

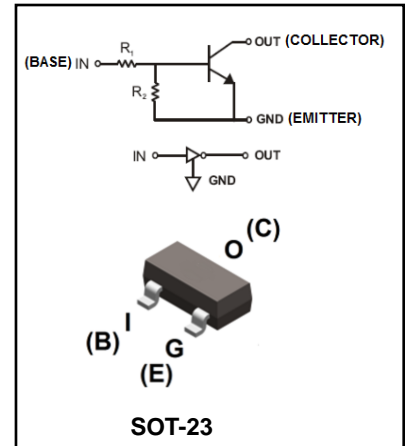


Features

- Epitaxial planar die construction
- Collector Current: 500mA
- Built-in biasing resistors (R_1 : 2.2k Ω , R_2 : 10k Ω)

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
DTD123YCA	SOT-23	3000 pcs / Tape & Reel	F62

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_I	-5 to +12	V
Collector Current	I_C	500	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	200	mW
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$



Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	V _{I(OFF)}	V _{CC} = 5V, I _O = 100μA	0.3	-	-	V
Input Voltage	V _{I(ON)}	V _O = 0.3V, I _O = 20mA	-	-	2	V
Output Voltage	V _{O(on)}	I _O = 50mA, I _I = 2.5mA	-	-	0.3	V
Input Current	I _I	V _I = 5V	-	-	3.6	mA
Output Current	I _{O(off)}	V _{CC} = 50V, V _I = 0V	-	-	0.5	μA
DC Current Gain	G _I	V _O = 5V, I _O = 50mA	56	-	-	-
Input Resistor	R ₁		1.54	2.2	2.86	kΩ
Resistance ratio	R ₂ /R ₁		3.6	4.5	5.5	-
Gain-Bandwidth Product	f _T	V _{CE} = 10V, I _E = 50mA f = 100MHz	-	200	-	MHz

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

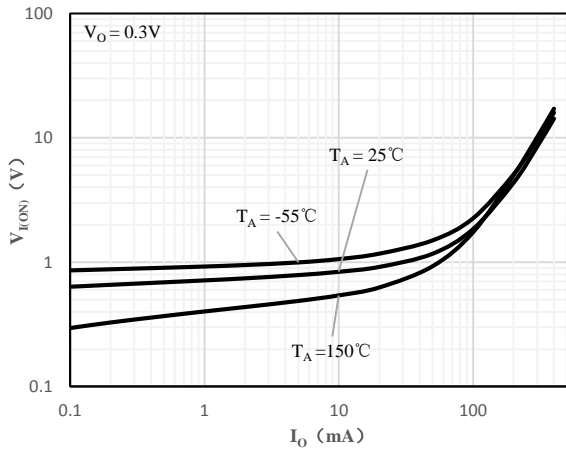


Fig 1 Input Voltage vs Output Current

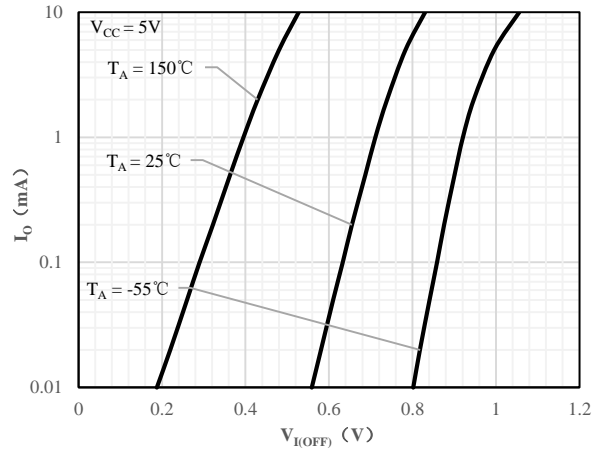


Fig 2 Output Current vs Input Voltage

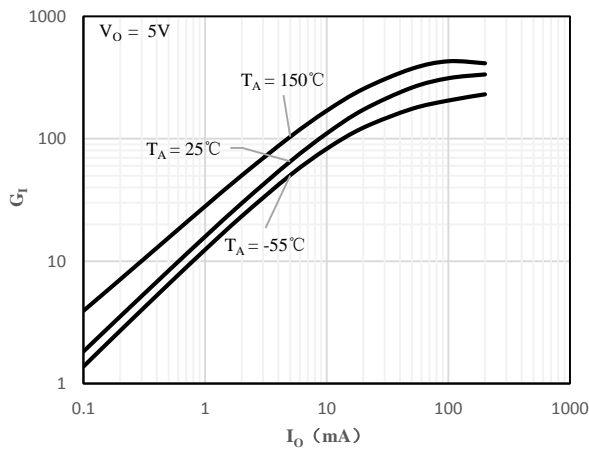


Fig 3 DC Current Gain vs Output Current

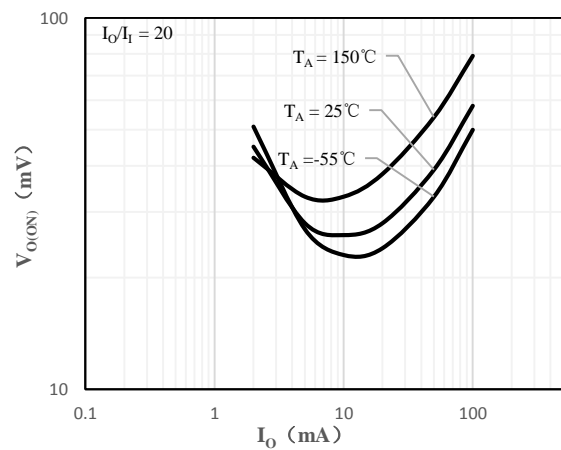


Fig 4 Output Voltage vs Output Current

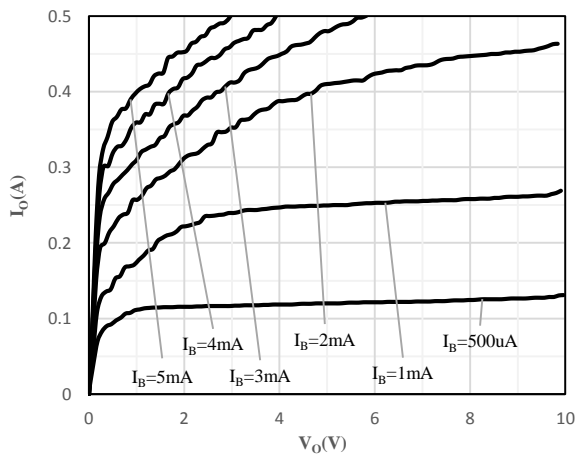


Fig 5 Output Current vs. Output Voltage

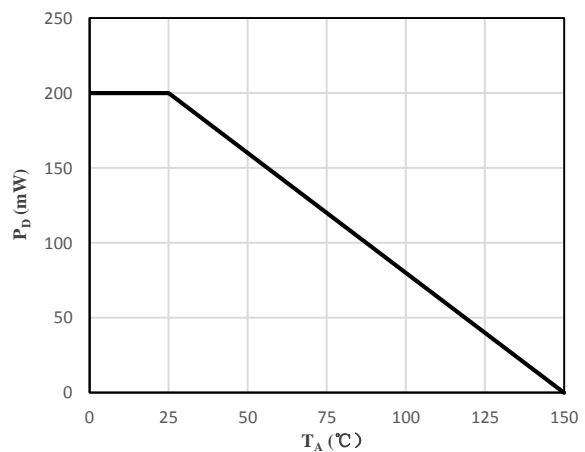
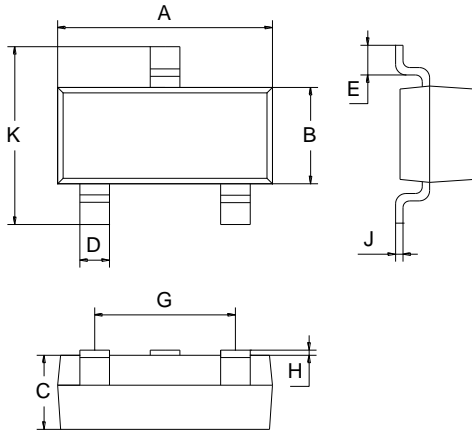


Fig 6 Power Dissipation vs. Air Temperature



Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

