WILLAS

RoHS COMPLIANT

NPN Digital Transistor

DTC124ECA

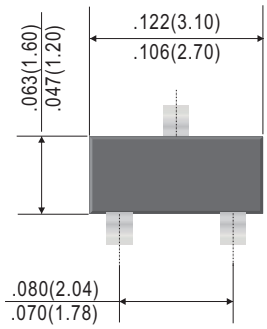
Features

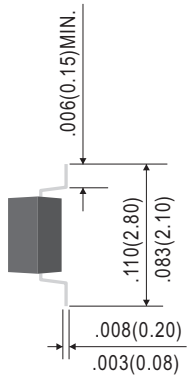
- **Pb-Free package is available**

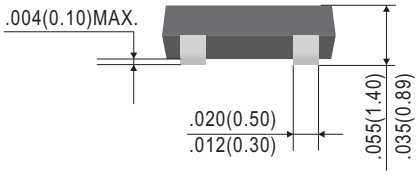
  RoHS product for packing code suffix ”G”

  Halogen free product for packing code suffix “H”
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- 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

SOT-23







Dimensions in inches and (millimeters)

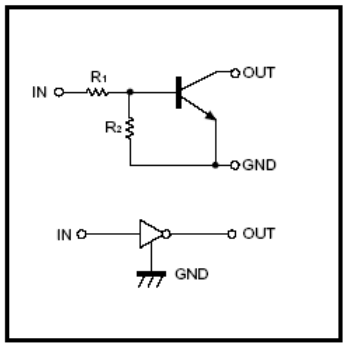
Absolute maximum ratings @ 25℃

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply voltage	---	50	---	V
V_{IN}	Input voltage	-10	---	40	V
I_O $I_{C(MAX)}$	Output current	---	30 100	---	mA
P_d	Power dissipation	---	200	---	mW
T_j	Junction temperature	---	150	---	℃
T_{stg}	Storage temperature	-55	---	150	℃

Electrical Characteristics @ 25℃

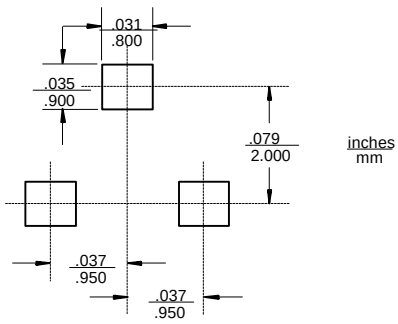
Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage (V_{CC}=5V, I_O=100 μ A)	0.5	---	---	V
$V_{I(on)}$	(V_O=0.2V, I_O=5mA)	---	---	3.0	V
$V_{O(on)}$	Output voltage (I_O/I_I=10mA/0.5mA)	---	0.1	0.3	V
I_I	Input current (V_I=5V)	---	---	0.36	mA
$I_{O(off)}$	Output current (V_{CC}=50V, V_I=0)	---	---	0.5	μ A
G_I	DC current gain (V_O=5V, I_O=5mA)	56	---	---	
R_1	Input resistance	15.4	22	28.6	KΩ
R_2/R_1	Resistance ratio	0.8	1.0	1.2	
f_T	Transition frequency (V_O=10V, I_O=5mA, f=100MHz)	---	250	---	MHz

●Equivalent circuit



*Marking: 25

Suggested Solder Pad Layout



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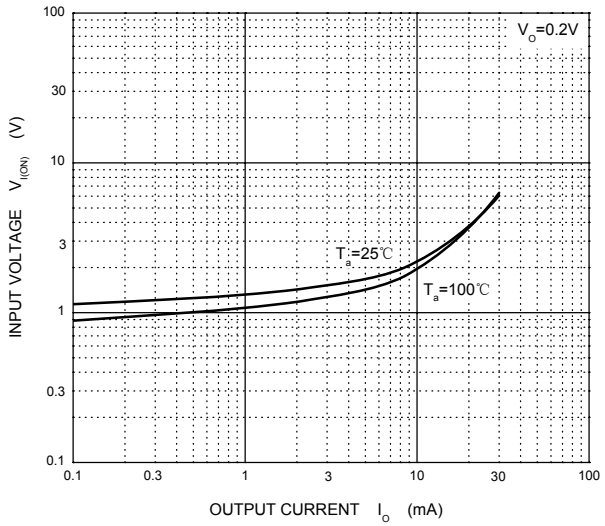
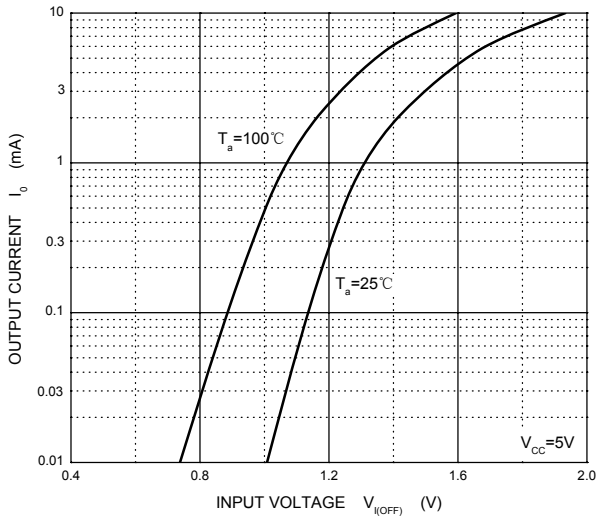
Typical Characteristics

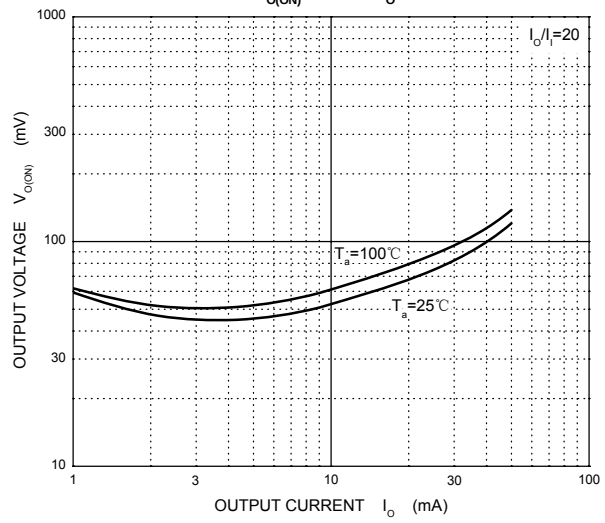
ON Characteristics



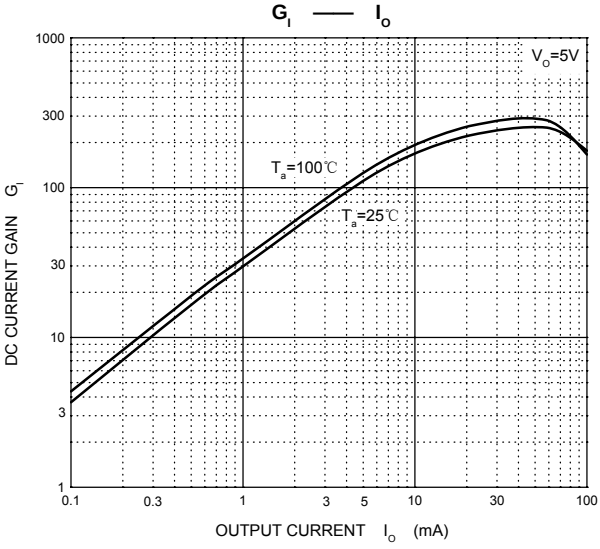
OFF Characteristics



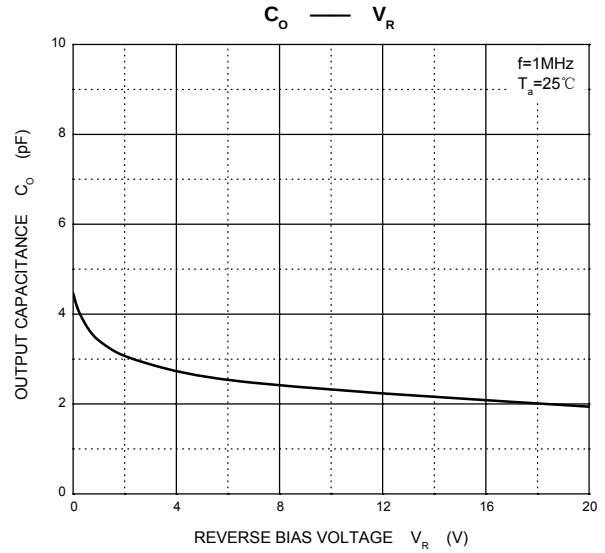
$V_{O(ON)}$ —— I_O



G_I —— I_O



C_O —— V_R



P_D —— T_a