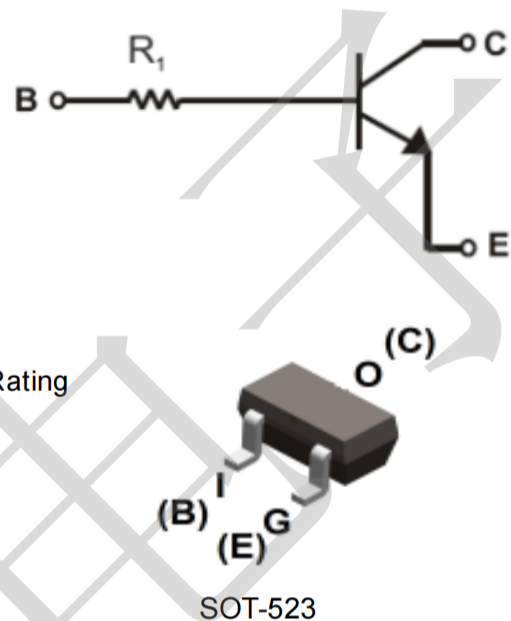


Features

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

Mechanical Data

- Case: SOT-523,
- 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
DTC114TE	SOT-523	3000 pcs / Tape & Reel

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-	V_{CEO}	50	V
Emitter-Base Breakdown Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	100	mA
Collector Current	$I_{C(Max)}$	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 50\mu\text{A}, I_E = 0$	50	-	-	V
Collector-	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 50\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	-	-	0.5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	-	-	0.5	μA
Input Voltage	$V_{I(OFF)}$	$V_{CC} = 5\text{V}, I_O = 100\mu\text{A}$	0.5	-	-	V
Input Voltage	$V_{I(ON)}$	$V_O = 0.3\text{V}, I_O = 10\text{mA}$	-	-	1.7	V
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_O = 10\text{mA}, I_B = 1\text{mA}$	-	-	0.3	V
DC Current Gain	h_{FE}	$V_O = 5\text{V}, I_O = 1\text{mA}$	100	-	600	-
Input Resistor	R_I		7	10	13	k Ω
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_E = 5\text{mA}$ $f = 100\text{MHz}$	-	250	-	MHz

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

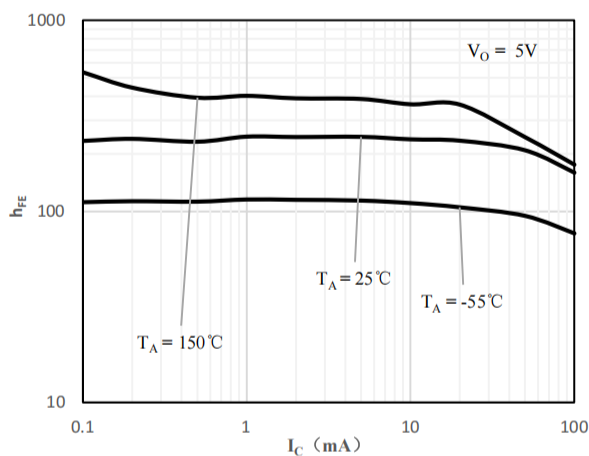


Fig 1 h_{FE} vs. I_C

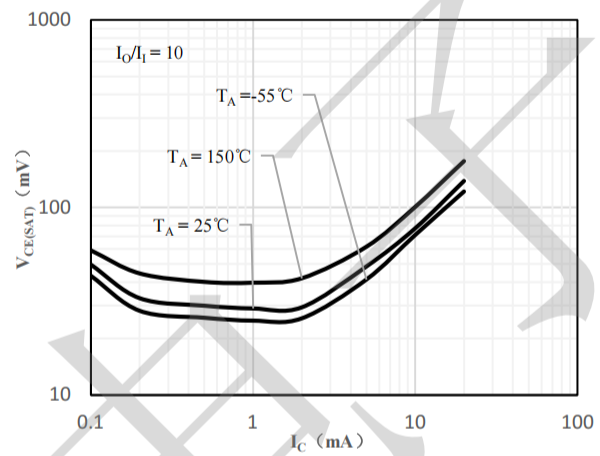


Fig 2 $V_{CE(sat)}$ vs. I_C

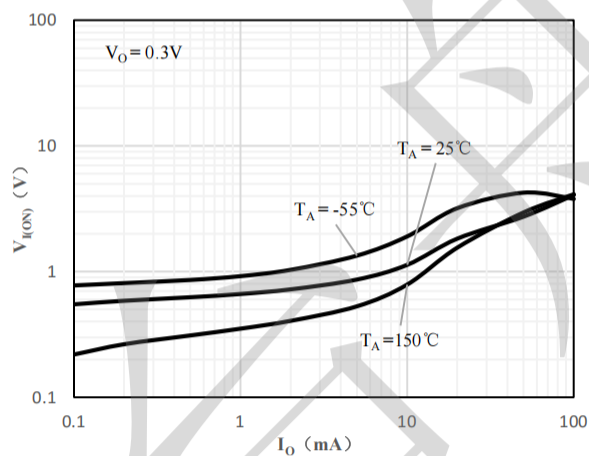


Fig 3 Input Voltage vs Output Current

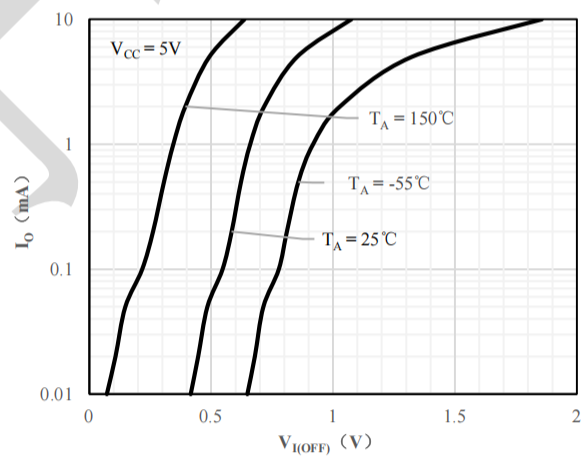
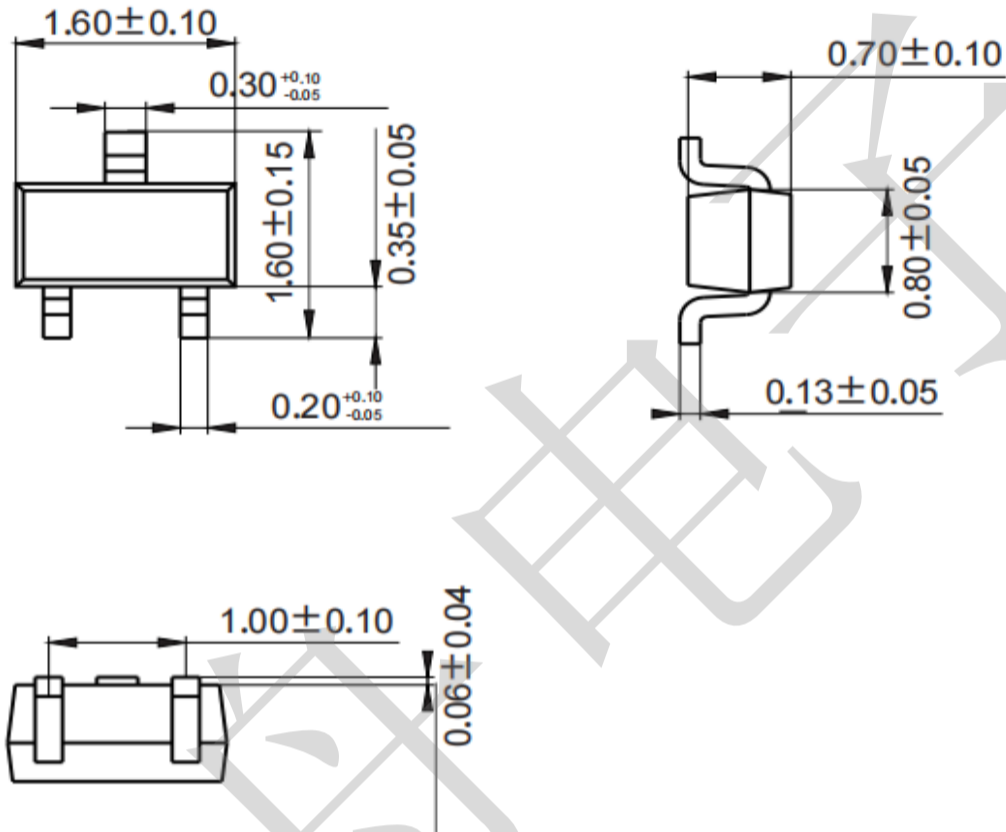


Fig 4 Output Current vs Input Voltage

Package Outline Dimensions (unit:mm)

SOT-523



Mounting Pad Layout (unit: mm)

