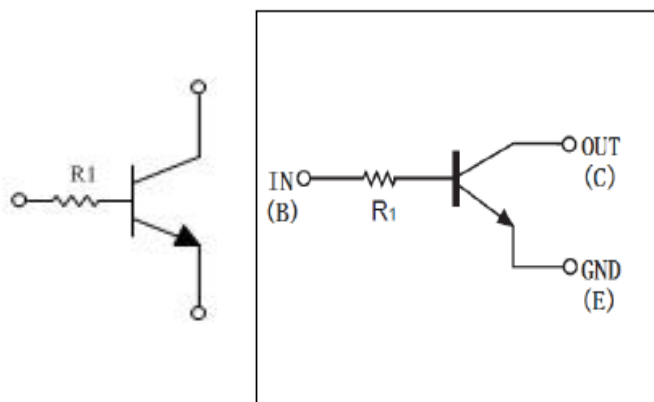


**Features**

- ◇ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistor (see equivalent circuit)
- ◇ The bias resistors consist of thin-film resistors with complete isolation to allow negative 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, marking device design easy.
- ◇ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code.

Equivalent Circuit



**Ordering Information (example)**

Part No.	Package	Packing	Packing code	Packing code (Green)	Marking	Manufacture code
DTC144 TM	SOT-723	8K / 7" Reel	RM	RMG	96	M0

**Maximum Ratings and Electrical Characteristics**

Rating at 25 °C ambient temperature unless otherwise specified.

**Maximum Ratings**

Type Number	Symbol	Value				Units
		TM	TE	TUA / TCA	TSA	
Power Dissipation	$P_D$	100	150	200	300	mW
Collector-Base Voltage	$V_{CBO}$	50				V
Collector-Emitter Voltage	$V_{CEO}$	50				V
Emitter-Base Voltage	$V_{EBO}$	5				V
Collector Current	$I_C$	100				mA
Junction and Storage Temperature Range	$T_J, T_{STG}$	- 55 to + 150				°C

Note 1 : Valid provided that electrodes are kept at ambient temperature

**Electrical Characteristics**

Parameter	Symbol	Min	Typ	Max	Condition	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			$I_C = 50\mu A, I_E = 0$	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50			$I_C = 1mA, I_B = 0$	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			$I_C = 50\mu A, I_C = 0$	V
Collector Cut-Off Current	$I_{CBO}$			0.5	$V_{CB} = 50V, I_E = 0$	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$			0.5	$V_{EB} = 4V, I_C = 0$	$\mu A$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	$I_C = 5mA, I_B = 0.5mA$	V
DC Current Gain	$h_{FE}$	100	300	600	$V_{CE} = 5V, I_C = 1mA$	
Input Resistor	$R_1$	32.9	47	61.1		K $\Omega$
Transition Frequency	$f_T$		250		$V_{CE} = 10V, I_E = 5mA, f = 100MHz$	MHz

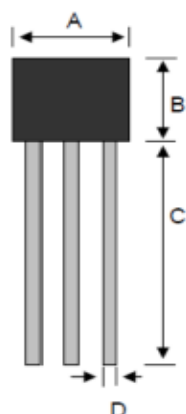
Small Signal Product

### Ordering information (Detail, example)

Part No.	Package	Packing	Packing code	Packing code (Green)	Marking	Manufacture code (Note)
DTC144 TM	SOT-723	8K / 7" Reel	RM	RMG	96	
DTC144 TE	SOT-523	3K / 7" Reel	RN	RNG	96	
DTC144 TUA	SOT-323	3K / 7" Reel	RV	RVG	96	
DTC144 TCA	SOT-23	3K / 7" Reel	RU	RUG	96	
DTC144 TSA	TO-92S	3K / 7" Reel	A3	A3G		
DTC144 TM	SOT-723	8K / 7" Reel	RM	RMG	96	M0
DTC144 TE	SOT-523	3K / 7" Reel	RN	RNG	96	M0
DTC144 TUA	SOT-323	3K / 7" Reel	RV	RVG	96	M0
DTC144 TCA	SOT-23	3K / 7" Reel	RU	RUG	96	M0
DTC144 TSA	TO-92S	3K / 7" Reel	A3	A3G		M0

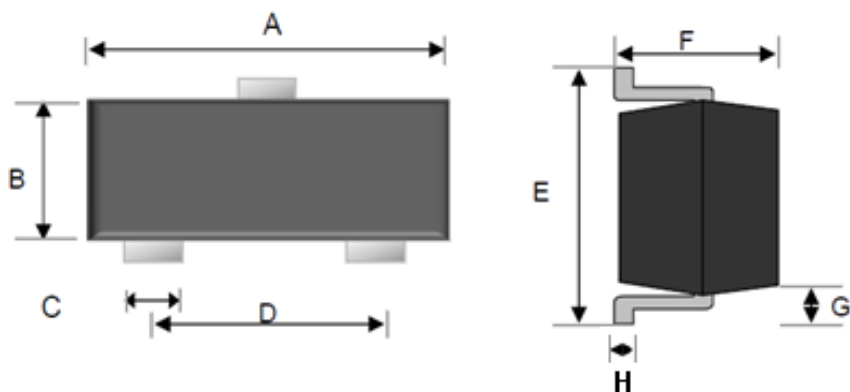
### Dimensions

#### TO-92S



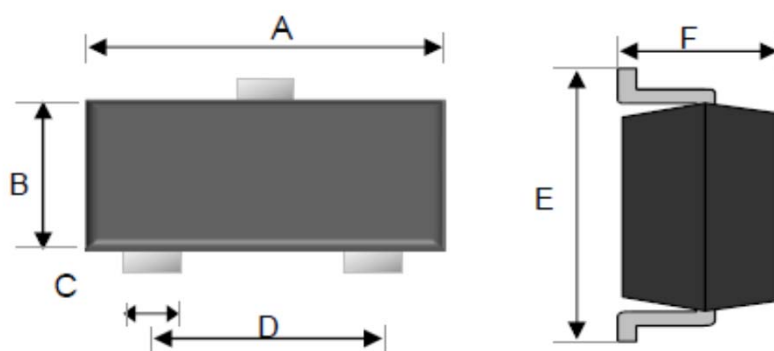
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	3.90	4.10	0.15	0.16
B	3.05	3.25	0.12	0.13
C	15.10	15.50	0.59	0.61
D	0.35	0.48	0.01	0.02
E	1.42	1.62	0.06	0.06
F	0.66	0.86	0.03	0.03
G	0.36	0.51	0.01	0.02

**SOT-23**



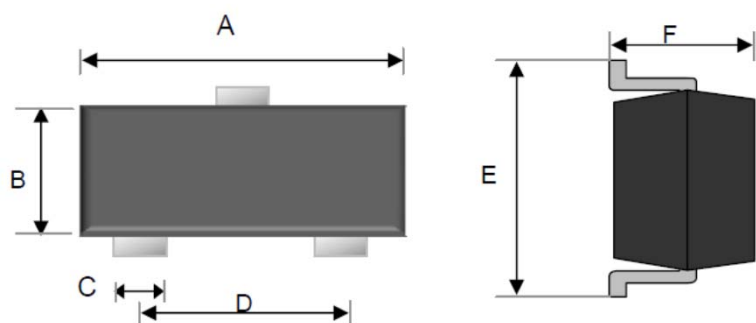
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.550 REF		0.022 REF	
H	0.1 REF		0.004 REF	

**SOT-323**



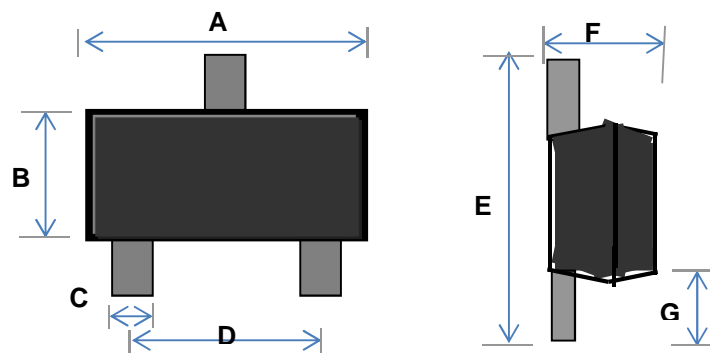
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.80	2.20	0.07	0.09
B	1.15	1.35	0.05	0.05
C	0.15	0.40	0.01	0.02
D	1.20	1.40	0.05	0.06
E	2.00	2.45	0.08	0.10
F	0.80	1.10	0.03	0.04

**SOT-523**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.06	0.07
B	0.70	0.90	0.03	0.04
C	0.15	0.35	0.01	0.01
D	0.90	1.10	0.04	0.04
E	1.45	1.75	0.06	0.07
F	0.62	0.95	0.02	0.04

**SOT-723**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.15	1.25	0.045	0.049
B	0.75	0.85	0.030	0.033
C	0.17	0.27	0.007	0.011
D	0.80 TYP.		0.031 TYP.	
E	1.15	1.25	0.045	0.049
F	0.43	0.55	0.017	0.022
G	0.15	0.25	0.006	0.010