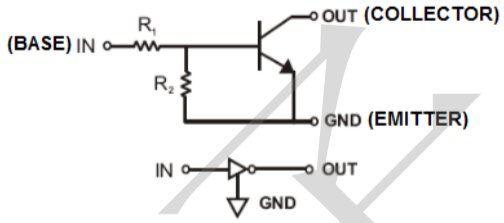
DTC114E Series
NPN-Digital Transistor

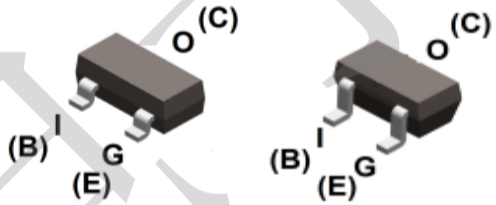
Features

- Epitaxial planar die construction
- Built-in biasing resistors (R_1: 10kΩ, R_2: 10kΩ)
- Also available in lead free version
- RoHS compliant with Halogen-free



Mechanical Data

- Case: SOT-23, SOT-523
- Molding Compound: UL Flammability Classification Ratin 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity
DTC114ECA	SOT-23	3000 pcs / Tape & Reel
DTC114EE	SOT-523	3000 pcs / Tape & Reel

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

Parameter	Symbol	Value		Unit
		SOT-23	SOT-523	
Supply Voltage	V_{CC}	50		V
Input Voltage	V_I	-10 to +40		V
Output Current	I_O	50		mA
Collector Current	$I_{C(Max)}$	100		mA
Power Dissipation	P_D	200	150	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 = 0.3V, I_O = 10mA	-	-	3	V
Output Voltage	$V_{O(on)}$	I_o = 10mA, I_I = 0.5mA	-	-	0.3	V
Input Current	I_I	V_I = 5V	-	-	0.88	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	30	-	-	-
Input Resistor	R_1		7	10	13	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°Cunless otherwise specified)

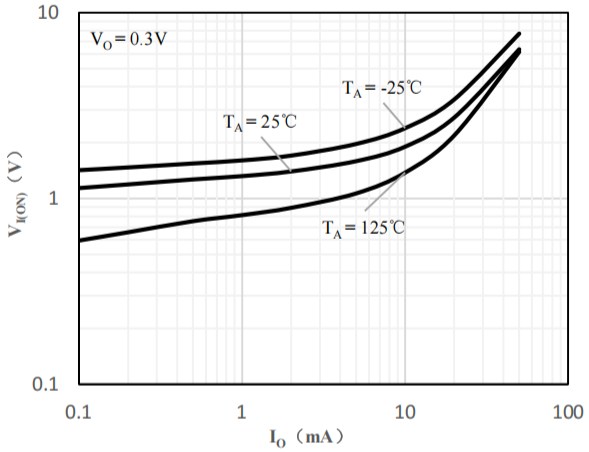


Fig 1 Input Voltage vs Output Current

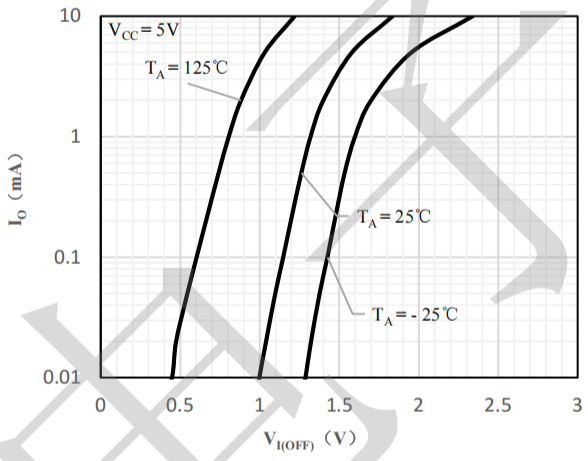


Fig 2 Output Current vs Input Voltage

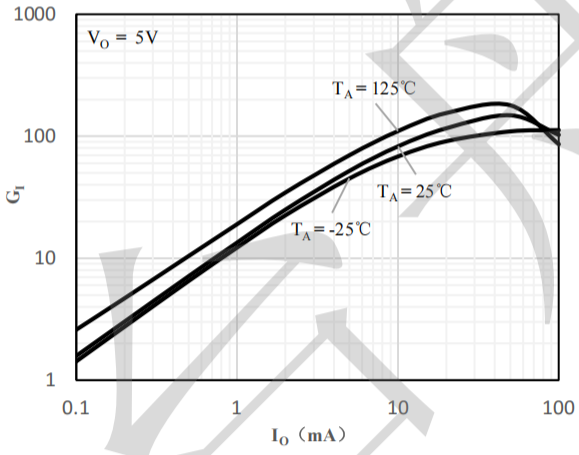


Fig 3 DC Current Gain vs Output Current

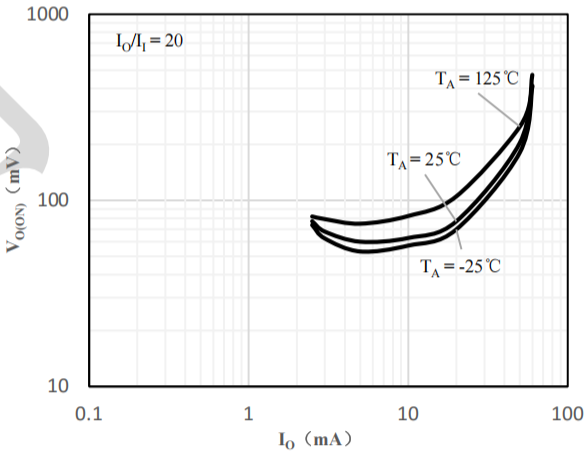
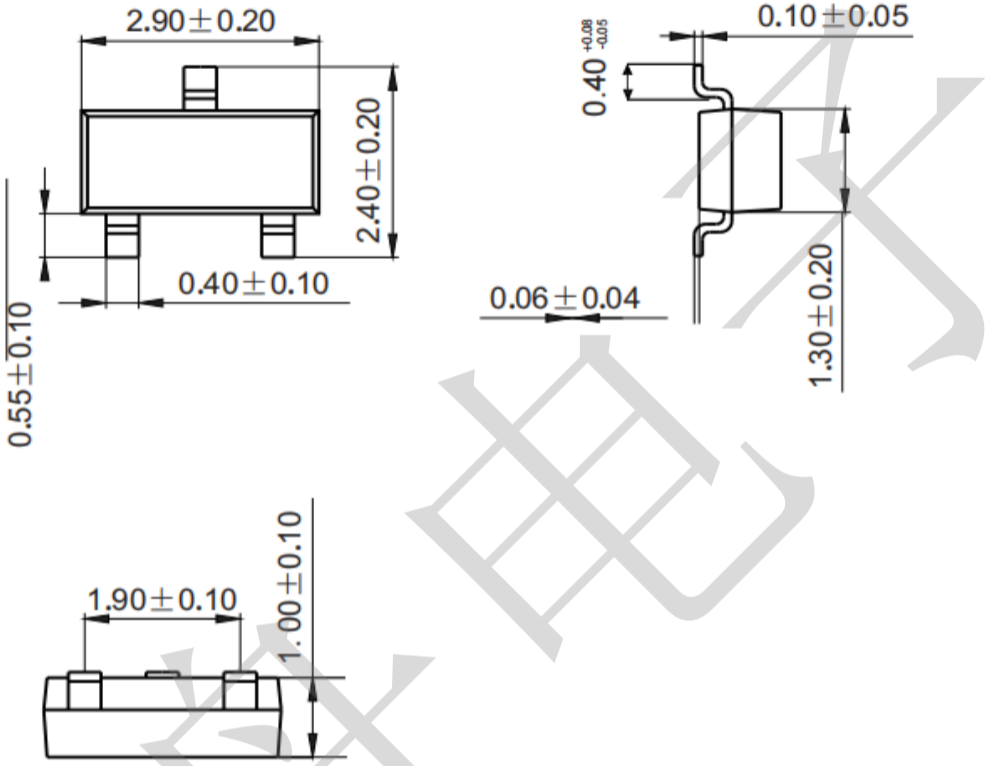


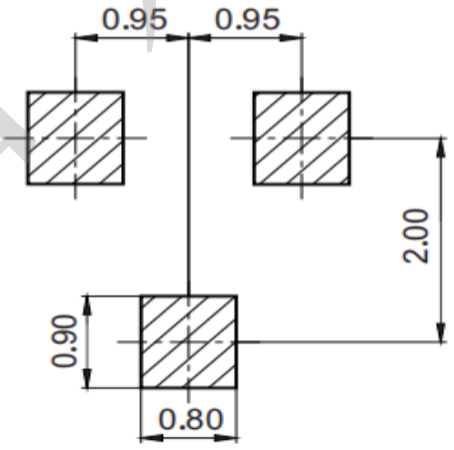
Fig 4 Output Voltage vs Output Current

Package Outline Dimensions (unit:mm)

SOT-23

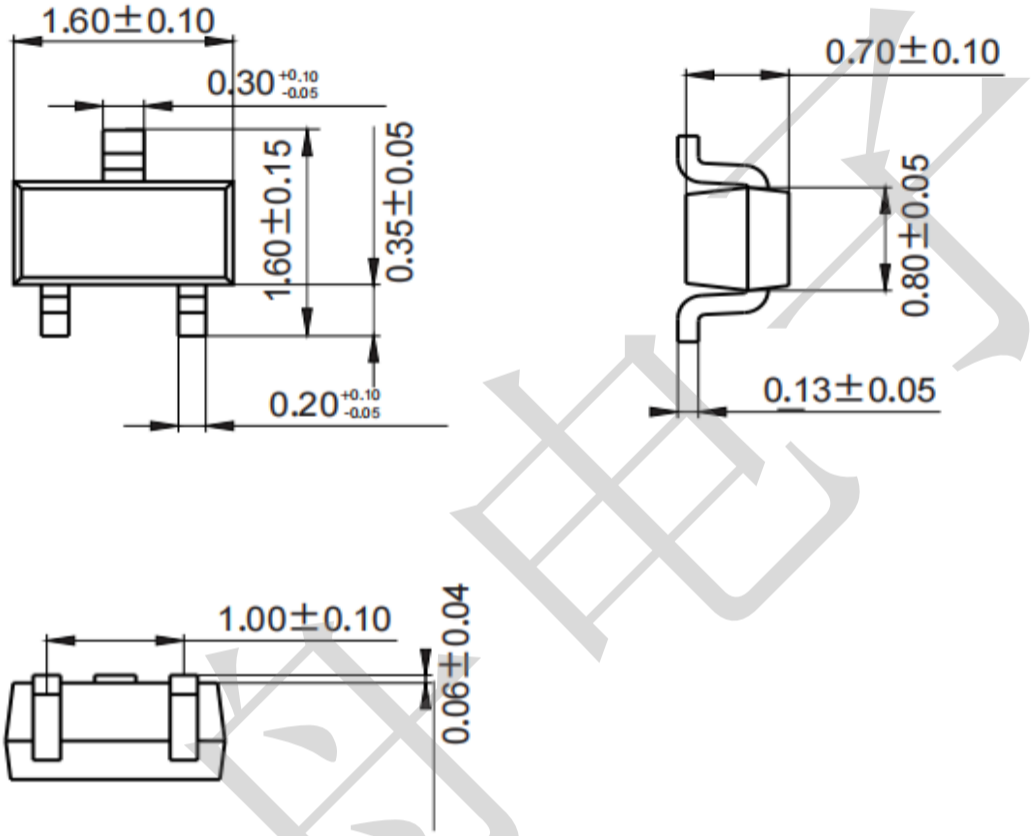


Mounting Pad Layout (unit: mm)



Package Outline Dimensions (unit:mm)

SOT-523



Mounting Pad Layout (unit: mm)

