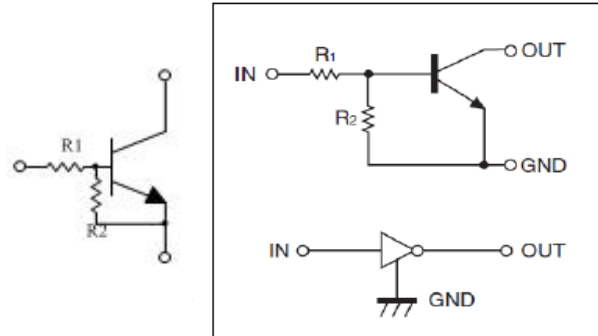


Features

- ◇ 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)	Manufacture code
DTC114 EM	SOT-723	8K / 7" Reel	RM	RMG	M0

Note : Detail please see "Ordering Information(detail, example)" below.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Parameter	Symbol	Value				Units
		EM	EE	EUA / ECA	ESA	
Power Dissipation	P_D	100	150	200	300	mW
Supply Voltage	V_{CC}	50				V
Input Voltage	V_{IN}	-10 ~ +40				V
Output Current	I_O	50				mA
	$I_{C(MAX)}$	100				
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150				°C

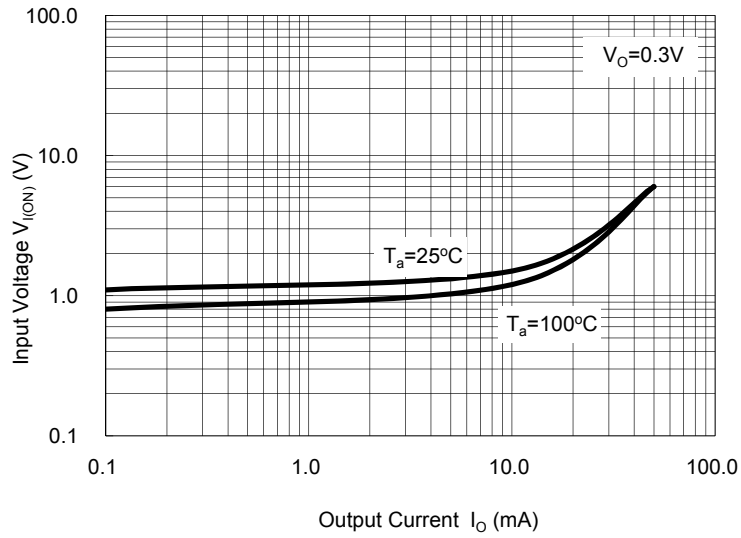
Notes: 1. Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

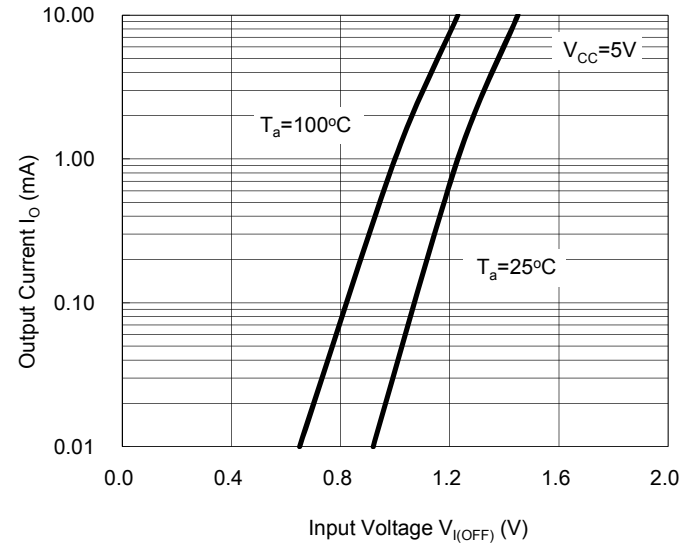
Parameter	Symbol	Min	Typ	Max	Condition	Unit
Input Voltage	$V_{I(on)}$			3	$V_{CC}=5V, I_O=100\mu A$	V
	$V_{I(off)}$	0.5			$V_O=0.3V, I_O=10mA$	
Output Voltage	$V_{O(on)}$			0.3	$I_O/I_I=10mA/5mA$	V
Input Current	I_I			0.88	$V_I=5V$	mA
Output Current	$I_{O(off)}$			0.5	$V_{CC}=50V, V_I=0$	μA
DC Current Gain	G_I	30			$V_O=5V, I_O=5mA$	
Input Resistance	R_1	7	10	13		K Ω
Resistance Ratio	R_2/R_1	0.8	1	1.2		
Transition Frequency	f_T		250		$V_O=10V, I_O=5mA, f=100MHz$	MHz

Typical Characteristics (DTC114EUA)

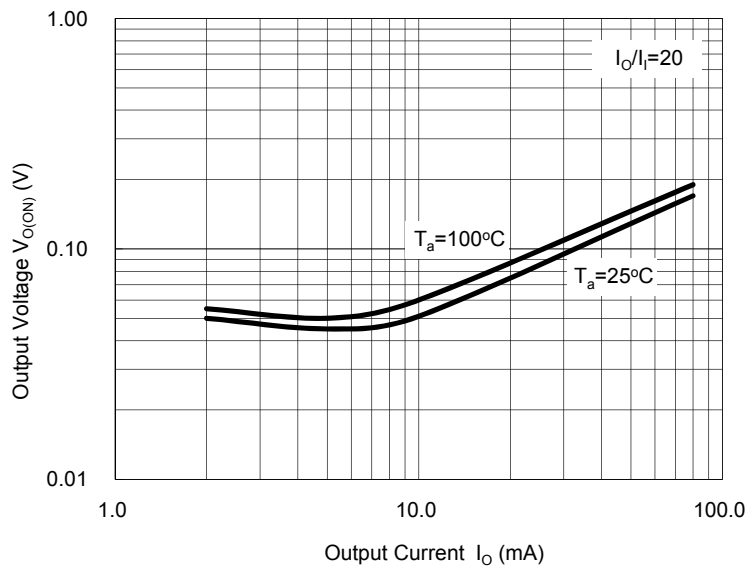
On Characteristics



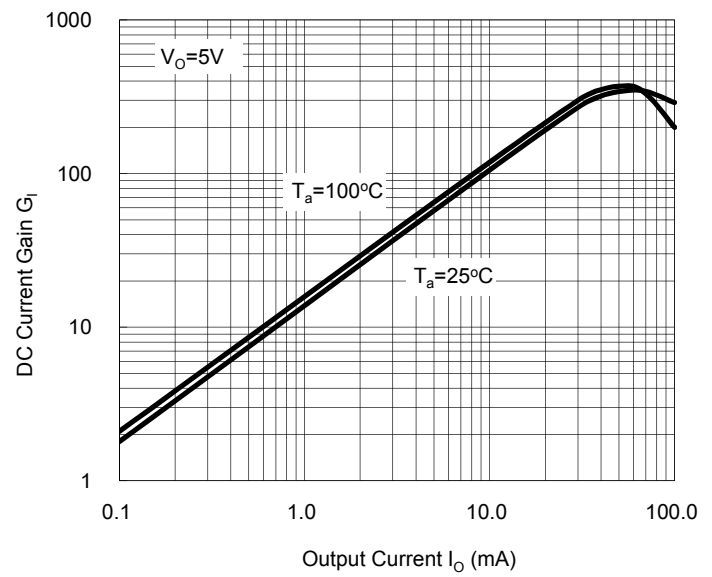
Off Characteristics



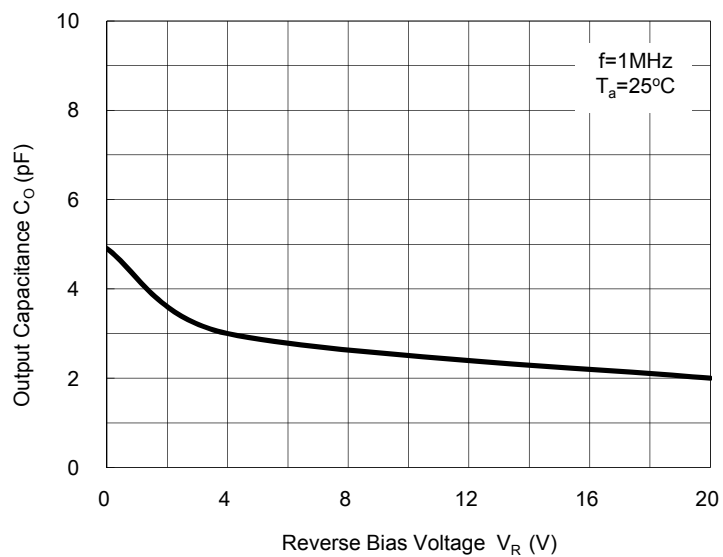
$V_{O(ON)} - I_O$



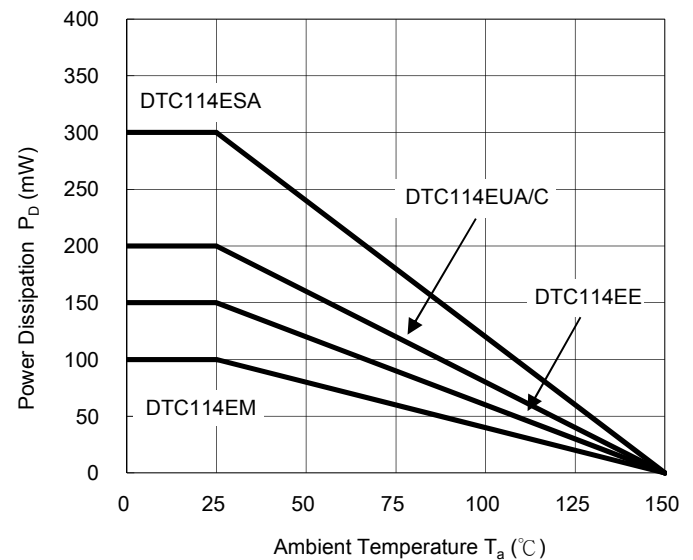
$G_I - I_O$



$C_O - V_R$



$P_D - T_a$

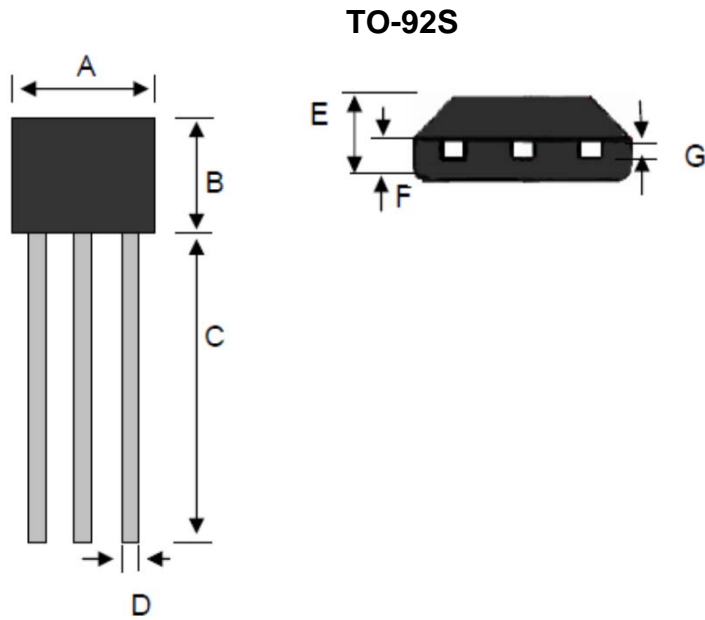


Ordering information (Detail, example)

Part No.	Package	Packing	Packing code	Packing code (Green)	Manufacture code (Note)
DTC114 EM	SOT-723	8K / 7" Reel	RM	RMG	
DTC114 EE	SOT-523	3K / 7" Reel	RN	RNG	
DTC114 EUA	SOT-323	3K / 7" Reel	RV	RVG	
DTC114 ECA	SOT-23	3K / 7" Reel	RU	RUG	
DTC114 ESA	TO-92S	3K / Box(Ammo)	A3	A3G	
DTC114 EM	SOT-723	8K / 7" Reel	RM	RMG	M0
DTC114 EE	SOT-523	3K / 7" Reel	RN	RNG	M0
DTC114 EUA	SOT-323	3K / 7" Reel	RV	RVG	M0
DTC114 ECA	SOT-23	3K / 7" Reel	RU	RUG	M0
DTC114 ESA	TO-92S	3K / Box(Ammo)	A3	A3G	M0

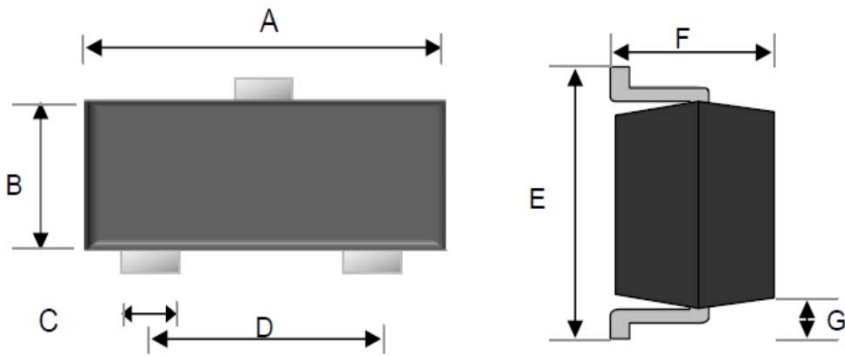
Note : Manufacture special control, if empty means no special control requirement.

Dimensions



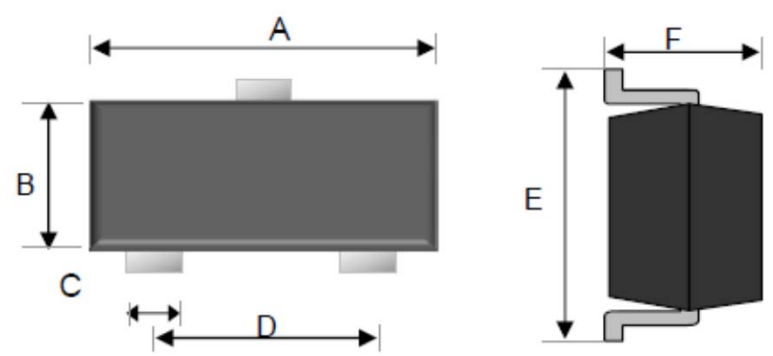
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	3.85	4.15	0.15	0.16
B	3.01	3.31	0.12	0.13
C	15.10	15.50	0.59	0.61
D	0.38	0.55	0.01	0.02
E	1.42	1.62	0.06	0.06
F	0.66	0.86	0.03	0.03
G	0.36	0.51	0.01	0.02

SOT-23



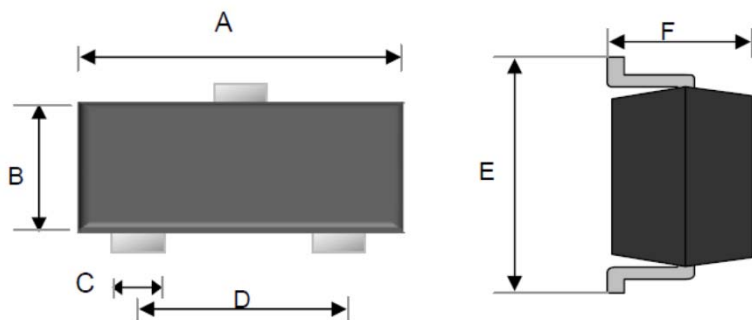
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.80	3.00	0.11	0.12
B	1.20	1.40	0.05	0.06
C	0.30	0.50	0.01	0.02
D	1.80	2.00	0.07	0.08
E	2.25	2.55	0.09	0.10
F	0.90	1.20	0.04	0.04
G	0.550 REF		0.022 REF	

SOT-323



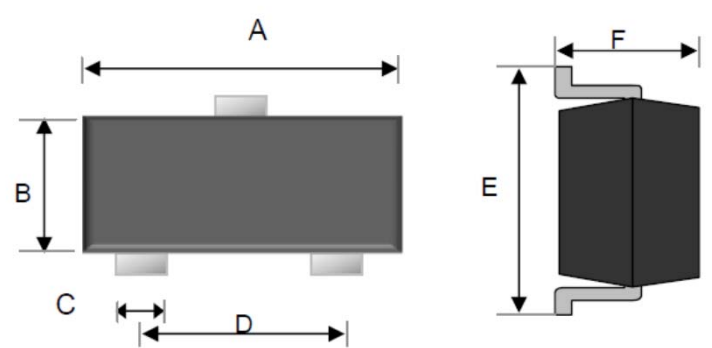
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.90	2.10	0.07	0.08
B	1.15	1.35	0.05	0.05
C	0.25	0.35	0.01	0.01
D	1.20	1.40	0.05	0.06
E	2.00	2.20	0.08	0.09
F	0.80	1.00	0.03	0.04

SOT-523



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.06	0.07
B	0.70	0.80	0.03	0.03
C	0.25	0.35	0.01	0.01
D	0.90	1.10	0.04	0.04
E	1.50	1.70	0.06	0.07
F	0.70	0.90	0.03	0.04

SOT-723



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.15	1.25	0.05	0.05
B	0.75	0.85	0.03	0.03
C	0.17	0.27	0.01	0.01
D	0.8 TYP		0.31 TYP	
E	1.15	1.25	0.05	0.05
F		0.50		0.02