

**Small Signal Product**

**PNP Small Signal Transistor**

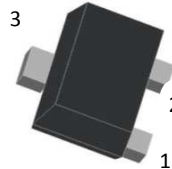
**FEATURES**

- 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
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code



**SOT523/SOT323/SOT23**

1. IN 2.GUD 3.OUT



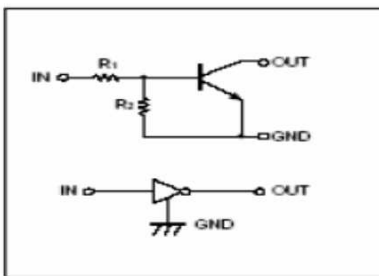
**SOT-723**

1. BASE  
2. EMITTER  
3. COLLECTOR



**TO92S**

1.GUD 2.OUT 3.IN



Equivalent Circuit

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)						
PARAMETER	SYMBOL	VALUE				UNIT
		ZM	ZE	ZUA / ZCA	ZSA	
Power Dissipation	PD	100	150	200	300	mW
Supply Voltage	V <sub>CC</sub>	-50				V
Input Voltage	V <sub>IN</sub>	-5 ~ +30				V
Output Current	I <sub>O</sub>	100				mA
	I <sub>C(MAX)</sub>	100				
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150				°C

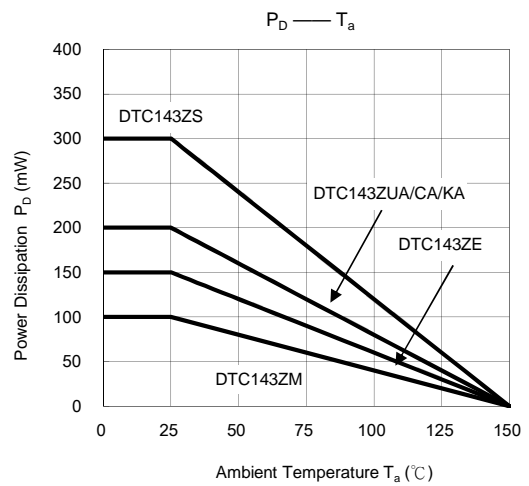
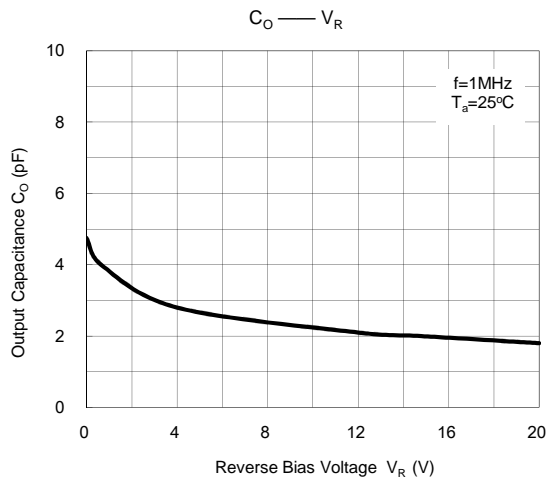
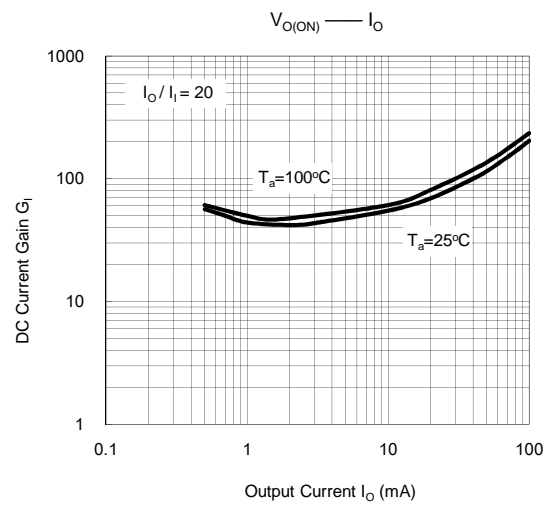
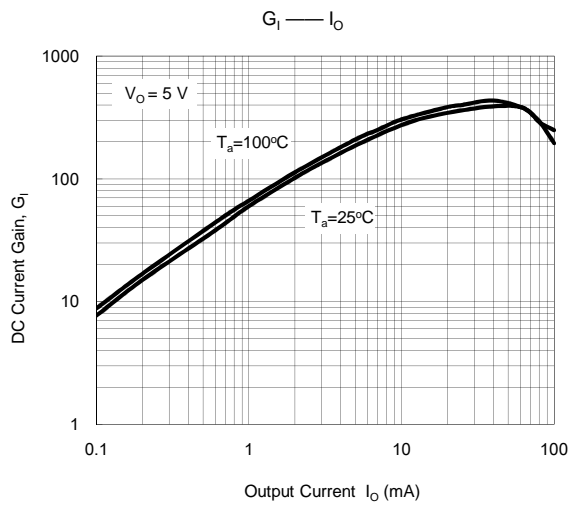
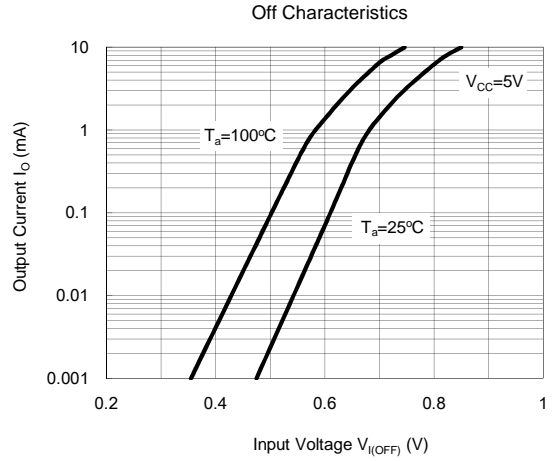
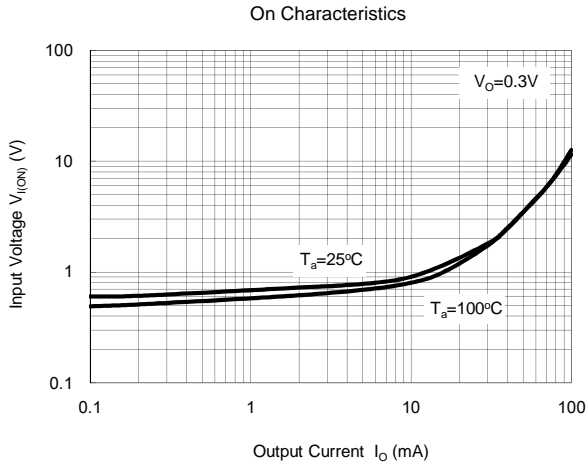
Notes: Valid provided that electrodes are kept at ambient temperature

PARAMETER	SYMBOL	MIN	TYP	MAX	CONDITION	UNIT
Input Voltage	V <sub>I(on)</sub>			1.3	V <sub>O</sub> = 0.3 V , I <sub>O</sub> = 5 mA	V
	V <sub>I(off)</sub>	0.5			V <sub>CC</sub> = 5 V , I <sub>O</sub> = 100 μA	
Output Voltage	V <sub>O(on)</sub>		0.1	0.3	I <sub>O</sub> / I <sub>I</sub> = 5 mA / 0.25 mA	V
Input Current	I <sub>I</sub>			1.8	V <sub>I</sub> = 5 V	mA
Output Current	I <sub>O (off)</sub>			0.5	V <sub>CC</sub> = 50 V , V <sub>I</sub> = 0	μA
DC Current Gain	G <sub>I</sub>	80			V <sub>O</sub> = 5 V , I <sub>O</sub> = -10 mA	
Input Resistance	R <sub>1</sub>	3.29	4.7	6.11		KΩ
Resistance Ratio	R <sub>2</sub> /R <sub>1</sub>	8	10	12		
Transition Frequency	f <sub>T</sub>		250		V <sub>CE</sub> =10V, I <sub>E</sub> =-5 mA, f=100 MHz	MHz

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**RATINGS AND CHARACTERISTICS CURVES**

( $T_a=25^\circ\text{C}$  unless otherwise noted)



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<b>ORDERING INFORMATION</b>						
<b>PART NO.</b>	<b>MANUFACTURE CODE (Note1)</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>	<b>MARKING</b>
DTC143 ZM		RM	G	SOT-723	8K / 7" Reel	E23
DTC143 ZE		RN	G	SOT-523	3K / 7" Reel	E23
DTC143 ZUA		RV	G	SOT-323	3K / 7" Reel	E23
DTC143 ZCA		RU	G	SOT-23	3K / 7" Reel	E23
DTC143 ZSA		A3	G	TO-92S	3K / Box ( Ammo )	C143 Z031

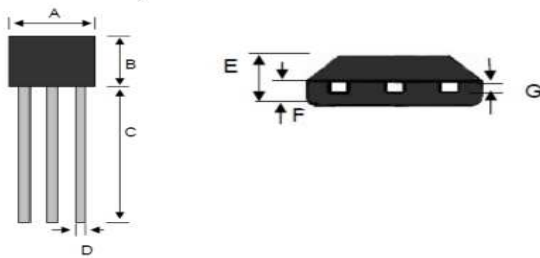
Note1: Manufacture special control, if empty means no special control requirement.

<b>EXAMPLE</b>					
<b>PREFERRED P/N</b>	<b>PART NO.</b>	<b>MANUFACTURE CODE</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>DESCRIPTION</b>
DTC143 ZM RMG	DTC143 ZM		RM	G	Green compound
DTC143 ZM-M0 RMG	DTC143 ZM	M0	RM	G	Green compound

**Small Signal Product**

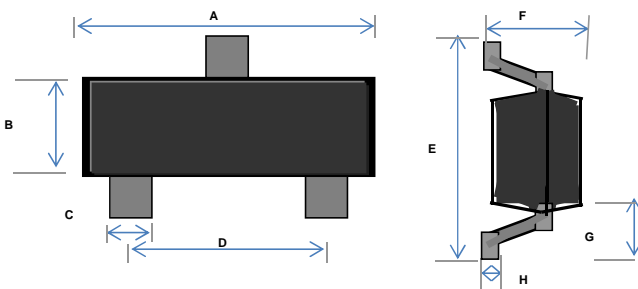
**DIMENSIONS**

**TO-92S**



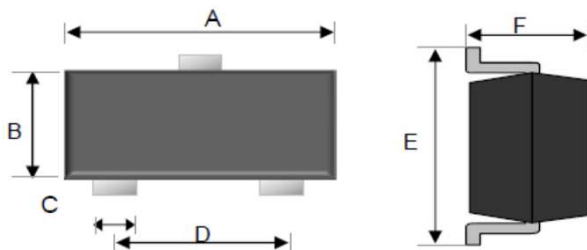
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.90	4.10	0.15	0.16
B	3.05	3.25	0.12	0.13
C	15.10	15.50	0.59	0.61
D	0.35	0.48	0.01	0.02
E	1.42	1.62	0.06	0.06
F	0.66	0.86	0.03	0.03
G	0.36	0.51	0.01	0.02

**SOT-23**



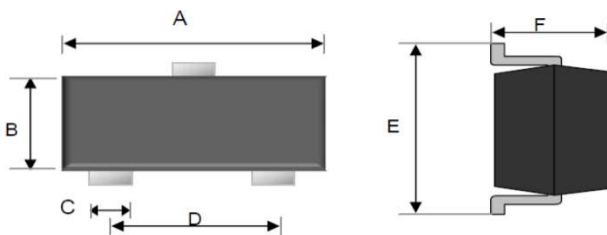
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.1 REF		0.004 REF	

**SOT-323**



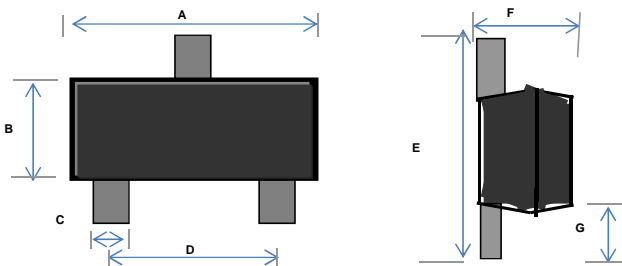
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.80	2.20	0.07	0.09
B	1.15	1.35	0.05	0.05
C	0.15	0.40	0.01	0.02
D	1.20	1.40	0.05	0.06
E	2.00	2.45	0.08	0.10
F	0.80	1.10	0.03	0.04

**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	0.05	0.05
B	0.75	0.85	0.03	0.03
C	0.15	0.27	0.01	0.01
D	0.8 TYP.		0.031 TYP.	
E	1.15	1.25	0.05	0.05
F	0.43	0.55	0.02	0.02
G	0.15	0.25	0.01	0.01
H	0.25	0.37	0.01	0.01

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