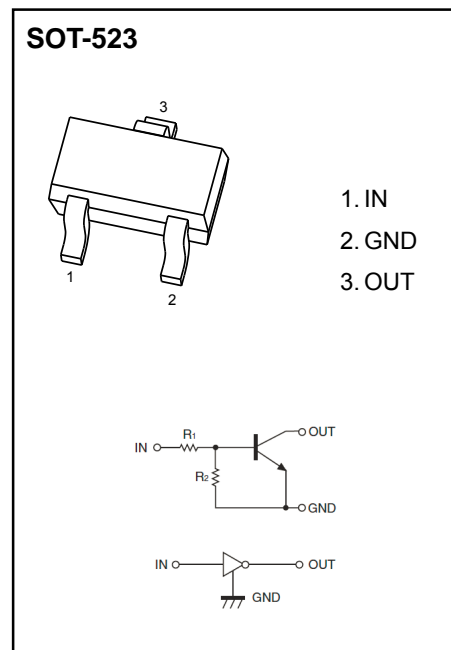


SOT- 523 Plastic-Encapsulate Transistors

DIGITAL TRANSISTOR(NPN)

- Built-in bias resistors enable the configuration of an inverter circuit without connection external input resistors (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, making device design easy.

MARKING: E42



Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

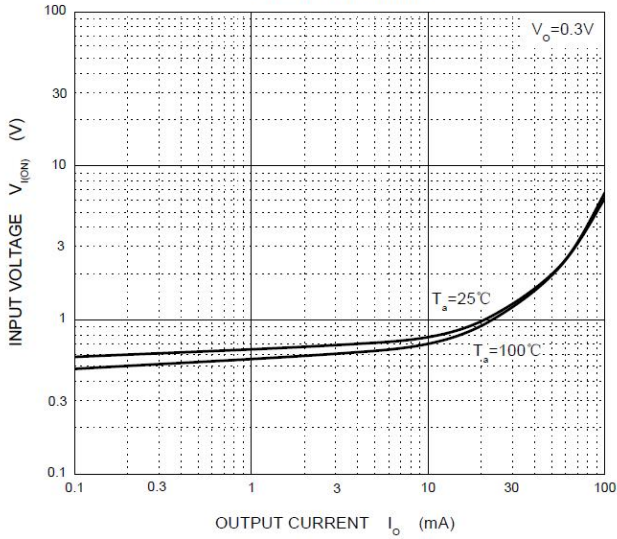
Parameters	Symbols	Limits	Units
Supply Voltage	VCC	50	V
Input Voltage	VIN	-6~+40	V
Output Current	IO	70	mA
Peak Collector Current	ICM	100	mA
Power Dissipation	PC	150	mW
Junction Temperature	Tj	-55~+150	°C
Storage Temperature	Tstg	-55~+150	°C

Electrical Characteristics(Ta=25°C unless otherwise noted)

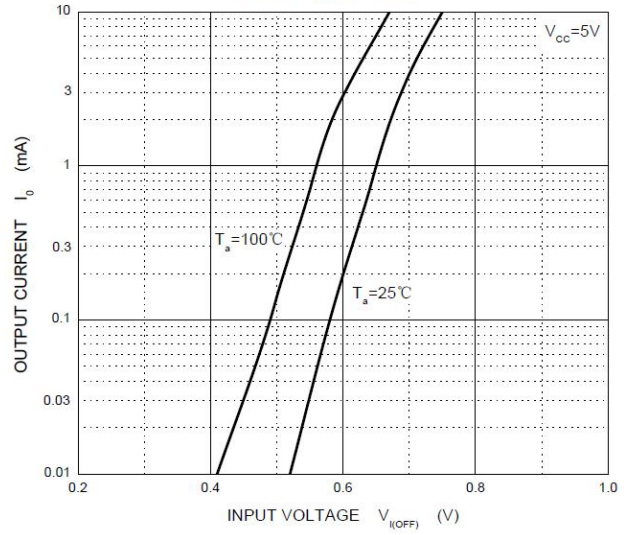
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input on voltage	VI(ON)	VO=0.3V, IO=5mA			1.1	V
Input off voltage	VI(OFF)	VCC=5V, IO=0.1mA	0.5			V
Output voltage	VO(on)	IO/II=5mA/0.25mA		0.1	0.3	V
Input current	II	VI=5V			3.6	mA
Output current	IO(off)	VCC=50V, VI=0			0.5	uA
DC current gain	GI	VO=5V, IO= 10mA	80			
Input resistor	R1	-	1.54	2.2	2.86	kΩ
Resistor ratio	R2/R1	-	17	21	26	
Transition frequency	fT	VO= 10V, IO=5mA, f=100MHz		250		MHz

Typical Characteristics

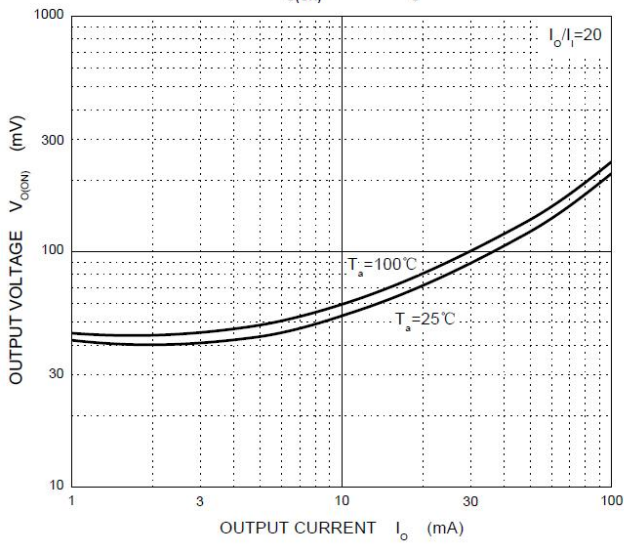
ON Characteristics



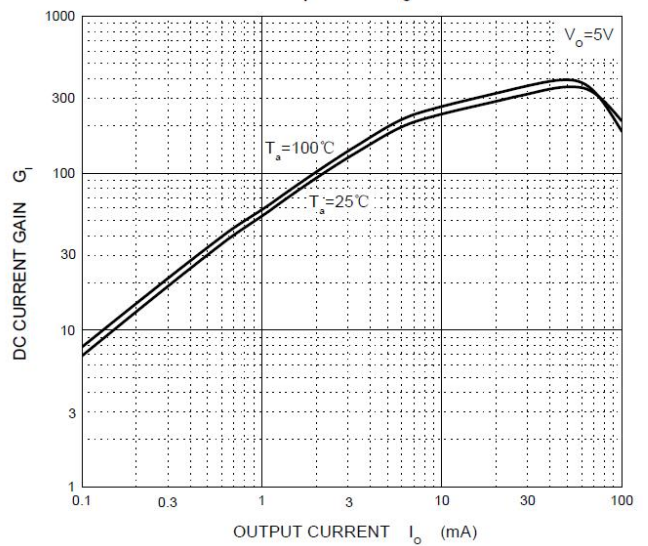
OFF Characteristics



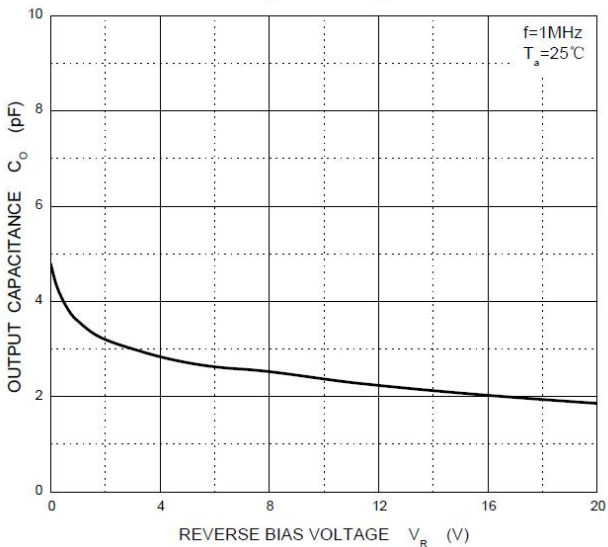
$V_{O(ON)} - I_O$



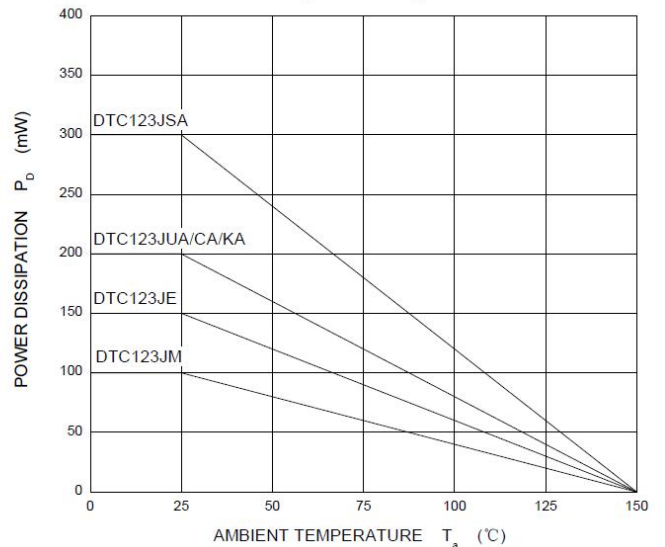
$G_I - I_O$



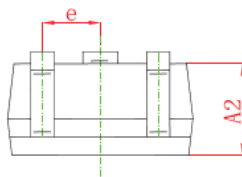
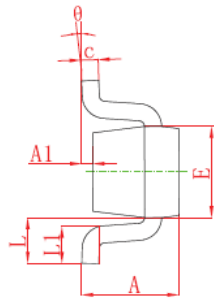
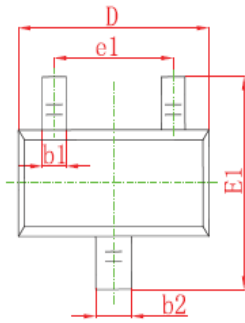
$C_O - V_R$



$P_D - T_a$

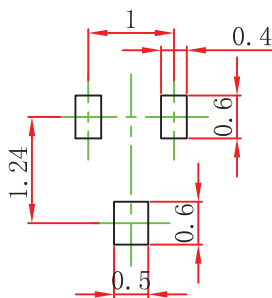


SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°

SOT-523 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

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