

SOT-23 Plastic-Encapsulate Transistors

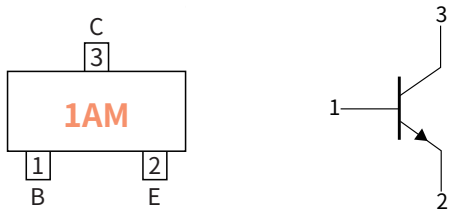
Features

- 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

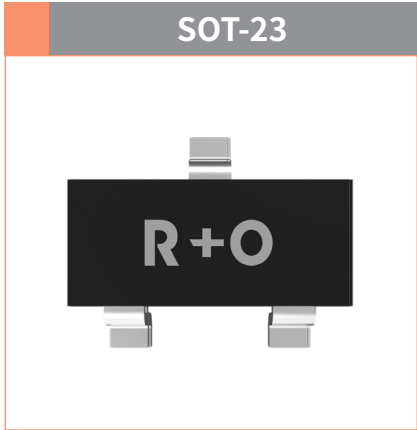
Mechanical Data

- 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}		$V_{CE}=30V, V_{BE(off)}=3.0V$	—	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	$V_{CC}=3.0V, V_{BE(off)}=0.5V$	—	35
Rise time	t_r		$I_C=10mA, I_{B1}=1.0mA$	—	35
Storage time	t_s		$V_{CC}=3.0V, I_C=10mA$	—	200
Fall time	t_f		$I_{B1}=I_{B2}=1.0mA$	—	50

● Classification Of h_{FE}

RANK	L	H
Range	100-200	200-300

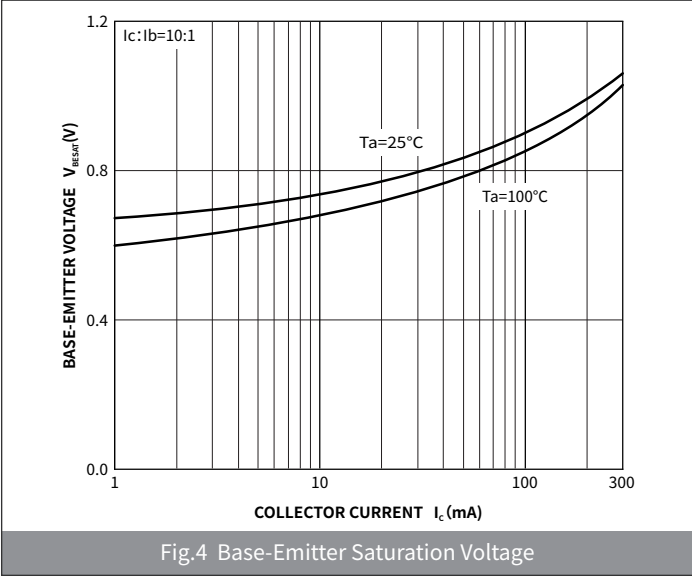
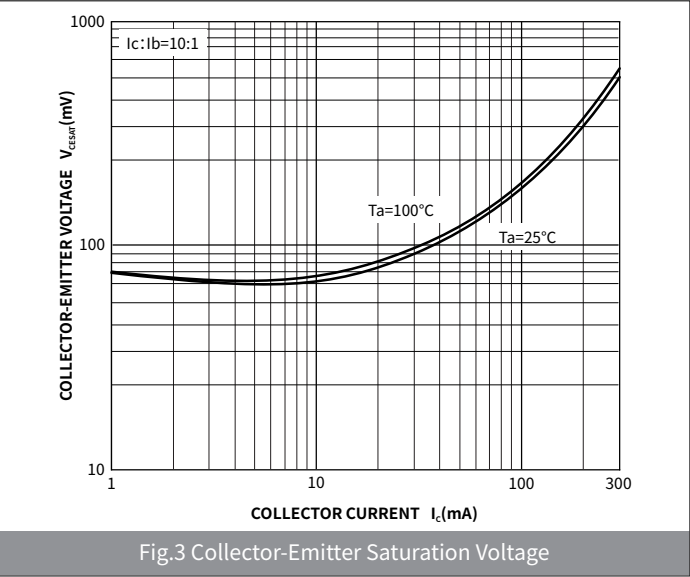
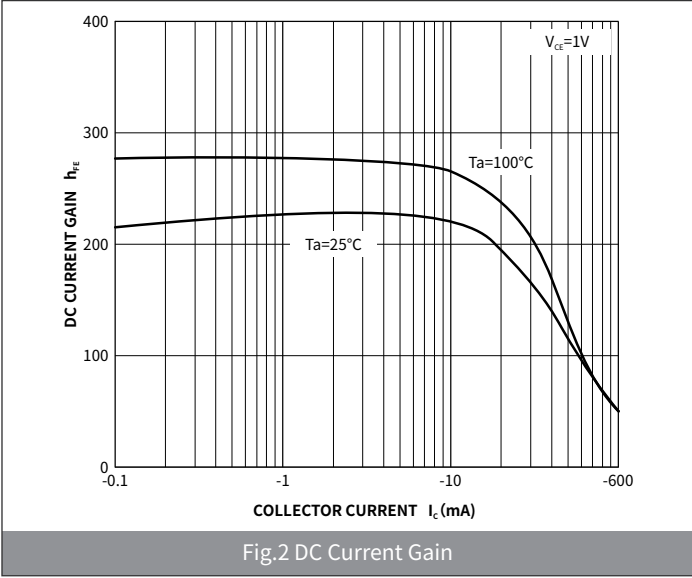
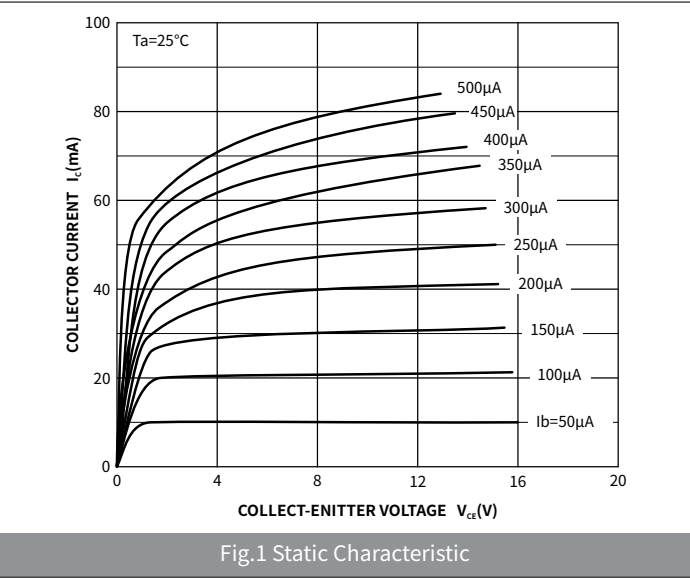
● Small-signal Characteristics

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	—

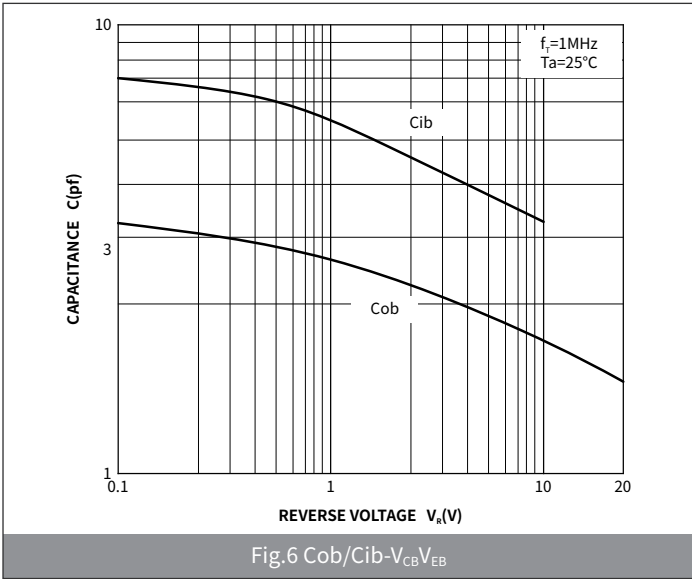
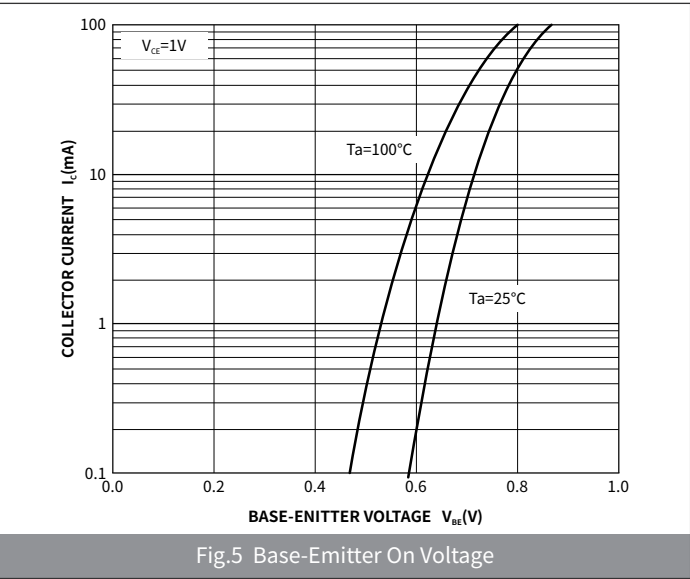
● Ordering Information

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

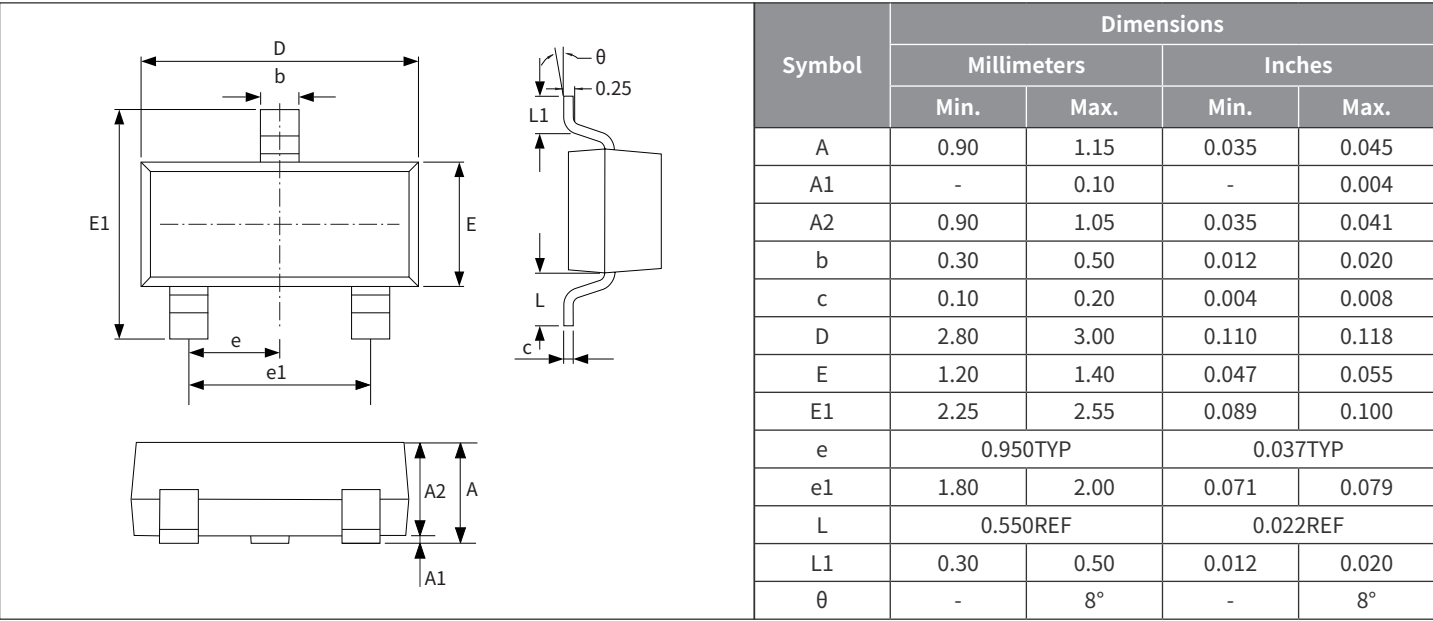
● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

