

SOT-23 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

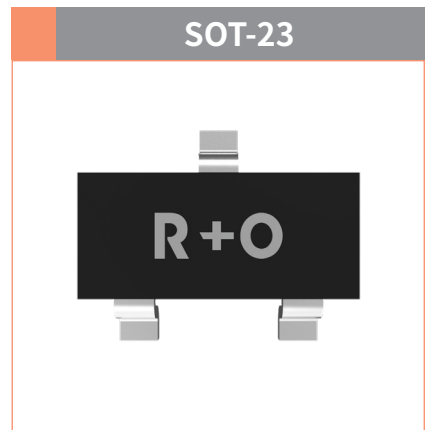
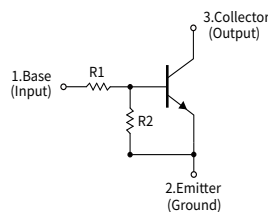
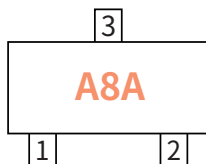
Collector Current

0.10 Ampere

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



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.0085	3000	30000	180000	7"

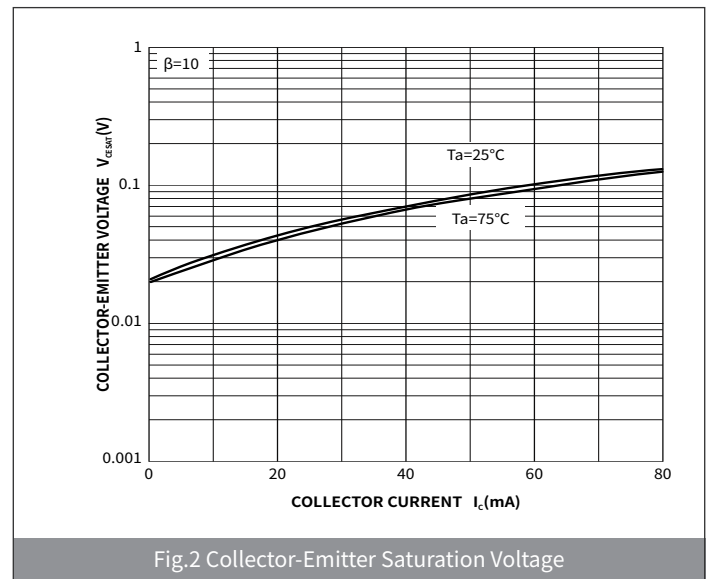
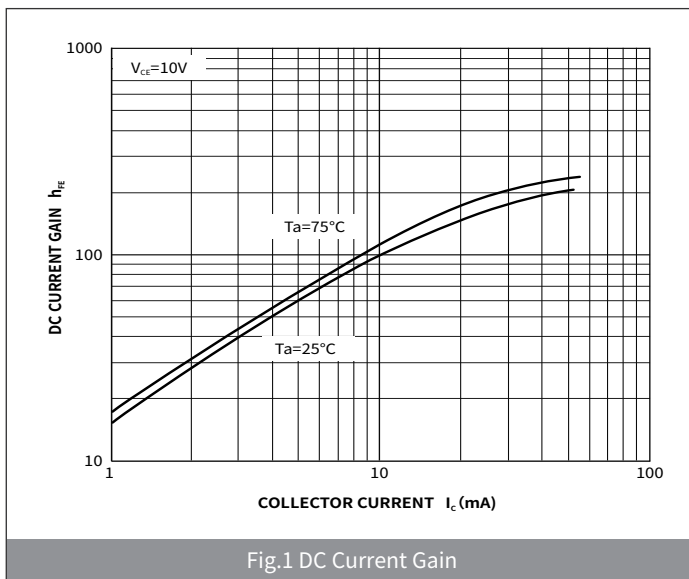
Maximum Ratings (Ta=25°C Unless otherwise specified)

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	508
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150

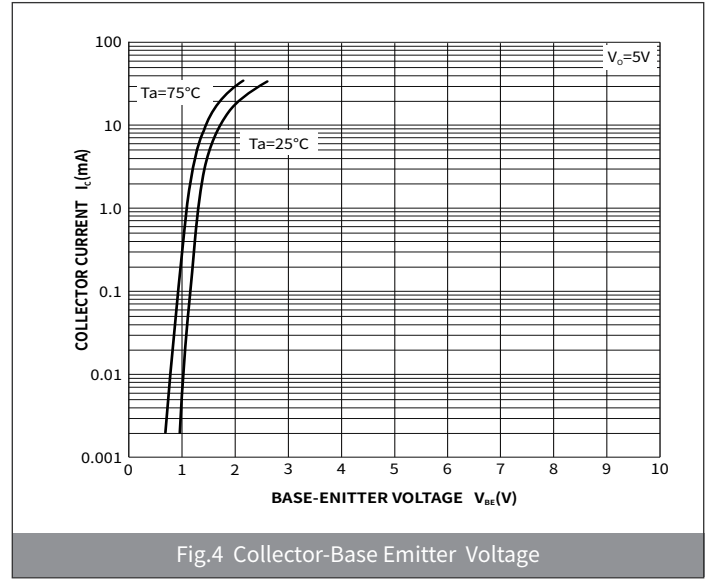
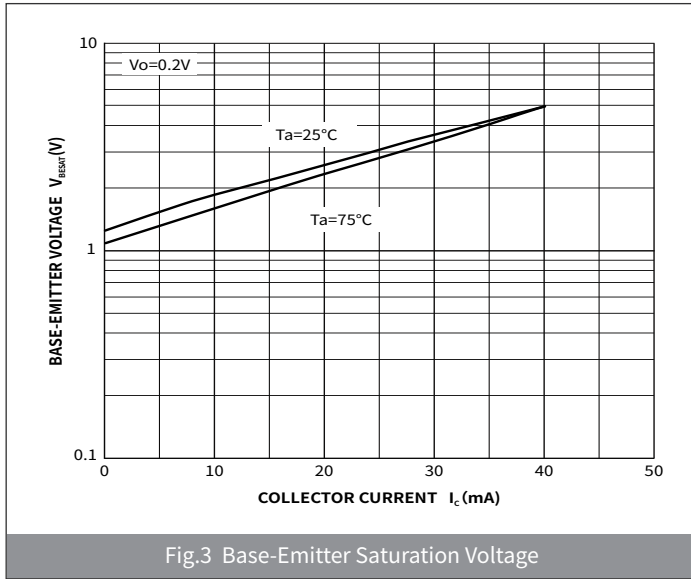
● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=10\mu A, I_E=0$	50	—	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=2mA, I_B=0$	50	—	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=50V, I_E=0$	—	—	50
Collector-Emitter cut-off current	I_{CEO}		$V_{CE}=50V, I_E=0$	—	—	50
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	$I_C=10mA, I_B=1mA$	—	—	0.25
Output Voltage (on)	V_{OL}	V	$V_{CC}=5V, V_B=2.5V, R_L=1K\Omega$	—	—	0.2
Output Voltage (on)	V_{OH}	V	$V_{CC}=5V, V_B=0.25V, R_L=1K\Omega$	4.9	—	—
Input resistance	R_1	k Ω	-	7	10	13
Resistance ratio	R_1/R_2	-	-	0.8	1.0	1.2

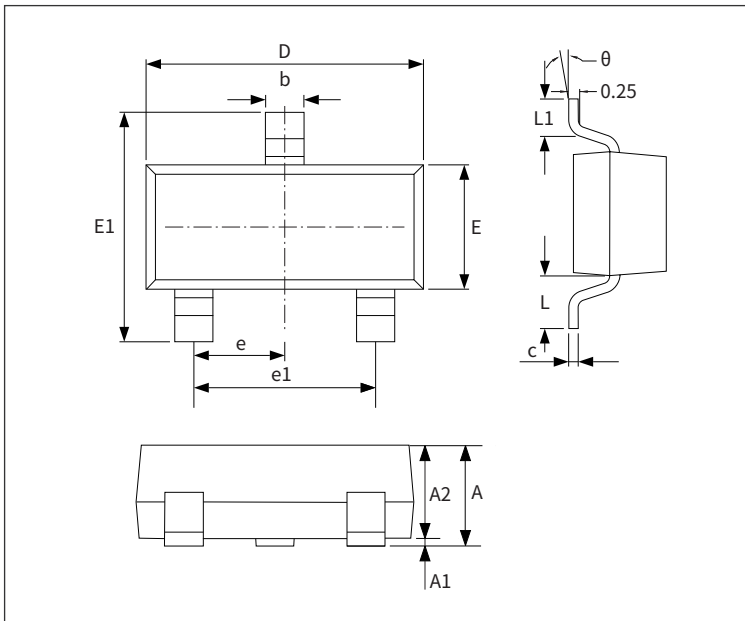
● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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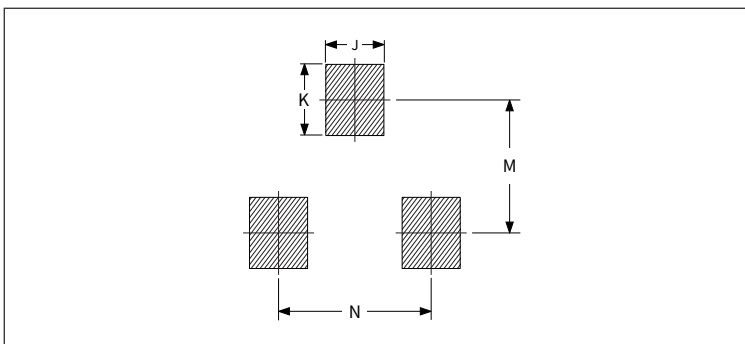


● Package Outline Dimensions (SOT-23)



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	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074