SOT-323 Plastic-Encapsulate Transistors

Features

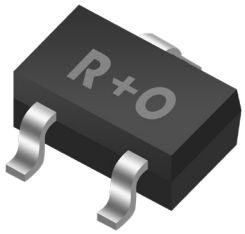
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

Collector-Emitter Voltage
VCE 50V
Collector Current
0.1 Ampere

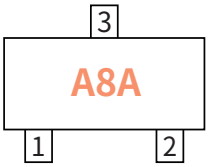
Mechanical Data

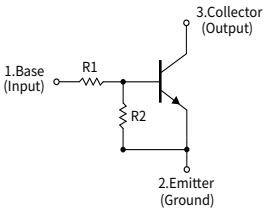
- Case: SOT-323
  Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

SOT-323



Function Diagram





Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.006	3000	45000	180000	7"

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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	50
Collector-Emitter Voltage	V_{CEO}	V	50
Collector Current	I_C	mA	100
Power Dissipation	P_D	mW	246
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	°C /W	618
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	150

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

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	I_C=10μA, I_E=0	50	—	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		I_C=2mA, I_B=0	50	—	—
Collector-Base cut-off current	I_{CBO}	nA	V_{CB}=50V,I_E=0	—	—	100
Collector-Emitter cut-off current	I_{CEO}		V_{CE}=50V,I_E=0	—	—	500
Emitter-Base cut-off current	I_{EBO}	mA	V_{EB}=6V,I_C=0	—	—	0.5
DC Current Gain	h_{FE}	—	I_C=5mA V_{CE}=10V	35	60	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	I_C=10mA I_B= 0.3mA	—	—	0.25
Output Voltage (on)	V_{OL}	V	V_{CC}= 5V,V_B=2.5V,R_L= 1KΩ	—	—	0.2
Output Voltage (on)	V_{OH}	V	V_{CC}= 5V,V_B=0.5V,R_L= 1KΩ	4.9	—	—
Input resistance	R_1	kΩ	-	7.0	10	13
Resistance ratio	R_1/R_2	-	-	0.8	1.0	1.2

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

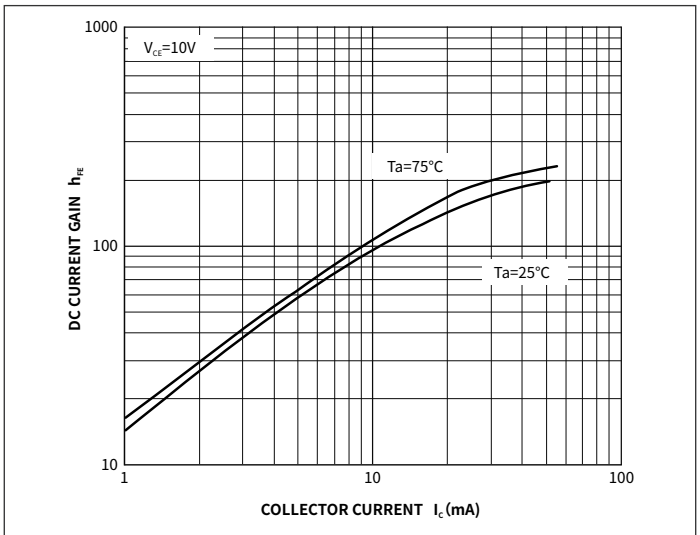


Fig.1 DC Current Gain

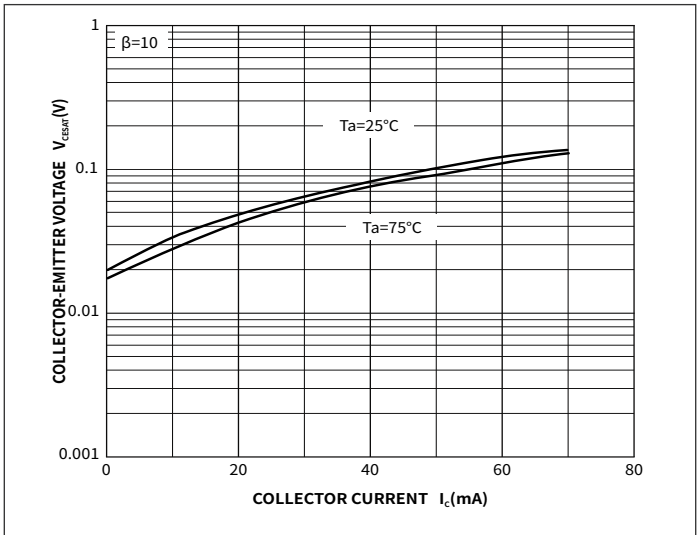


Fig.2 Collector-Emitter Saturation Voltage

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

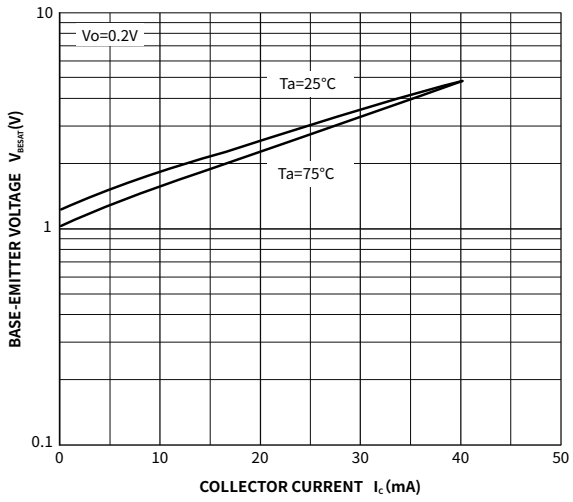


Fig.3 Base-Emitter Saturation Voltage

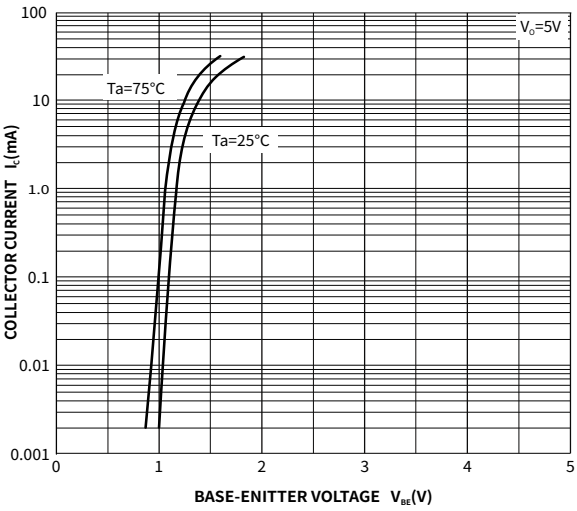


Fig.4 Collector-Base Emitter Voltage

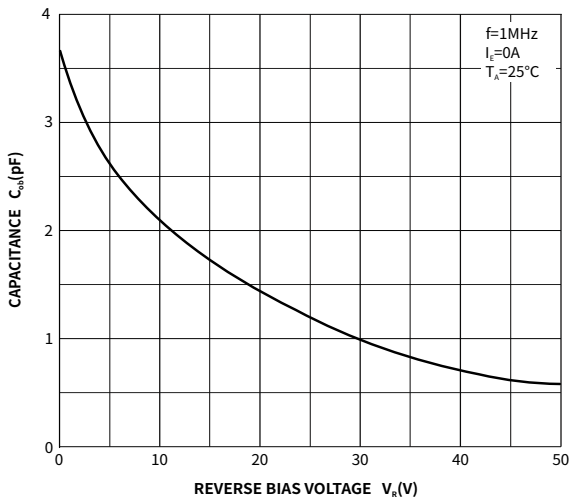


Fig.5 Output Capcitance

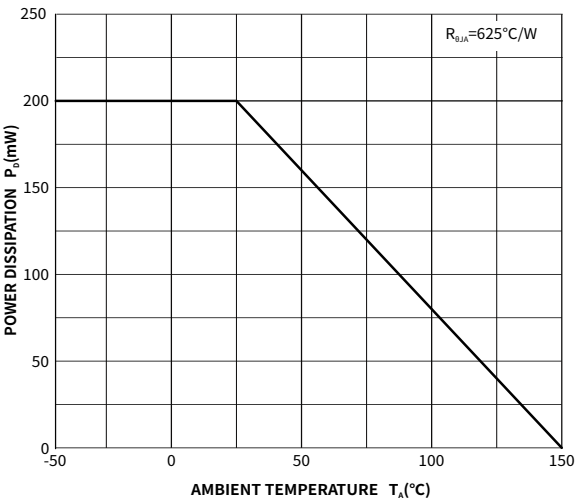
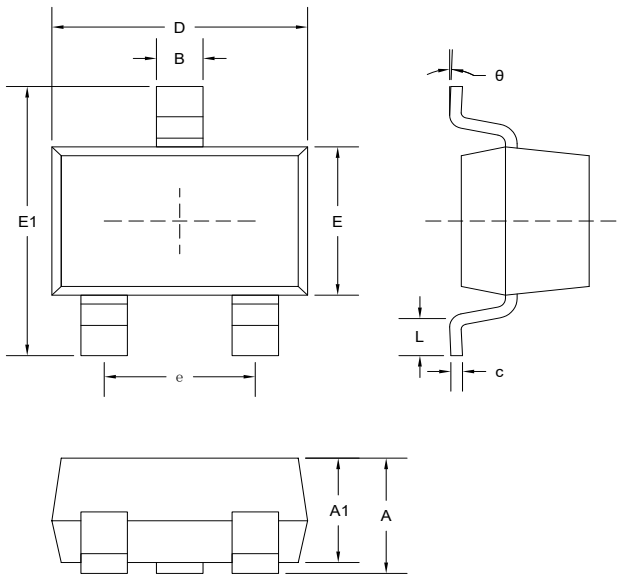


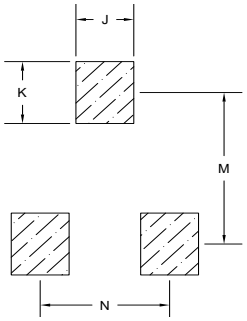
Fig.6 Derating Curve

Package Outline Dimensions (SOT-323)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	0.90	1.00	0.035	0.039
B	0.15	0.40	0.006	0.016
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	2.15	2.45	0.085	0.096
e	1.20	1.40	0.047	0.055
L	0.525REF		0.021 REF	
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