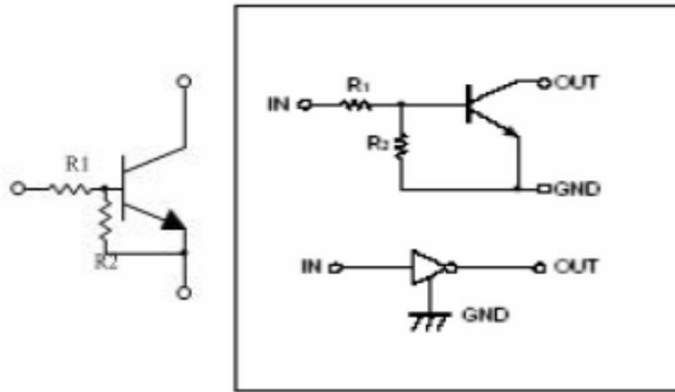


Small Signal Product

NPN Small Signal Transistor

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.
- Packing code with suffix "G" means green compound (halogen-free)



Equivalent Circuit

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)					
PARAMETER	SYMBOL	VALUE			UNIT
		YE	YUA / YCA	YSA	
Power Dissipation	P _D	150	200	300	mW
Supply Voltage	V _{CC}	50			V
Input Voltage	V _{IN}	-6 ~ +40			V
Output Current	I _O	70			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

PARAMETER	SYMBOL	MIN	TYP	MAX	CONDITION	UNIT
Input Voltage	V _{I(on)}	-	-	1.4	V _O =0.3V, I _O =1mA	V
	V _{I(off)}	0.3	-	-	V _{CC} =5V, I _O =100μA	
Output Voltage	V _{O(on)}	-	-	0.3	I _O /I _I =5mA/0.25mA	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	68	-	-	V _O =5V, I _O =5mA	
Input Resistance	R ₁	7	10	13	-	KΩ
Resistance Ratio	R ₂ /R ₁	3.7	4.7	5.7	-	
Transition Frequency	f _T	-	250	-	V _O =10V, I _O =5mA, f=100MHz	MHz

Small Signal Product

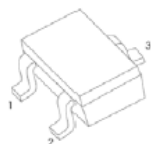
ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX (Note 1)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
DTC114YE	-xx	RS	G	SOT-523	3K / 7" Reel
DTC114YUA		RV		SOT-323	3K / 7" Reel
DTC114YCA		RU		SOT-23	3K / 7" Reel
DTC114YSA		A3		TO-92S	3K / Box (Ammo)
		B3			10K / Box (Bulk)

Note 1: Part No. Suffix „-xx “ would be used for special requirement

EXAMPLE					
PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
DTC114YE RS	DTC114YE		RS		Multiple manufacture source
DTC114YE RSG	DTC114YE		RS	G	Multiple manufacture source Green compound
DTC114YE-M0 RSG	DTC114YE	M0	RS	G	Defined manufacture source Green compound

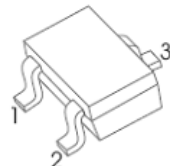
PIN CONNENCTIONS AND MARKING

DTC114YE

 MARKING:
64

SOT-523

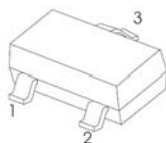
 1. IN
2. GND
3. OUT

DTC114YUA

 MARKING:
64

SOT-323

 1. IN
2. GND
3. OUT

DTC114YCA

 MARKING:
64

SOT-23

 1. IN
2. GND
3. OUT

DTC114YSA

 MARKING:
C114
Y031
MARKING(HF):
C114
Y-031

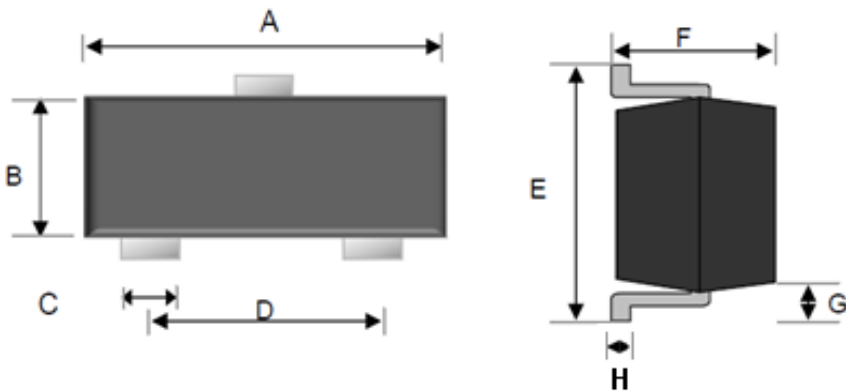
TO-92S

 1. GND
2. OUT
3. IN

Small Signal Product

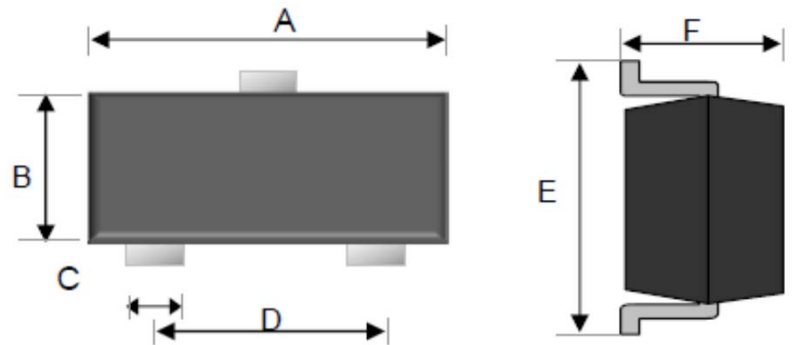
PACKAGE OUTLINE DIMENSION

SOT-23



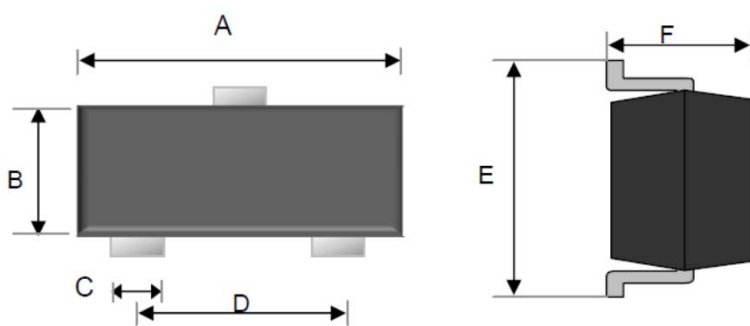
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SOT-323



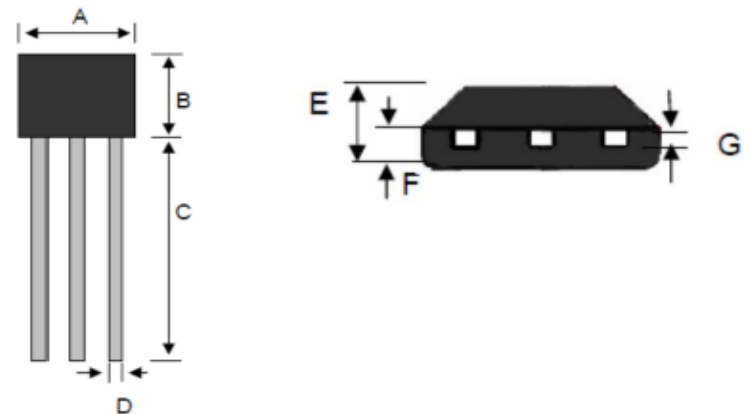
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.80	2.20	0.071	0.087
B	1.15	1.35	0.045	0.053
C	0.15	0.40	0.006	0.016
D	1.20	1.40	0.047	0.055
E	2.00	2.45	0.079	0.096
F	0.80	1.10	0.031	0.043

SOT-523



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.067
B	0.70	0.90	0.028	0.035
C	0.15	0.35	0.006	0.014
D	0.90	1.10	0.035	0.043
E	1.45	1.75	0.057	0.069
F	0.62	0.95	0.024	0.037

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

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