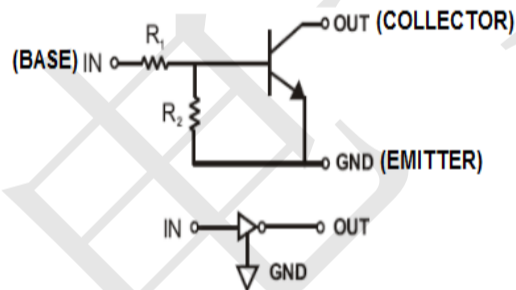
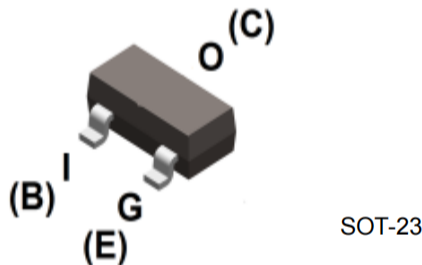


Features

- Epitaxial planar die construction
- Built-in biasing resistors (R_1 : 22k Ω , R_2 : 47k Ω)
- 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



Ordering Information

Part Number	Package	Shipping Quantity
BCR142	SOT-23	3000 pcs / Tape & Reel

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ 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	50	mA
Collector Current	$I_{C(Max)}$	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(\text{OFF})}$	$V_{CC} = 5\text{V}, I_O = 100\mu\text{A}$	0.4	-	-	V
Input Voltage	$V_{I(\text{ON})}$	$V_O = 0.3\text{V}, I_O = 2\text{mA}$	-	-	2.5	V
Output Voltage	$V_{O(\text{on})}$	$I_O = 10\text{mA}, I_I = 0.5\text{mA}$	-	-	0.3	V
Input Current	I_I	$V_I = 5\text{V}$	-	-	0.36	mA
Output Current	$I_{O(\text{off})}$	$V_{CC} = 50\text{V}, V_I = 0\text{V}$	-	-	0.5	μA
DC Current Gain	G_I	$V_O = 5\text{V}, I_O = 10\text{mA}$	68	-	-	-
Input Resistor	R_I		15.4	22	28.6	k Ω
Resistance ratio	R_2/R_1		1.7	2.1	2.6	-
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)

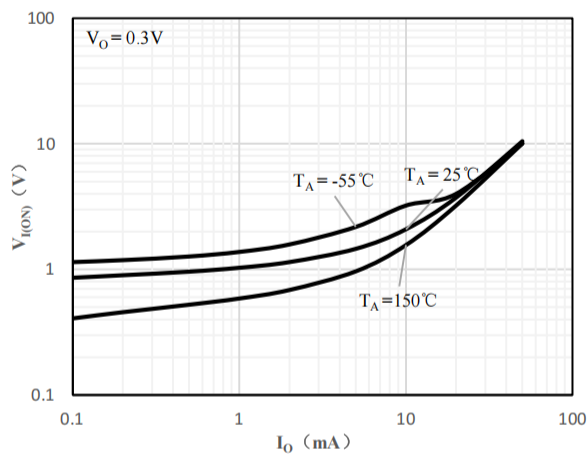


Fig 1 Input Voltage vs Output Current

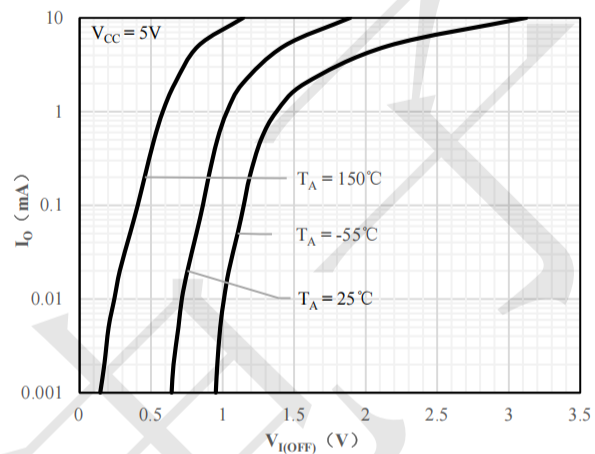


Fig 2 Output Current vs Input Voltage

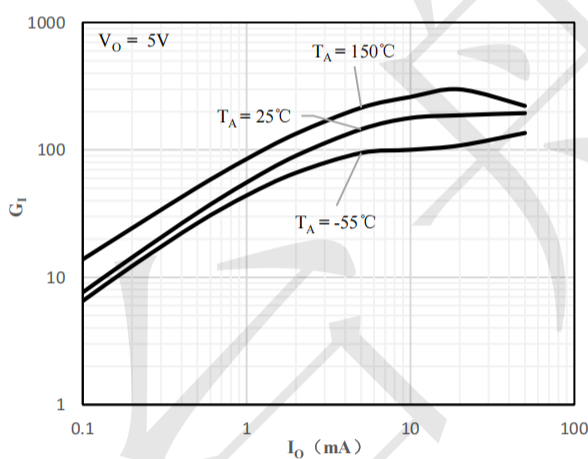


Fig 3 DC Current Gain vs Output Current

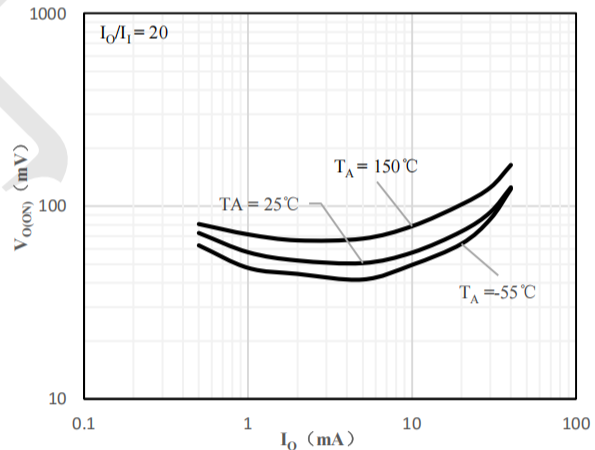
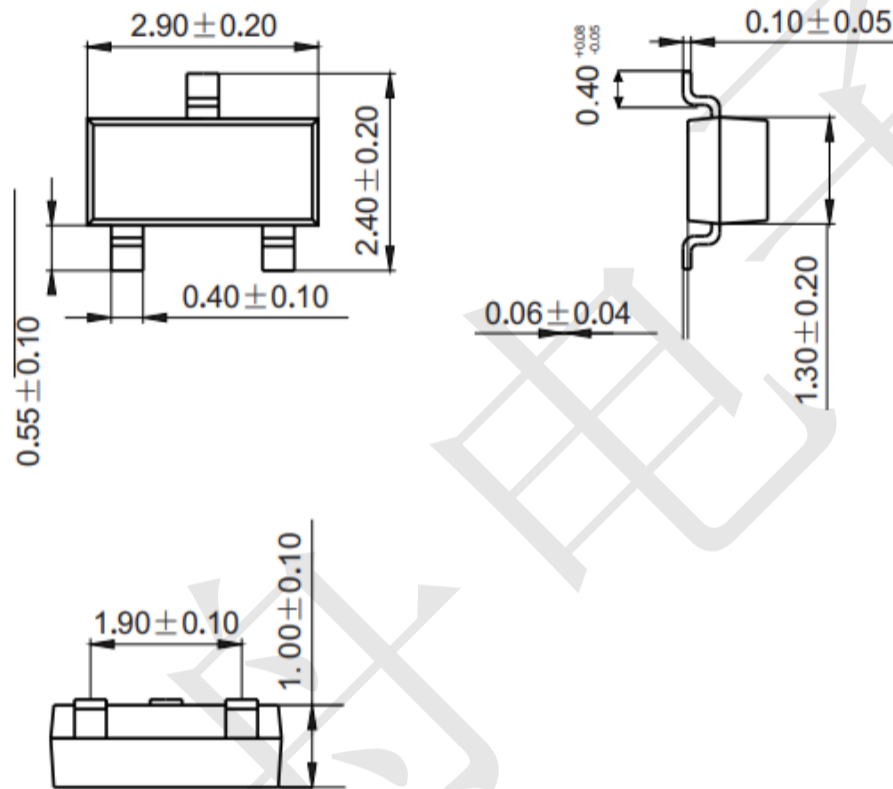


Fig 4 Output Voltage vs Output Current

Package information (Unit: mm)

SOT-23



Mounting Pad Layout (Unit: mm)

