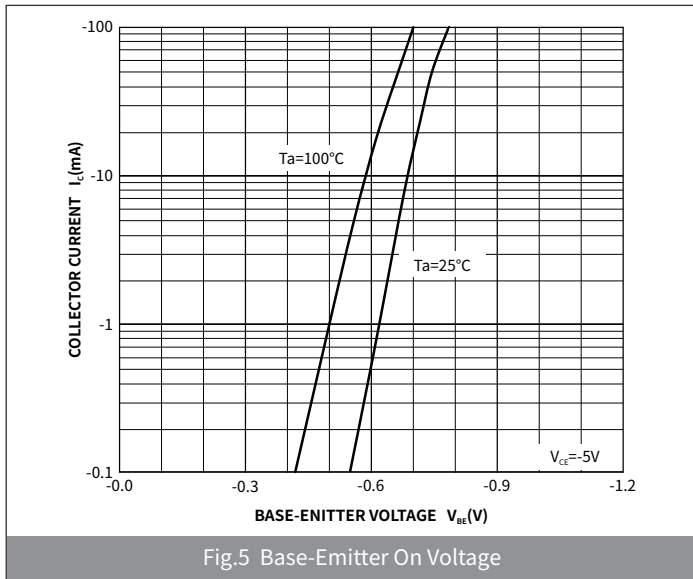
## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	120000	7"

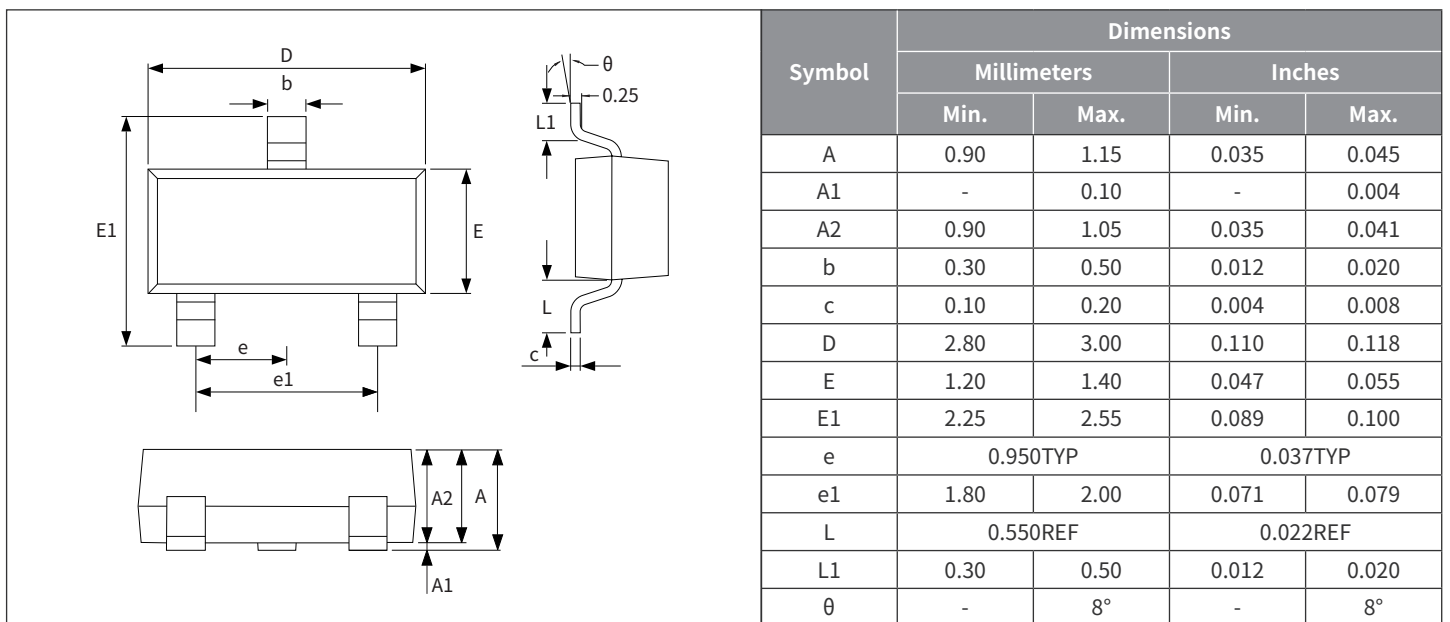
## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

