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DDTC124ECA

Digital Transistor

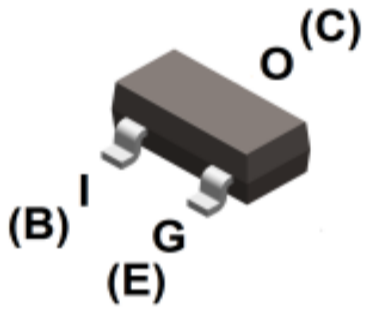
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Features

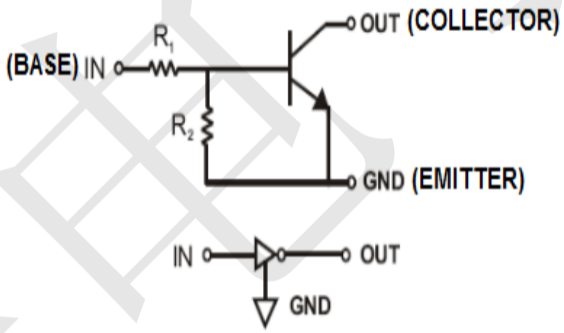
- Epitaxial planar die construction
- Built-in biasing resistors (R_1: 22kΩ, R_2: 22kΩ)
- Also available in lead free version
- RoHS compliant with Halogen-free

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



SOT-23



Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
		SOT-23	
Supply Voltage	V_{CC}	50	V
Input Voltage	V_I	-10 to +40	V
Output Current	I_O	30	mA
Collector Current	$I_{C(Max)}$	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°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	0.5	-	-	V
Input Voltage	$V_{I(ON)}$	V_O = 0.2V, I_O = 5mA	-	-	3	V
Output Voltage	$V_{O(on)}$	I_o = 10mA, I_I = 0.5mA	-	-	0.3	V
Input Current	I_I	V_I = 5V	-	-	0.36	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 = 5mA	56	-	-	-
Input Resistor	R_1		15.4	22	28.6	kΩ
Resistance ratio	R_2/R_1		0.8	1.0	1.2	-
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_E = 5mA f = 100MHz	-	250	-	MHz

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

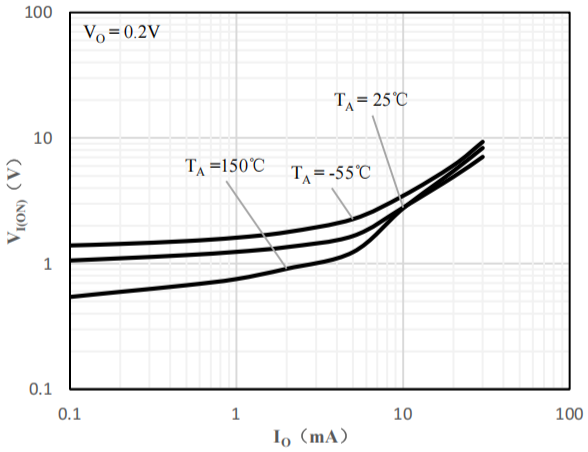


Fig 1 Input Voltage vs Output Current

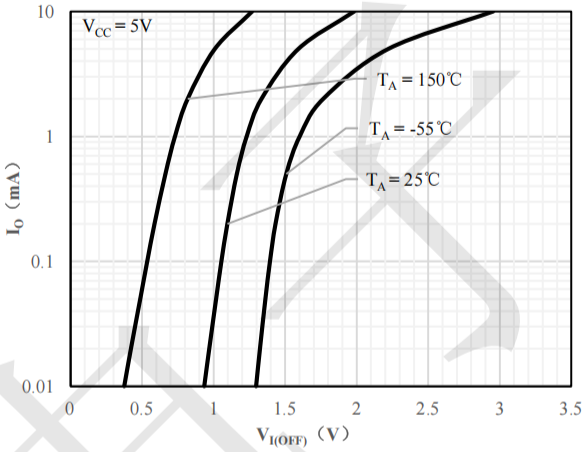


Fig 2 Output Current vs Input Voltage

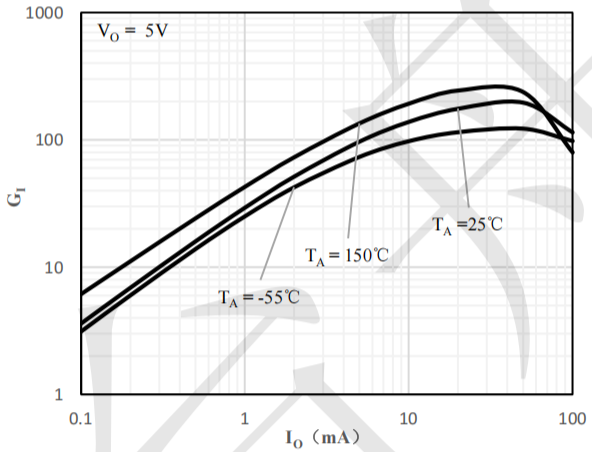


Fig 3 DC Current Gain vs Output Current

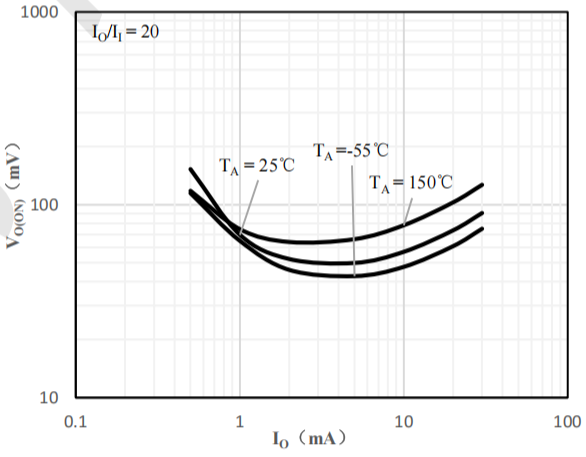


Fig 4 Output Voltage vs Output Current

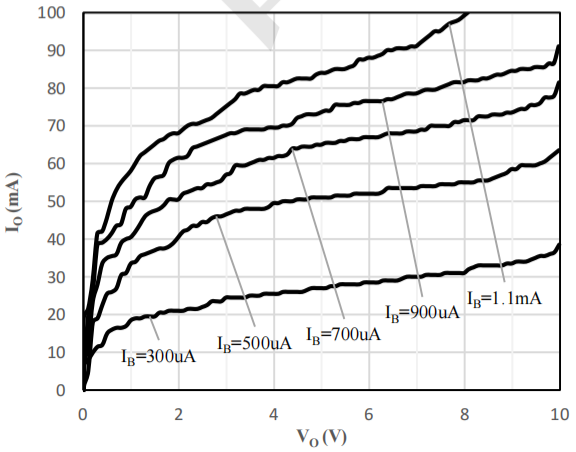
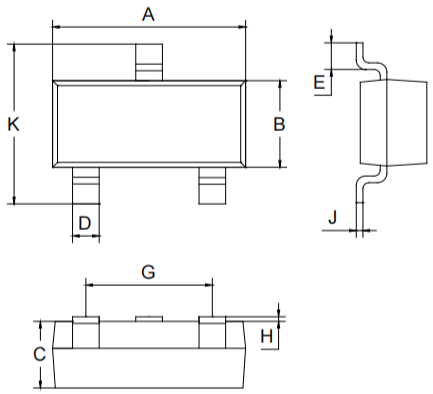


Fig 5 Output Current vs. Output Voltage

Package Outline Dimensions (Unit: mm)

SOT-23



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

