

SOT-23 Plastic-Encapsulate Transistors

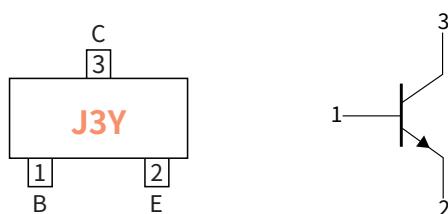
Features

- Complementary to S8550
- 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



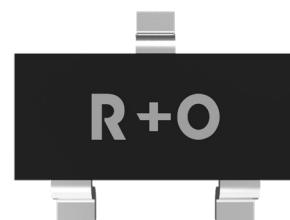
Collector-Base Voltage

VCBO 40V

Collector Current

0.5 Ampere

SOT-23



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 _{θJ-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 =100μA, I _E =0	40	—
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}		I _C =1mA, I _B =0	25	—
Emitter-Base Breakdown Voltage	V _{(BR)EBO}		I _E =100μA, I _C =0	5.0	—
Collector-Emitter cut-off current	I _{CEO}	nA	V _{CE} =20V, I _B =0	—	100
Collector-Base cut-off current	I _{CBO}		V _{CB} =40V, I _E =0	—	100
Emitter-Base cut-off current	I _{EBO}		V _{EB} =5.0V, I _C =0	—	100
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	50	—
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	100-200	200-350	300-400

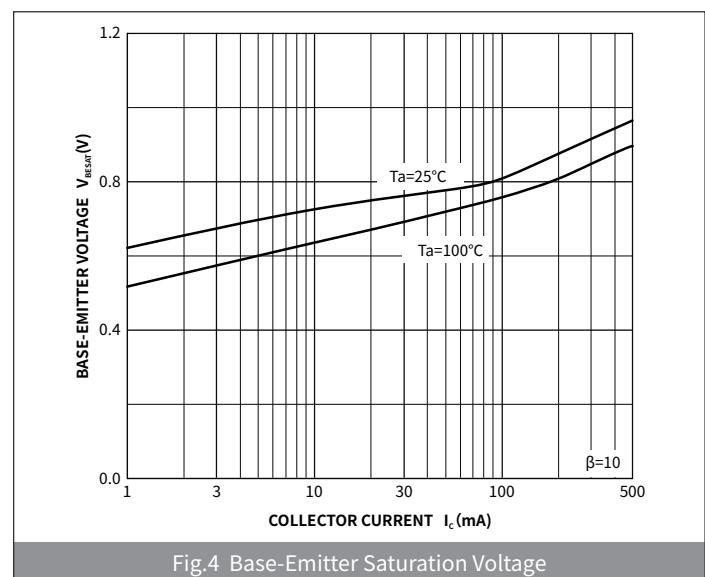
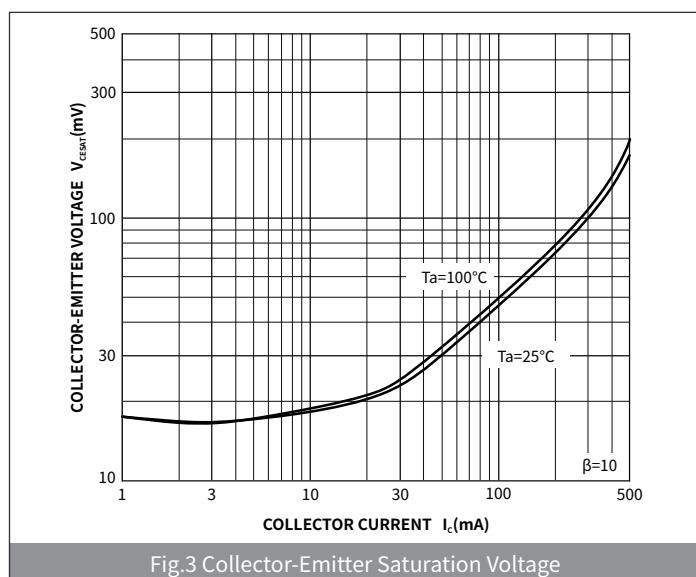
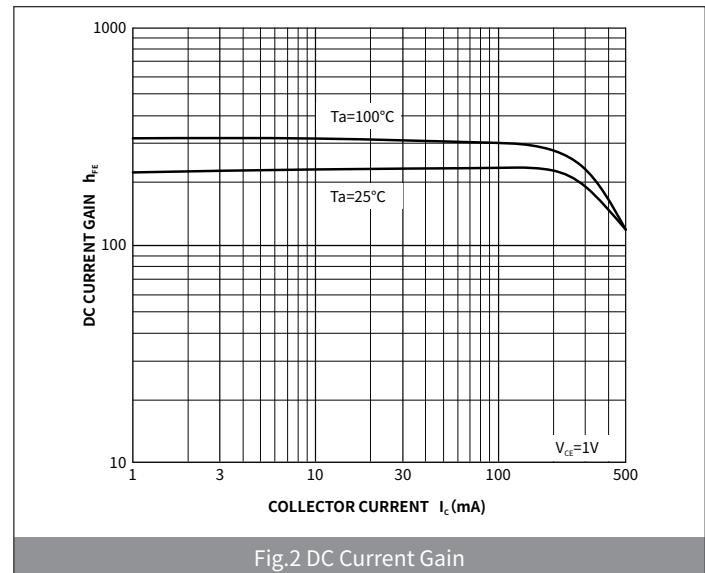
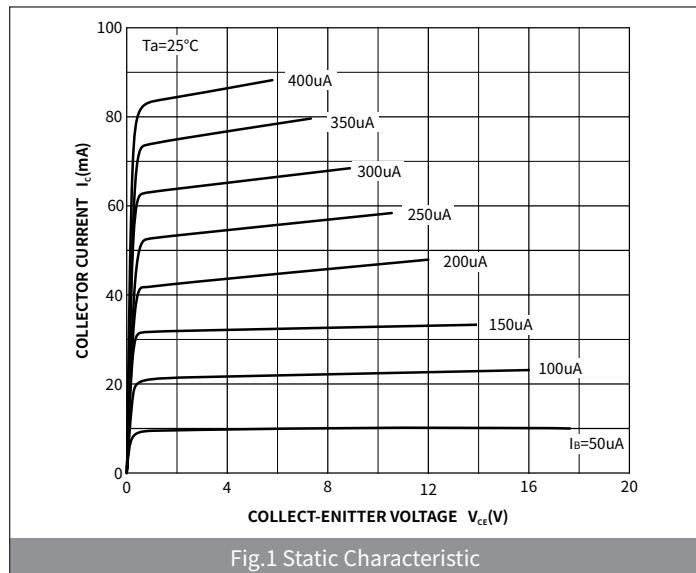
Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=20mA, V_{CE}=6V, f=30MHz$	MHz	100	-

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 ($T_a=25^{\circ}C$ Unless otherwise specified)



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

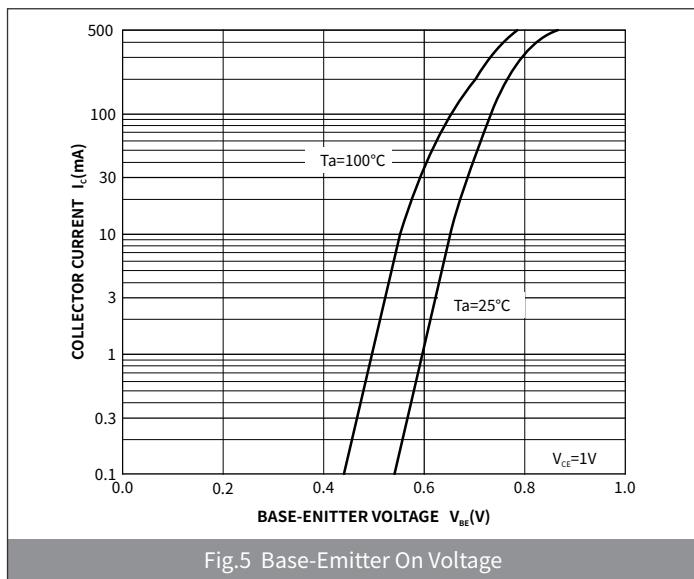


Fig.5 Base-Emitter On Voltage

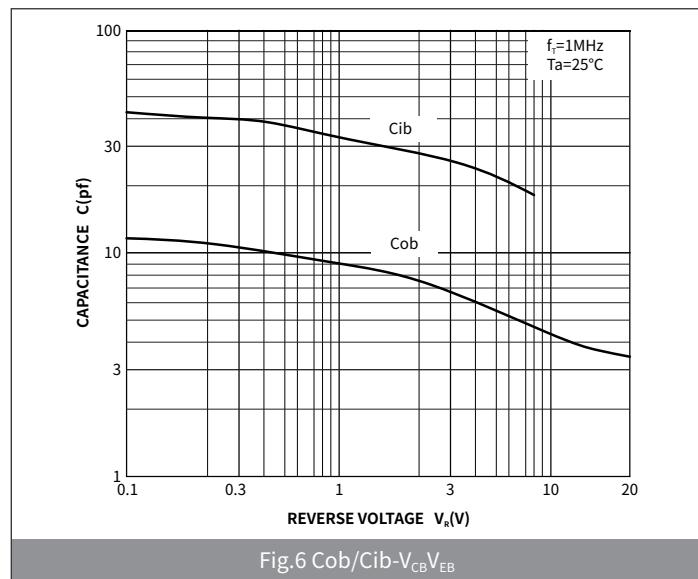
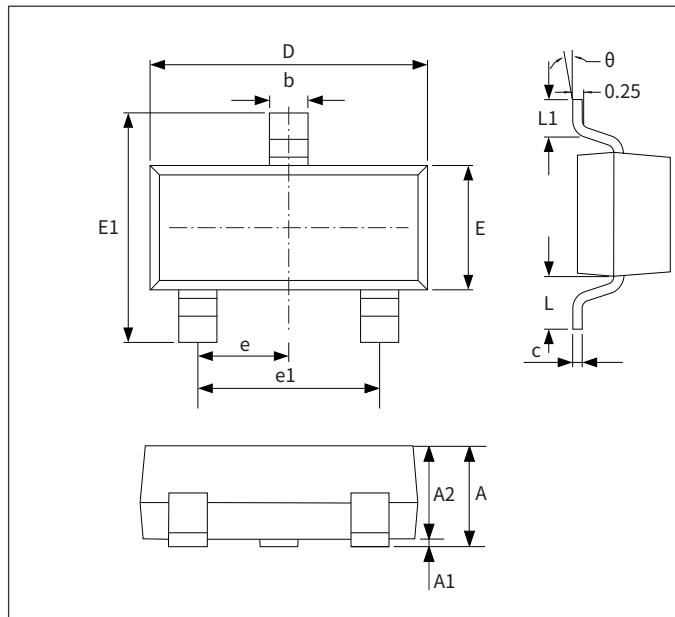


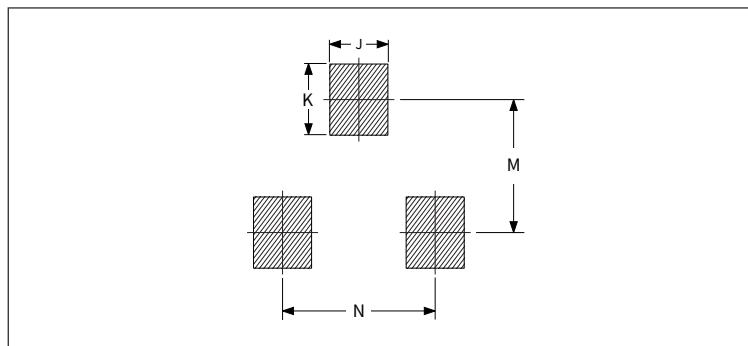
Fig.6 Cob/Cib- $V_{cb}V_{eb}$

● Package Outline Dimensions (SOT-23)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077