

## SOT-23 Plastic-Encapsulate Transistors

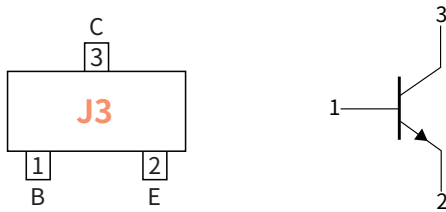
### Features

- Complementary to S9012
- Power dissipation of 300mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

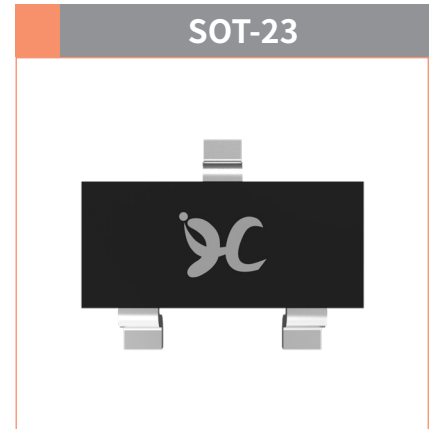
### Mechanical Data

- 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**  
0.5Ampere



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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	$V_{CBO}$	V	40
Collector-Emitter Voltage	$V_{CEO}$		25
Emitter-Base Voltage	$V_{EBO}$		5.0
Collector Current	$I_C$	A	0.5
Collector Power Dissipation	$P_C$	mW	300
Storage temperature	$T_{stg}$	°C	-55 ~+150
Junction temperature	$T_j$	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	417

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

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	40	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=0.1mA, I_B=0$	25	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=100\mu A, I_C=0$	5.0	—
Collector-Emitter cut-off current	$I_{CEO}$	$\mu A$	$V_{CE}=20V, I_B=0$	—	0.1
Collector-Base cut-off current	$I_{CBO}$		$V_{CB}=40V, I_E=0$	—	0.1
Emitter-Base cut-off current	$I_{EBO}$		$V_{EB}=5.0V, I_C=0$	—	0.1
DC Current Gain	$h_{FE(1)}$	—	$I_C=50mA, V_{CE}=1.0V$	120	400
	$h_{FE(2)}$		$I_C=500mA, V_{CE}=1.0V$	40	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	0.6
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	1.2

## ● Classification Of $h_{FE}$

RANK	L	H	J
Range	120-200	200-350	300-400

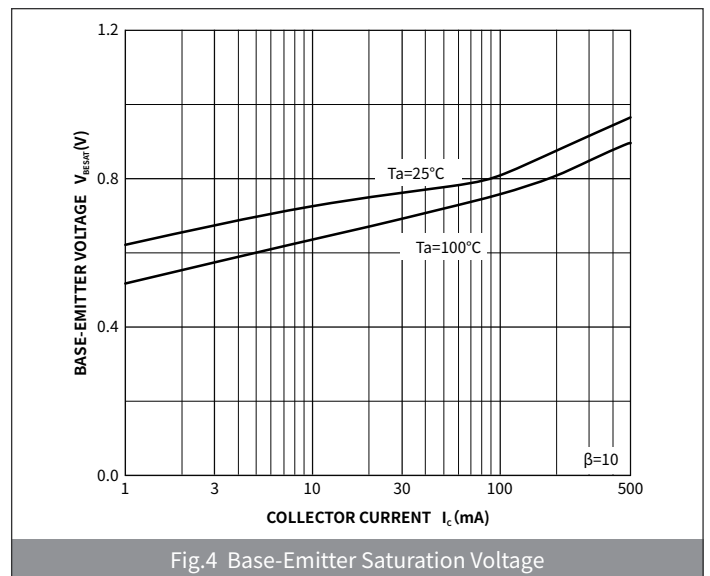
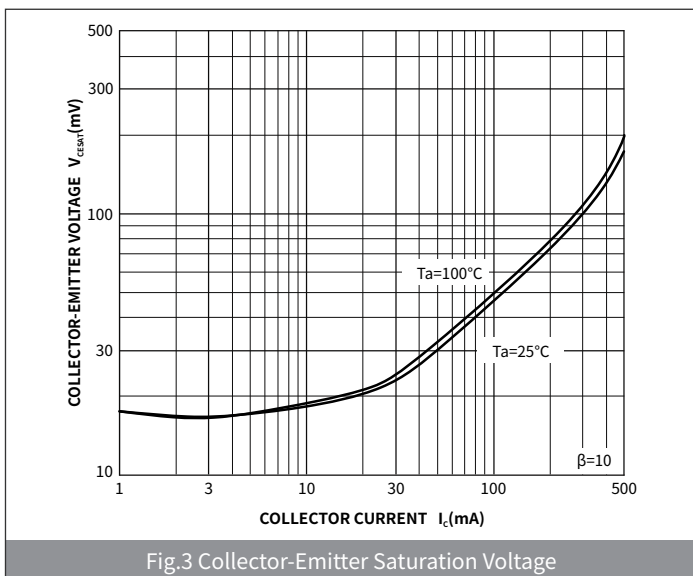
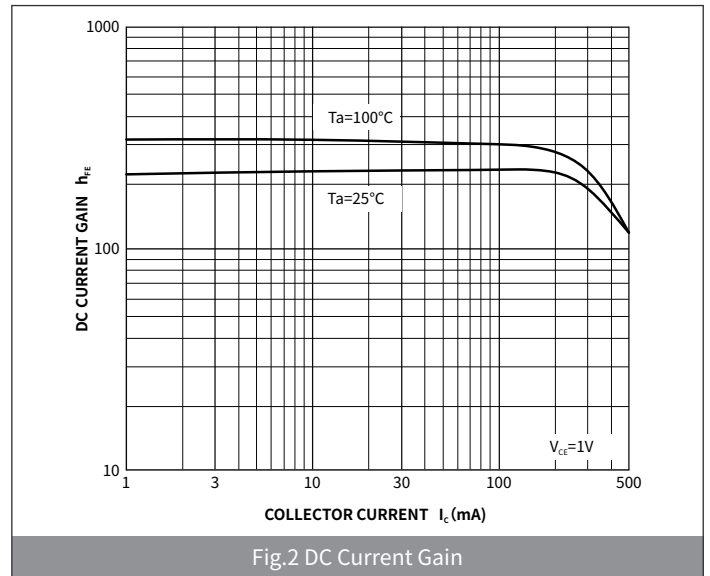
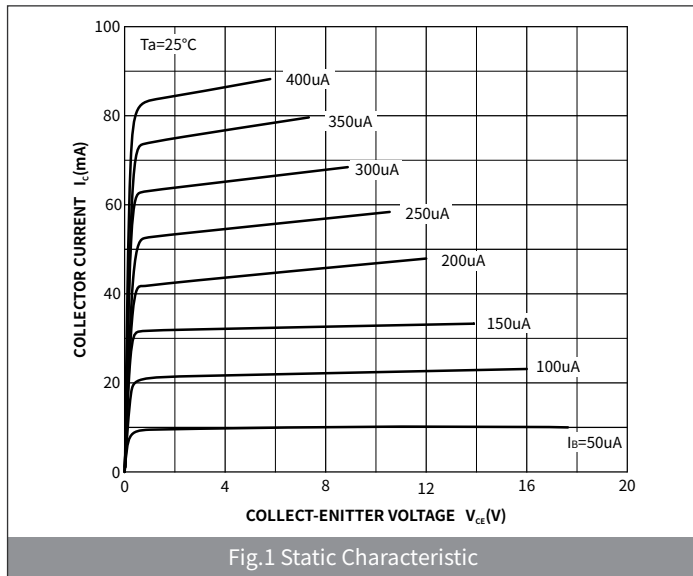
## ● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	$f_T$	$I_C=20mA, V_{CE}=6V, f=30MHz$	MHz	150	—

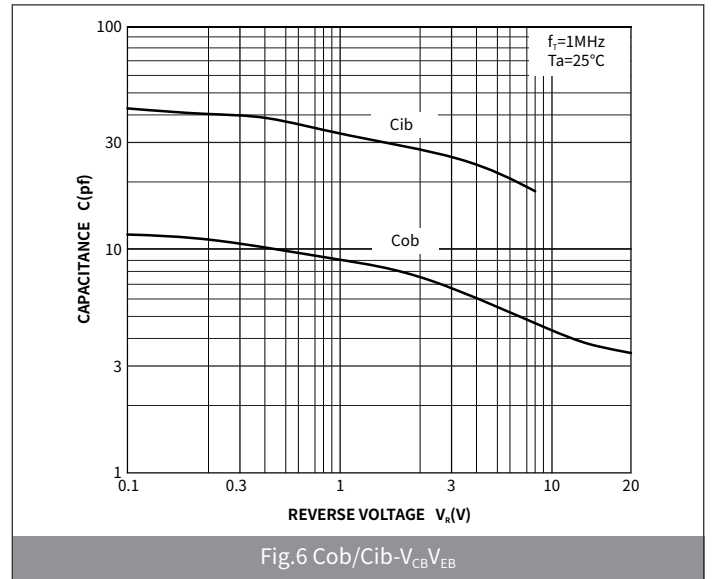
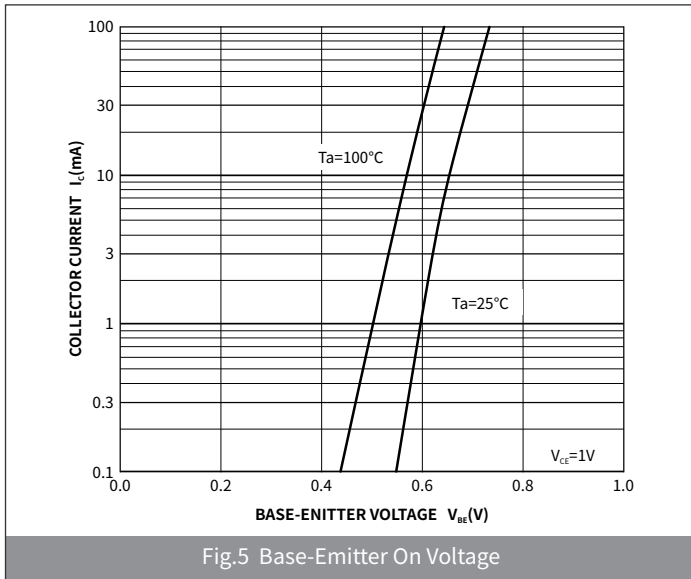
## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

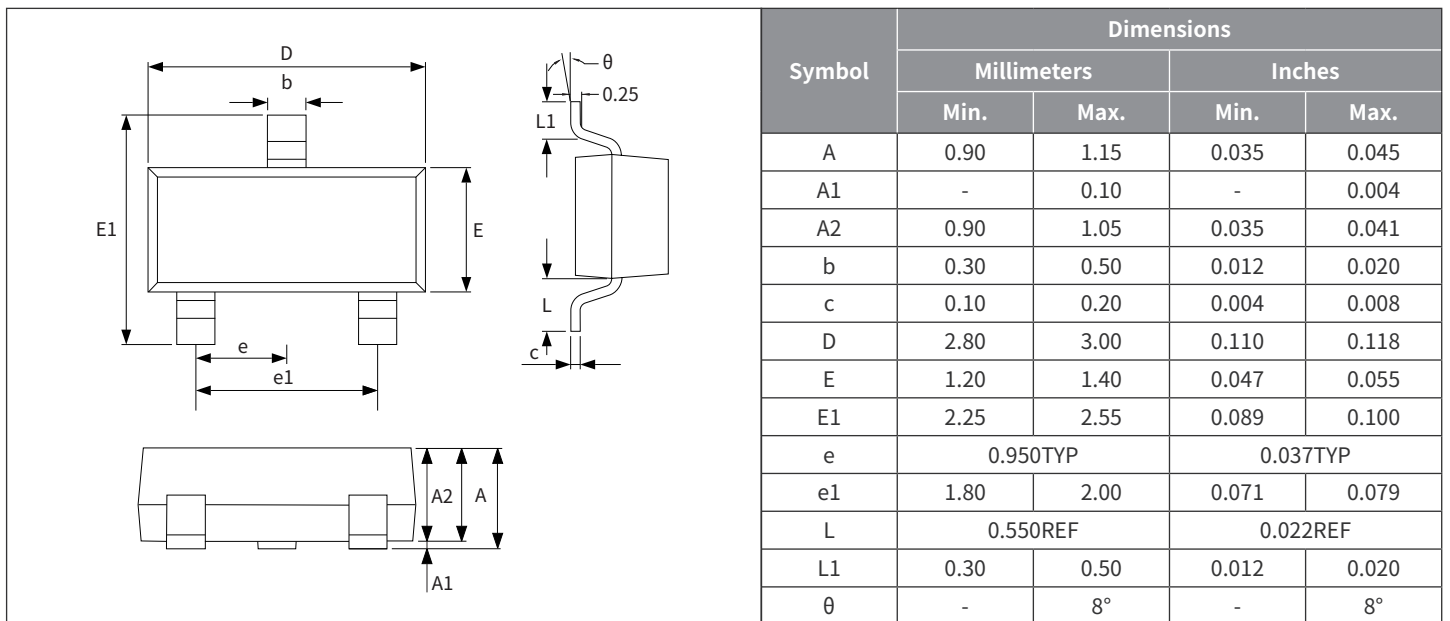
## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

