

SOT-323 Plastic-Encapsulate Transistors

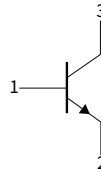
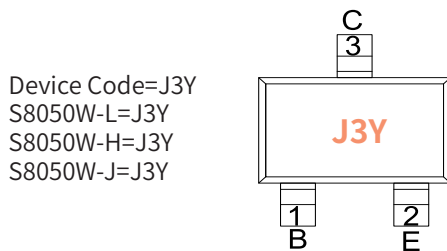
Features

- Complimentary to S8550W
- Power dissipation of 200mW

Mechanical Data

- Case: SOT-323
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Function Diagram



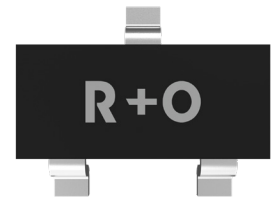
Collector-Emitter Voltage

V_{CEO} 25V

Collector Current

0.5 Ampere

SOT-323



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.005	3000	45000	180000	7"

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
Collector Current	I _C	A	0.5
Collector Power Dissipation	P _C	mW	200
Storage temperature	T _{stg}	°C	-55 ~+150
Junction temperature	T _j	°C	150
Typical Thermal Resistance	R _{θJ-A}	°C /W	625

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

PARAMETER	SYMBOL	UNIT	Condition	Min	Type	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	40	—	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=1mA, I_B=0$	25	—	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=100\mu A, I_C=0$	5	—	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=40V, I_E=0$	—	—	100
Collector-Emitter cut-off current	I_{CEO}		$V_{CE}=20V, I_B=0$	—	—	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
Base-Emitter Voltage	V_{BE}	V	$V_{CE}=1V, I_C=10mA$	—	—	0.7

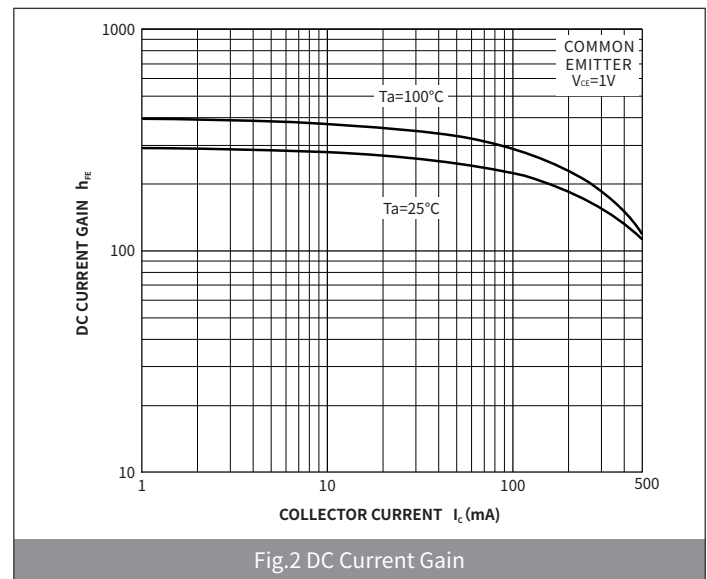
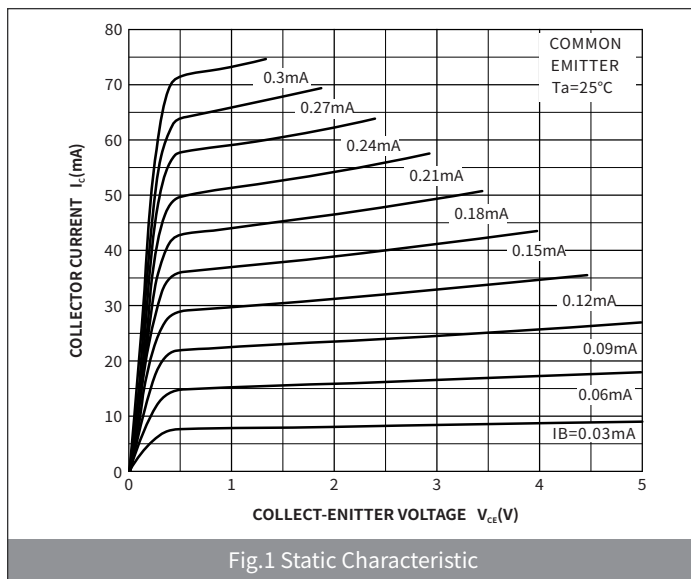
Small-signal Characteristics

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

Classification Of h_{FE}

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

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



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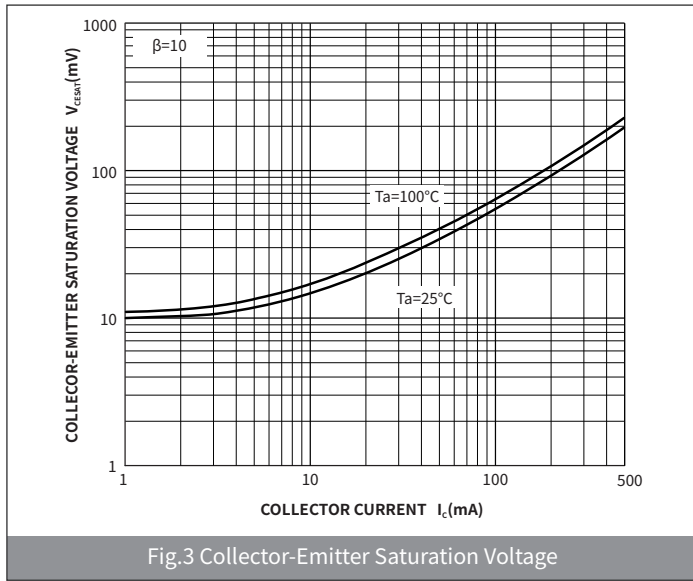


Fig.3 Collector-Emitter Saturation Voltage

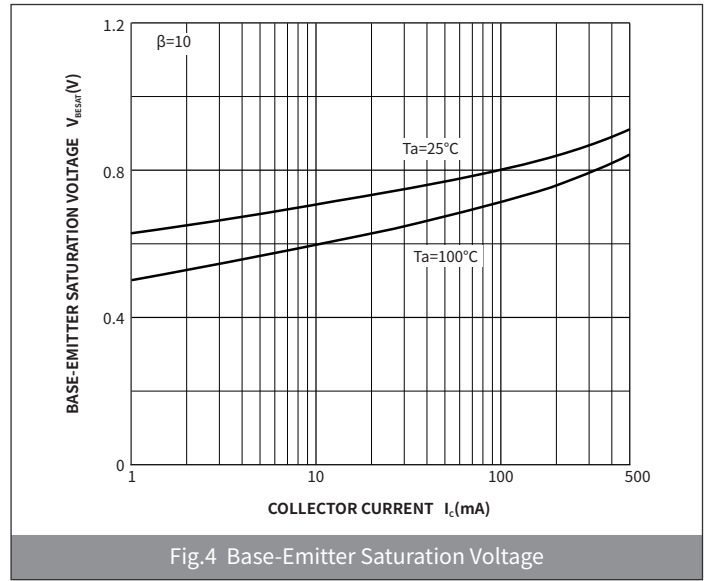


Fig.4 Base-Emitter Saturation Voltage

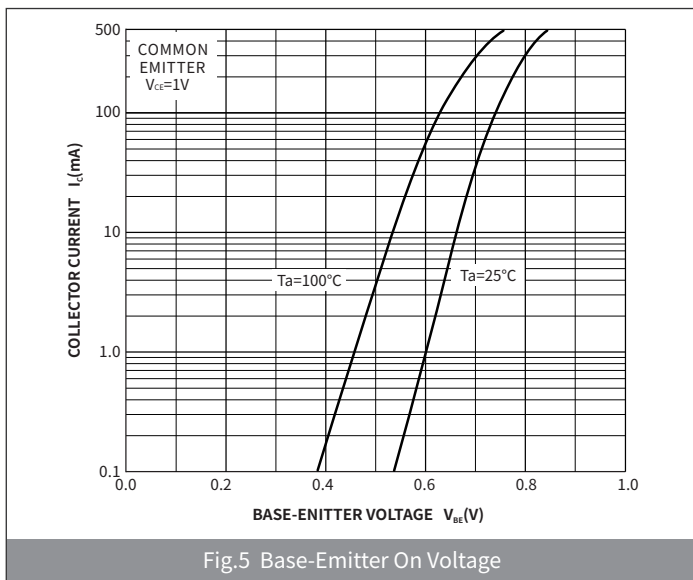


Fig.5 Base-Emitter On Voltage

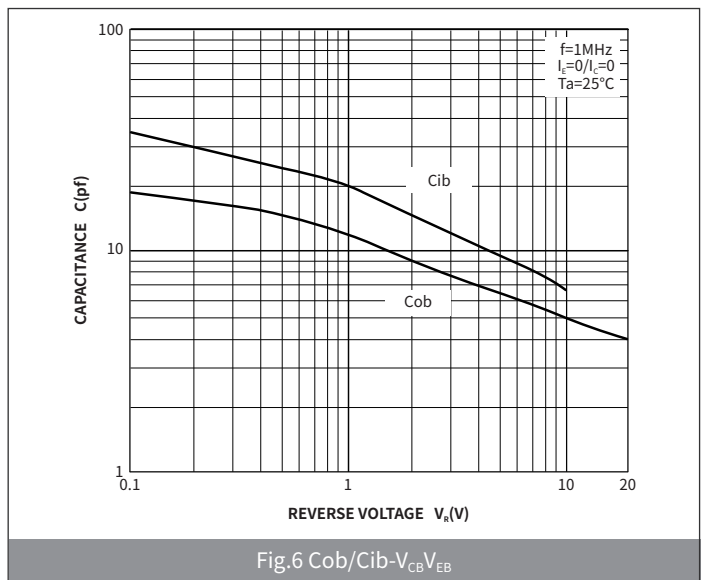


Fig.6 $C_{ob}/C_{ib}-V_{CB} V_{EB}$

S8050W-L THRU S8050W-J

NPN TRANSISTORS

● Package Outline Dimensions (SOT-323)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
A1	-	0.10	-	0.004
A2	0.90	1.00	0.035	0.039
b	0.30	0.40	0.012	0.020
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
E1	2.00	2.2	0.079	0.086
e	0.650TYP		0.026TYP	
e1	1.20	1.40	0.047	0.055
L	0.525REF		0.021REF	
L1	0.15	0.45	0.006	0.018
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.65	0.75	0.026	0.030
K	0.85	0.95	0.033	0.037
M	1.85	1.95	0.073	0.077
N	1.25	1.35	0.049	0.053