



DESCRIPTION

The DTC143ZT is available in SOT-23 package.

Mechanical Data

- Case: SOT-23
- Molding compound: UL 94V-0 flammability classification rating
- Terminals: Matte tin-plated leads; solderability per MIL-STD-202, Method 208

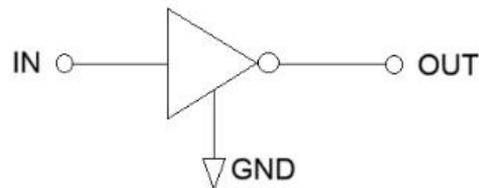
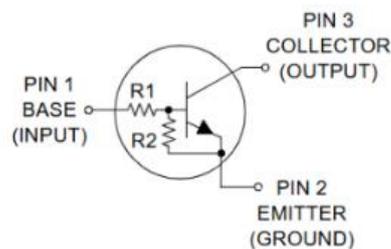
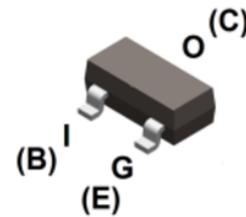
FEATURE

- Epitaxial planar die construction
- Built-in biasing resistors
(R1 = 4.7 kΩ, R2 = 47 kΩ)

PIN DESCRIPTION

ORDERING INFORMATION

Package Type	Part Number
SOT-23	DTC143ZT
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	



R1=4.7kΩ R2=47kΩ

PIN#	DESCRIPTION
1	BASE (IN)
2	EMITTER (GND)
3	COLLECTOR (OUT)

**ABSOLUTE MAXIMUM RATINGS**T_A = 25°C, unless otherwise noted.

V _{CC} , Supply Voltage	50V
V _I , Input Voltage	-5V ~ +30V
I _O , Output Current	100mA
I _{C(Max)} , Collector Current	100mA
P _D , Power Dissipation	200mW
T _J , Junction Temperature Range	-55°C~+150°C
T _{STG} , Storage Temperature Range	-55°C~+150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICST_A = 25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Input Voltage	V _{IN(OFF)}	V _{CC} = 5V, I _{OUT} = 100μA	0.5	-	-	V
	V _{IN(ON)}	V _{OUT} = 0.3V, I _{OUT} = 5mA	-	-	1.3	
Output Voltage	V _{OUT(ON)}	I _{OUT} = 5mA, I _{IN} = 0.25mA	-	-	0.3	V
Input Current	I _{IN}	V _{IN} = 5V	-	-	1.8	mA
Collector Cut-Off Current	I _{OUT(off)}	V _{CC} = 50V, V _{IN} = 0	-	-	0.5	μA
DC Current Gain	G _I	V _{OUT} = 5V, I _{OUT} = 10mA	80	-	-	-
Transition Frequency	f _T	V _{CE} = 10V, I _E = 5mA, f = 100MHz	-	250	-	MHz
Input Resistor	R ₁	-	3.29	4.70	6.22	KΩ
Resistance Ratio	R ₂ /R ₁	-	8	10	12	-



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Input Voltage vs. Output Current

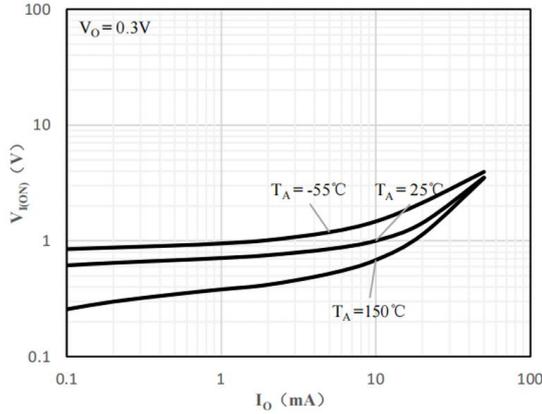


Fig 2. Output Current vs. Input Voltage

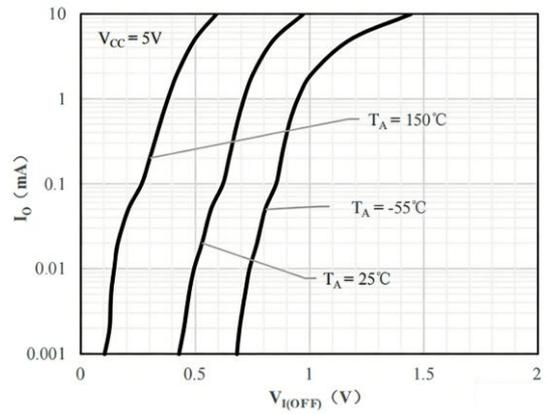


Fig 3. DC Current vs. Output Current

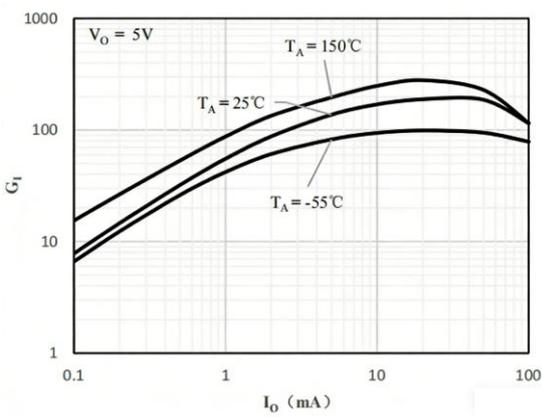


Fig 4. Output Voltage vs. Output Current

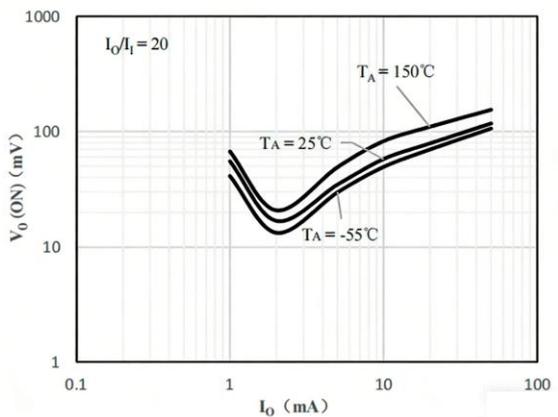
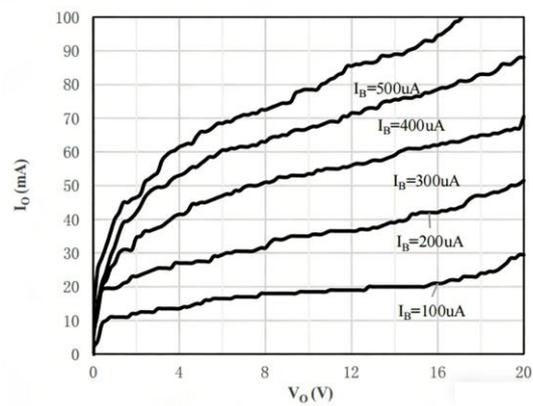


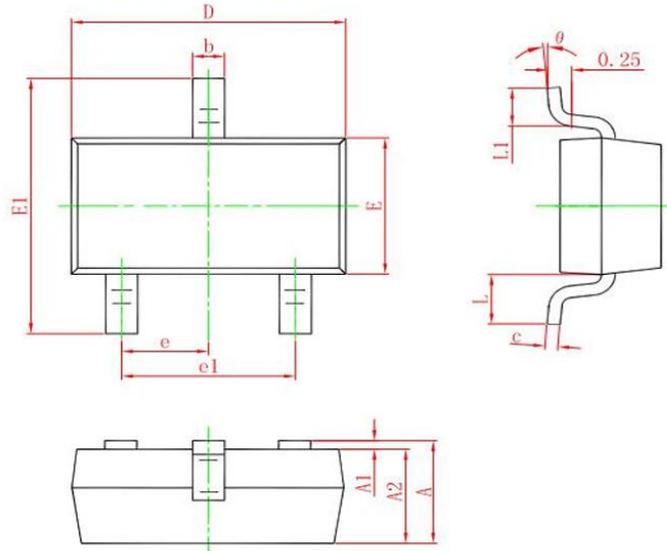
Fig 5. Output Current vs. Output Voltage





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



Symbol	Millimeters (mm)	
	Min.	Max.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP.	
e1	1.800	2.000
L	0.550 REF.	
L1	0.300	0.500
θ	0°	8°



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