

## SOT-23 Plastic-Encapsulate Transistors

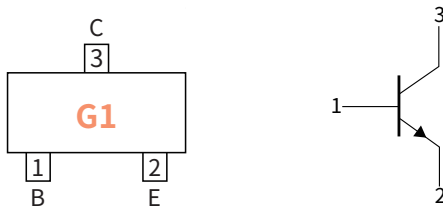
### Features

- Complementary to MMBT5401
- Power dissipation of 300mW
- Ideal for medium power amplification and switching

### 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



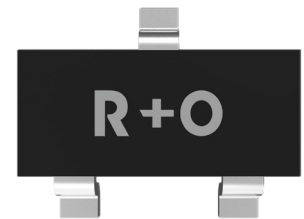
**Collector-Emitter Voltage**

V<sub>CEO</sub> 160V

**Collector Current**

0.6 Ampere

SOT-23



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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V <sub>CBO</sub>	V	180
Collector-Emitter Voltage	V <sub>CEO</sub>		160
Emitter-Base Voltage	V <sub>EBO</sub>		6.0
Collector Current	I <sub>C</sub>	A	0.6
Collector Power Dissipation	P <sub>C</sub>	mW	300
Storage temperature	T <sub>stg</sub>	°C	-55 ~+150
Junction temperature	T <sub>j</sub>	°C	-55 ~+150
Typical Thermal Resistance	R <sub>θJA</sub>	°C /W	417

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

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0	180		—
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>		I <sub>C</sub> =1.0mA, I <sub>B</sub> =0	160		—
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>		I <sub>E</sub> =10μA, I <sub>C</sub> =0	6.0		—
Collector-Base cut-off current	I <sub>CBO</sub>	nA	V <sub>CB</sub> = 180V, I <sub>E</sub> =0	—	—	100
Collector-Emitter cut-off current	I <sub>CEO</sub>		V <sub>CE</sub> = 120V, I <sub>B</sub> =0	—	—	100
Emitter-Base cut-off current	I <sub>EBO</sub>		V <sub>EB</sub> = 6V, I <sub>C</sub> =0	—	—	100
DC Current Gain	h <sub>FE</sub>	—	I <sub>C</sub> = 1.0mA, V <sub>CE</sub> = 5.0V	80		—
			I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5.0V	200		300
			I <sub>C</sub> = 100mA, V <sub>CE</sub> =5.0V	50		—
Collector-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	V	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1.0mA	—		0.15
Collector-Emitter Saturation Voltage	V <sub>CE(sat)2</sub>		I <sub>C</sub> = 50mA, I <sub>B</sub> = 5.0mA	—		0.2
Base-Emitter Saturation Voltage	V <sub>BE(sat)1</sub>		I <sub>C</sub> = 10mA, I <sub>B</sub> = 1.0mA	—		1.0
Base-Emitter Saturation Voltage	V <sub>BE(sat)2</sub>		I <sub>C</sub> = 50mA, I <sub>B</sub> = 5.0mA	—		1.0
Output Capacitance	C <sub>ob</sub>	pF	V <sub>CB</sub> = 10V, I <sub>E</sub> =0, f=1MHz	—	6	—

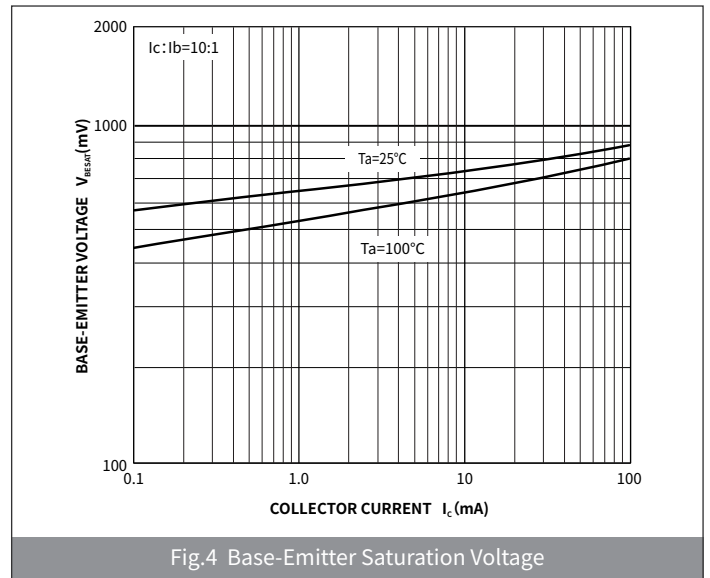
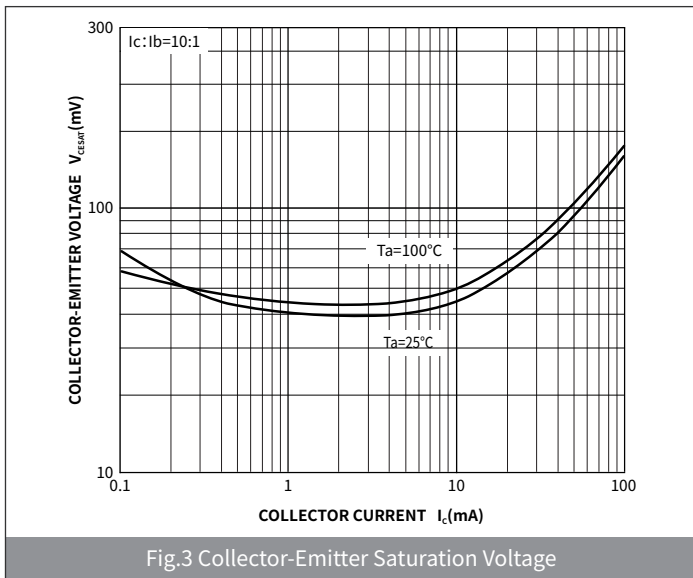
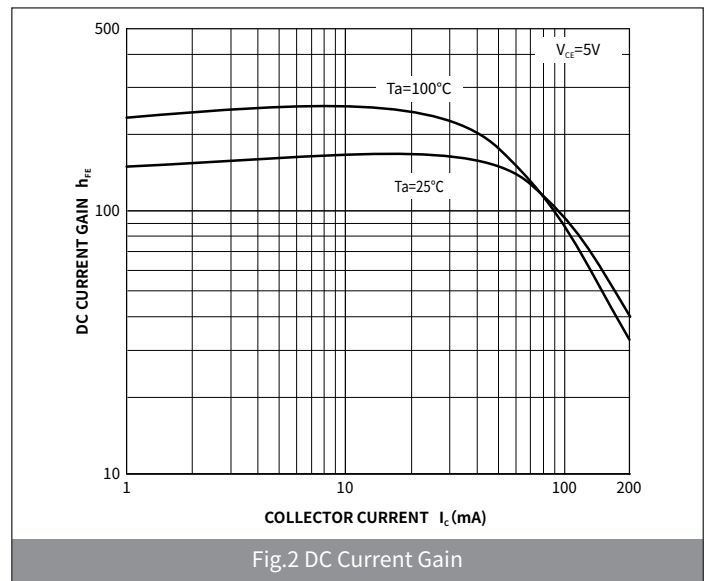
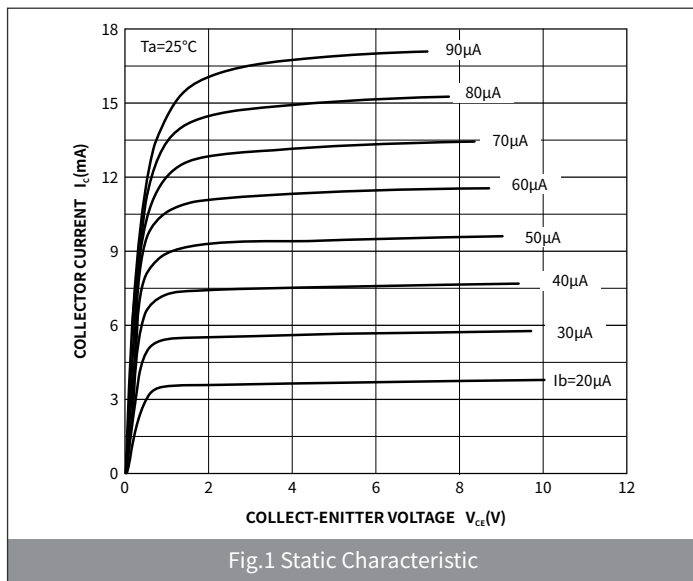
## ● Small-signal Characteristics

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

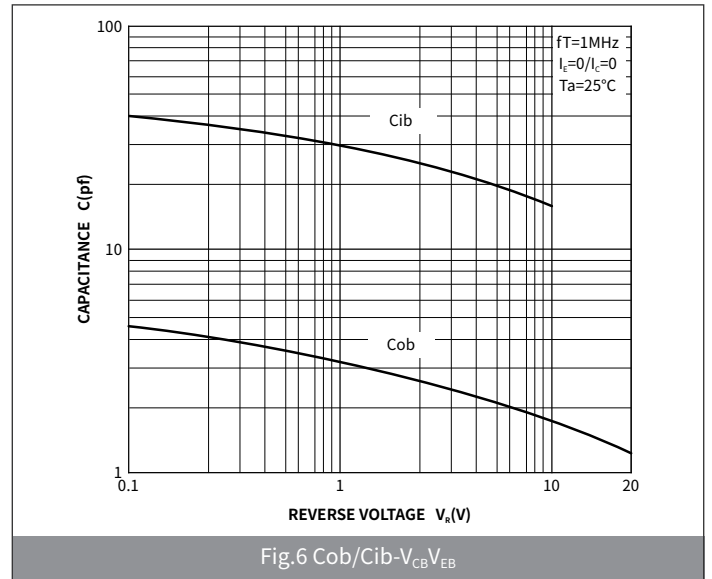
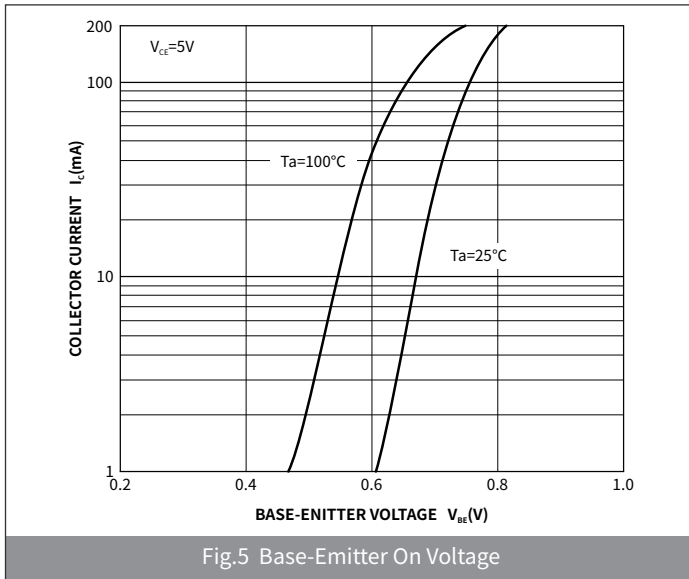
## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	180000	7"

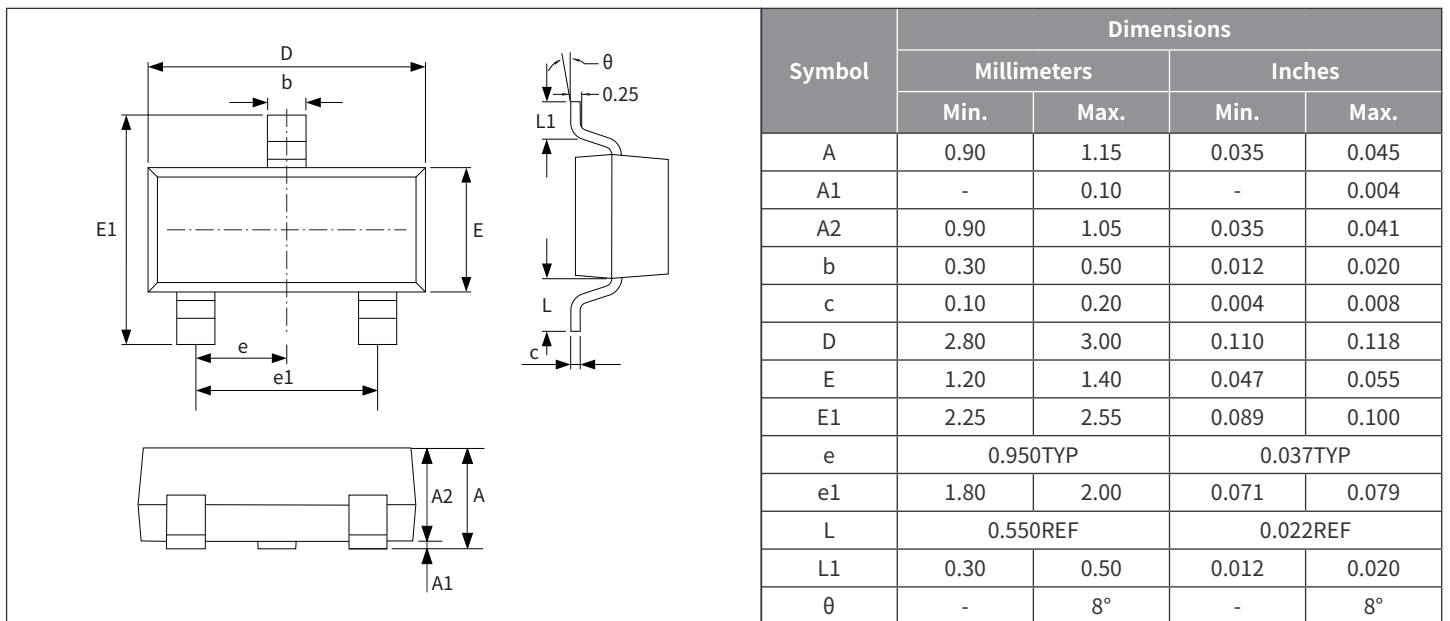
## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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### ● Package Outline Dimensions (SOT-23)



### ● Suggested Pad Layout

