

SOT-23 Plastic-Encapsulate Transistors

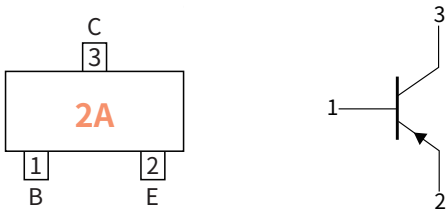
Features

- Complementary to MMBT3904
- Power dissipation of 200mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

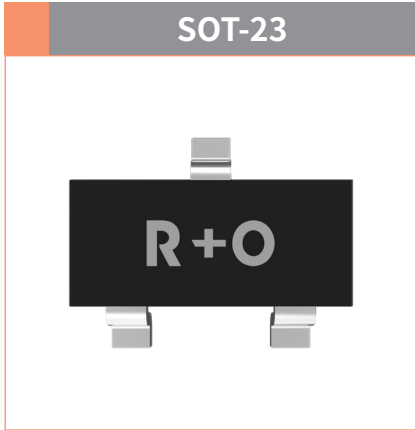
Mechanical Data

- 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 -40V
Collector Current
-0.2 Ampere



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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V _{CBO}	V	-40
Collector-Emitter Voltage	V _{CEO}		-40
Emitter-Base Voltage	V _{EBO}		-5.0
Collector Current	I _C	A	-0.2
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 _{θJA}	°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 =-10μA, I _E =0	-40	—
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}		I _C =-1.0mA, I _B =0	-40	—
Emitter-Base Breakdown Voltage	V _{(BR)EBO}		I _E =-10μA, I _C =0	-5.0	—
Collector-Base cut-off current	I _{CBO}	nA	V _{CB} =-40V, I _E =0	—	-50
Collector cut-off current	I _{CEX}		V _{CE} =-30V, V _{EB(off)} =-3.0V	—	-100
Emitter-Base cut-off current	I _{EBO}		V _{EB} =-5.0V, I _C =0	—	-100
DC Current Gain	h _{FE}	—	V _{CE} =-1.0V, I _C =-10mA	100	300
			V _{CE} =-1.0V, I _C =-50mA	60	—
			V _{CE} =-1.0V, I _C =-100mA	30	—
Collector-Emitter Saturation Voltage	V _{CE(sat)}	V	I _C =-50mA, I _B =-5mA	—	-0.30
Base-Emitter Saturation Voltage	V _{BE(sat)}	V	I _C =-50mA, I _B =-5mA	—	-0.95
Delay time	t _d	ns	V _{CC} =-3V, V _{BE(off)} =-0.5V, I _C =-10mA, I _{B1} =I _{B2} =-1mA	—	35
Rise time	t _r			—	35
Storage time	t _s		V _{CC} =-3V, I _C =-10mA, I _{B1} =I _{B2} =-1mA	—	225
Fall time	t _f			—	75

● Classification Of h_{FE}

RANK	L	H
Range	100-200	200-300

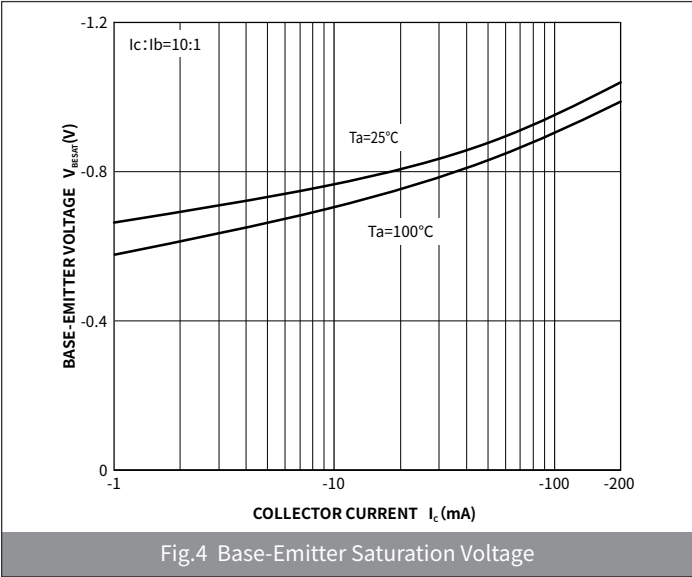
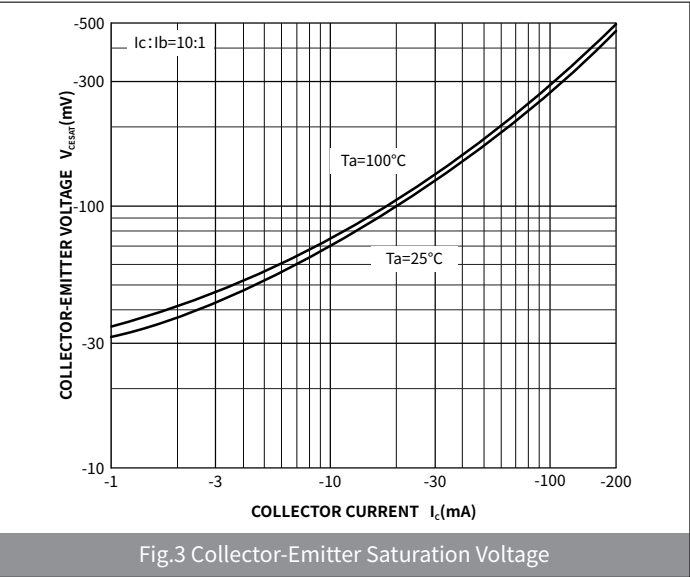
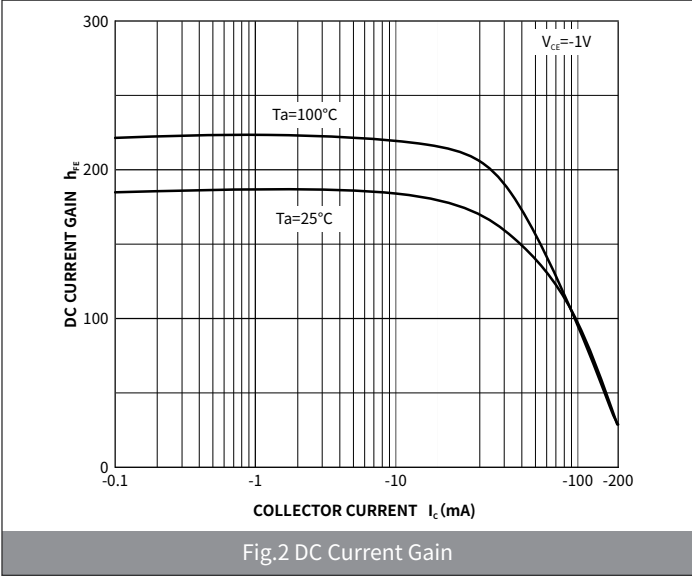
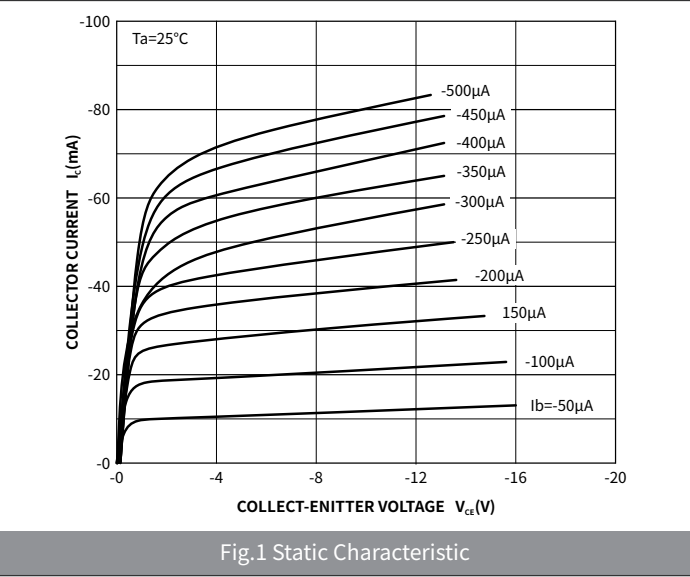
● Small-signal Characteristics

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	—

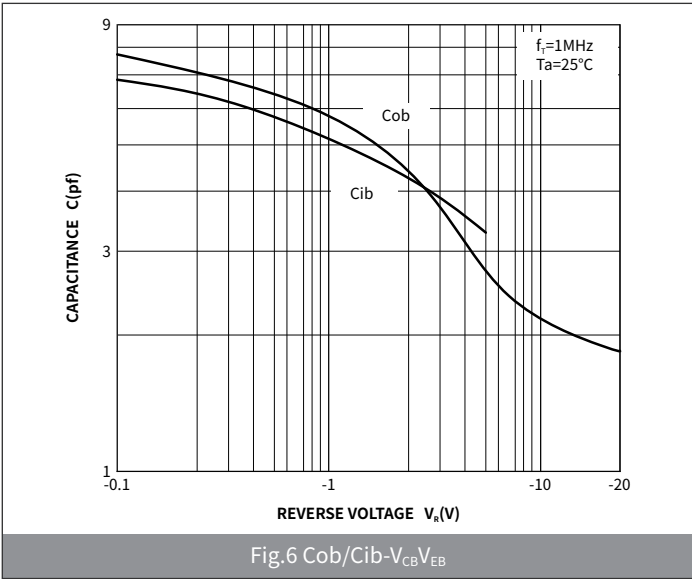
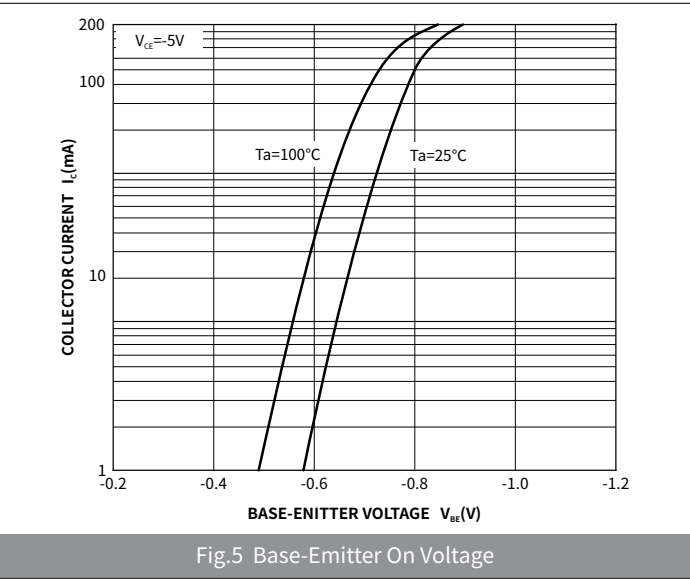
● Ordering Information

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

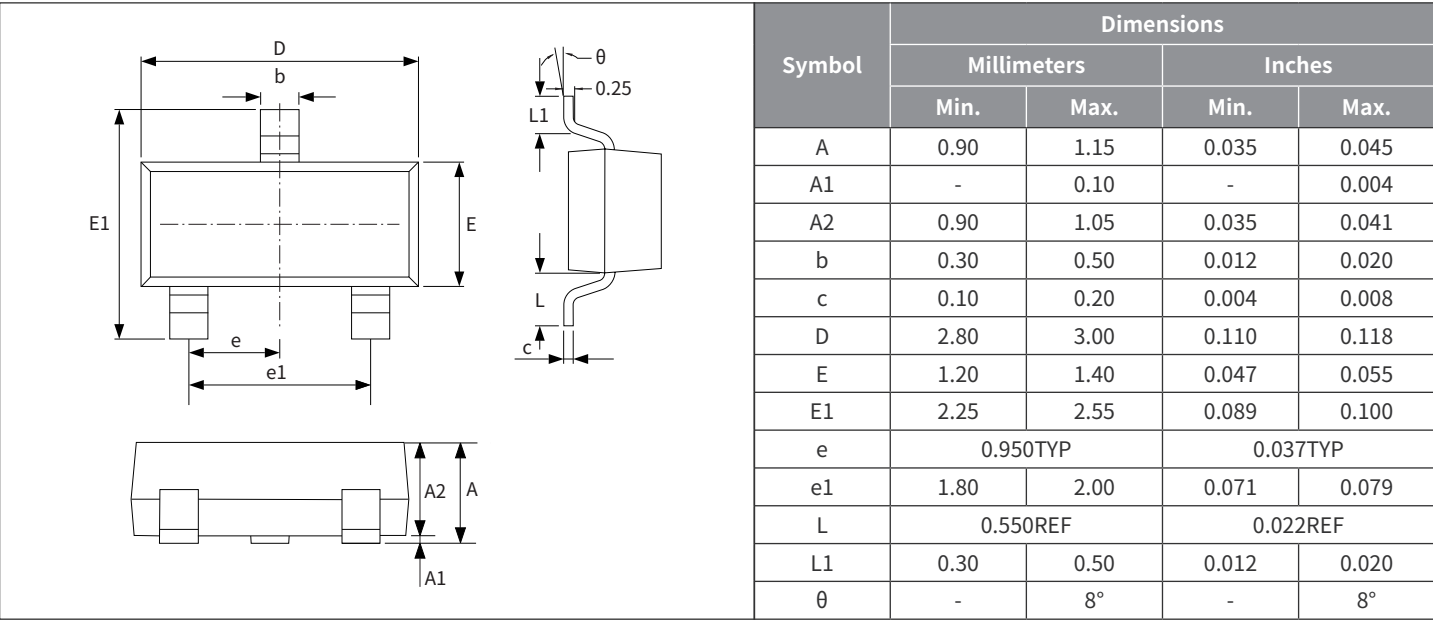
● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

