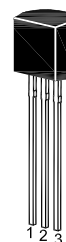
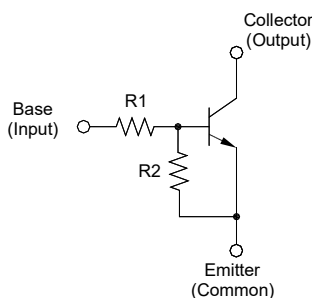


RC241...RC246

NPN Silicon Epitaxial Planar Digital Transistor

Feature

- With Built-in Bias Resistor
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- High Output Current



1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

Applications

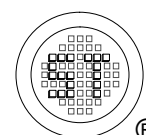
- For high current switching, interface circuit and driver circuit

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Value	Unit
Collector Emitter Voltage		V_{CEO}	50	V
Emitter Base Voltage	RC241	V_{EBO}	10, -10	V
	RC242		12, -10	
	RC243		20, -10	
	RC244		30, -10	
	RC245		10, -5	
	RC246		12, -6	
Collector Current	$t_p = 1\text{ms}$	I_C	800	mA
Total Power Dissipation		P_{tot}	400	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Resistance Ratings

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	312.5	$^\circ\text{C/W}$

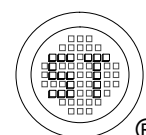


RC241...RC246

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 50\text{ mA}$	RC241	33	-	-	-	
	RC242	39	-	-	-	
	RC243	47	-	-	-	
	RC244	56	-	-	-	
	RC245	56	-	-	-	
	RC246	56	-	-	-	
Collector Emitter Cutoff Current at $V_{CE} = 30\text{ V}$	I_{CEO}	-	-	10	μA	
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	RC241	-	-	7.2	mA	
	RC242	-	-	3.8		
	RC243	-	-	1.8		
	RC244	-	-	0.88		
	RC245	-	-	7.2		
	RC246	-	-	3.6		
Collector Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 2.5\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V	
Input Voltage (ON) at $V_{CE} = 0.3\text{ V}$, $I_C = 20\text{ mA}$	RC241	-	-	3	V	
	RC242	-	-	3		
	RC243	-	-	3		
	RC244	-	-	3		
	RC245	-	-	3		
	RC246	-	-	2		
Input Voltage (OFF) at $V_{CE} = 5\text{ V}$, $I_C = 0.1\text{ mA}$	RC241~244 RC245~246	$V_{I(OFF)}$	0.5 0.3	- -	V	
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 5\text{ mA}$, $f = 100\text{ MHz}$		f_T ¹⁾	-	200	MHz	
Input Resistance	RC241	0.7	1	1.3	K Ω	
	RC242	1.54	2.2	2.86		
	RC243	3.29	4.7	6.11		
	RC244	7	10	13		
	RC245	0.7	1	1.3		
	RC246	1.54	2.2	2.86		
Resistance Ratio	RC241~ RC245 RC246	R_2 / R_1	0.8 3.6	1 4.5	1.2 5.4	-

¹⁾ Characteristic of transistor only.



RC241...RC246

Electrical Characteristics Curves: RC241

Fig 1. Collector Current vs. $V_{I(ON)}$

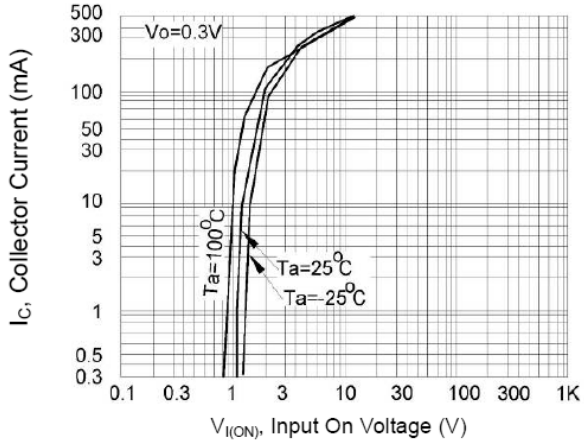


Fig 2. Collector Current vs. $V_{I(off)}$

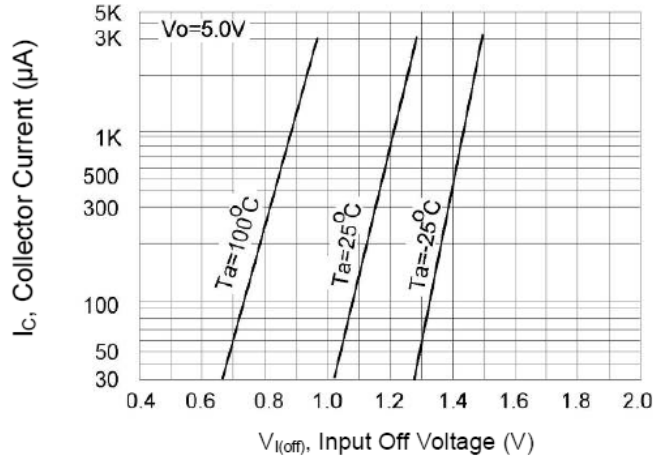
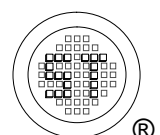
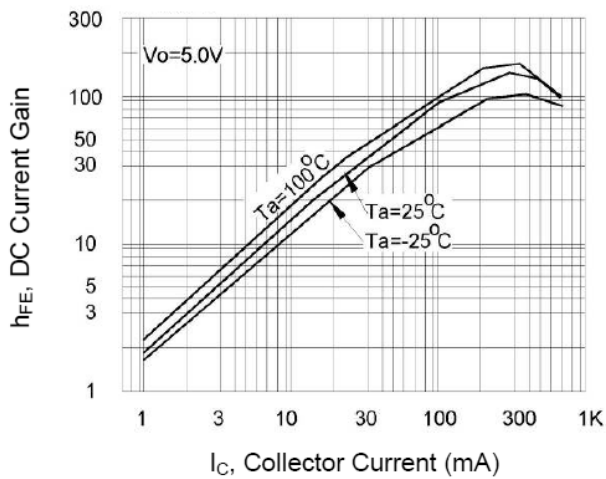


Fig 3. DC Current Gain vs. Collector Current



RC241...RC246

Electrical Characteristics Curves: RC242

Fig 1. Collector Current vs. $V_{I(ON)}$

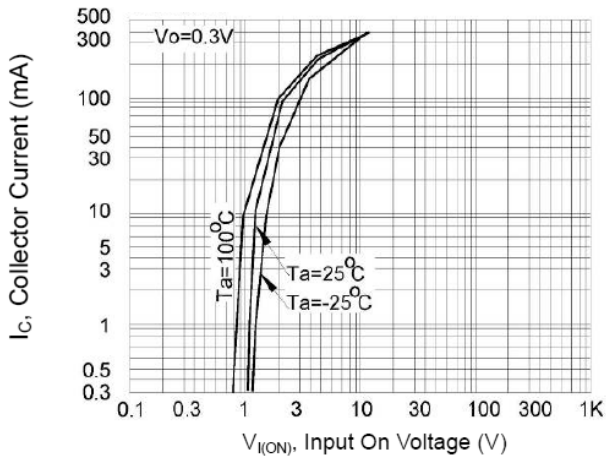


Fig 2. Collector Current vs. $V_{I(off)}$

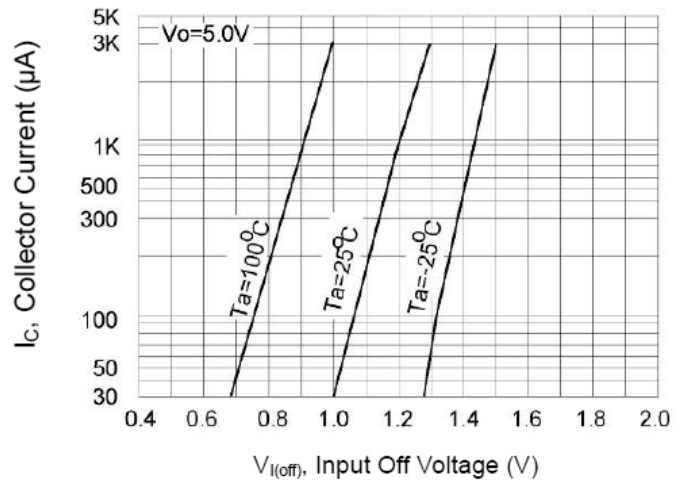
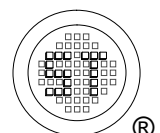
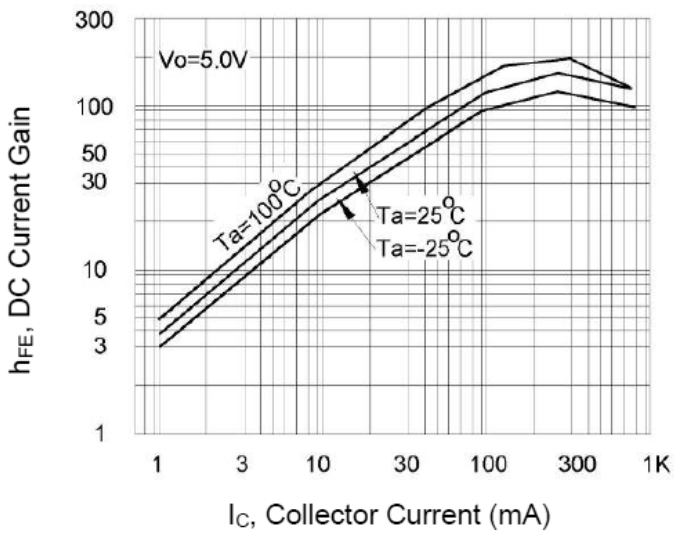


Fig 3. DC Current Gain vs. Collector Current



RC241...RC246

Electrical Characteristics Curves: RC243

Fig 1. Collector Current vs. $V_{I(ON)}$

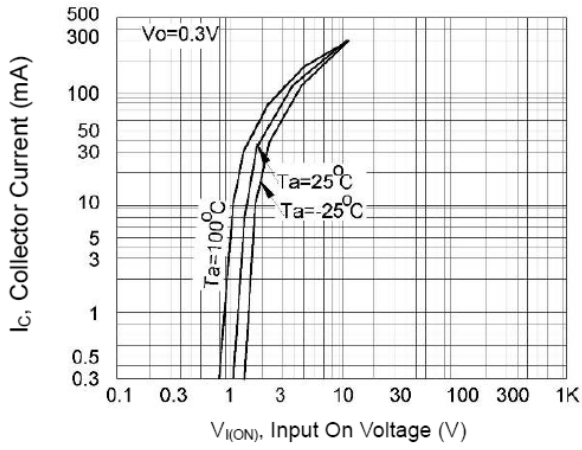


Fig 2. Collector Current vs. $V_{I(off)}$

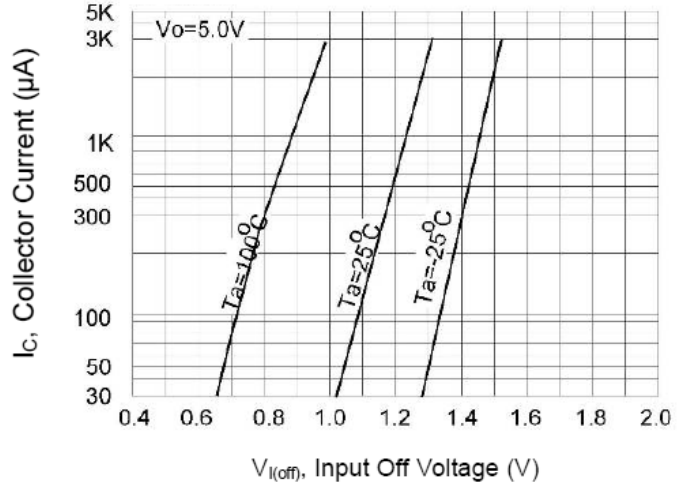
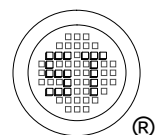
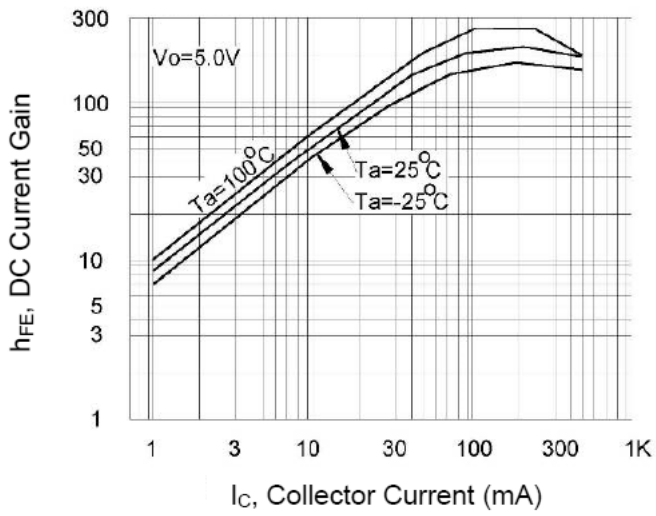


Fig 3. DC Current Gain vs. Collector Current



RC241...RC246

Electrical Characteristics Curves: RC244

Fig 1. Collector Current vs. $V_{I(ON)}$

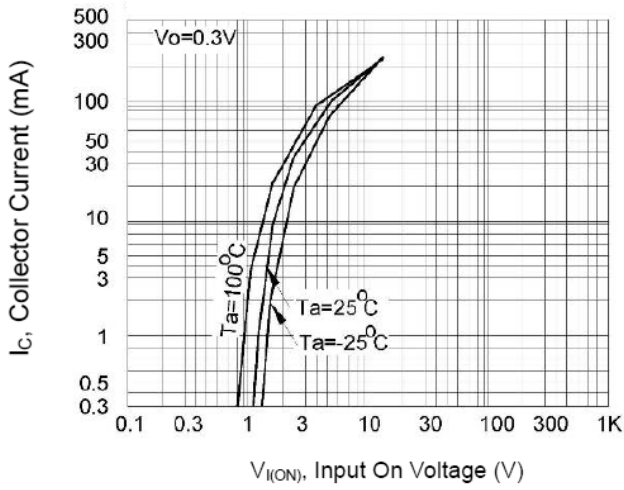


Fig 2. Collector Current vs. $V_{I(off)}$

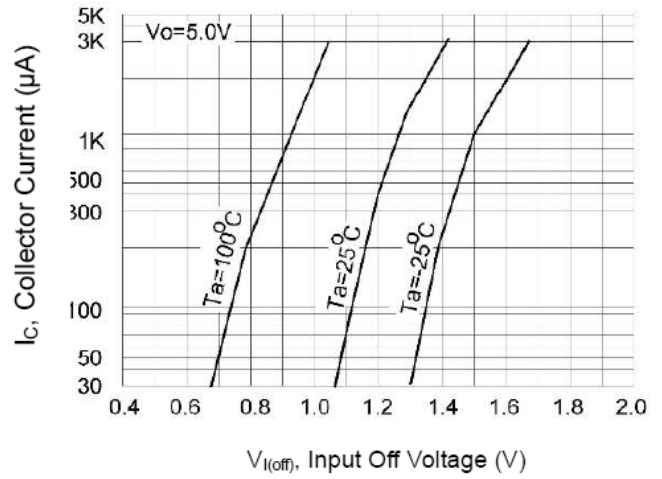
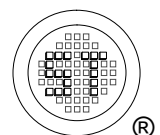
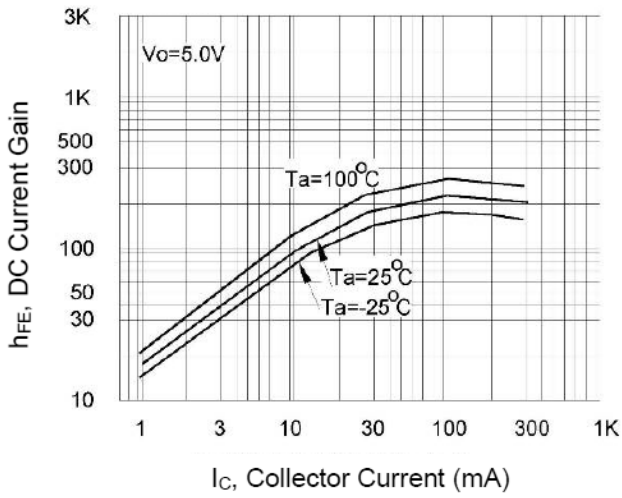


Fig 3. DC Current Gain vs. Collector Current



RC241...RC246

Electrical Characteristics Curves: RC245

Fig 1. Collector Current vs. $V_{I(ON)}$

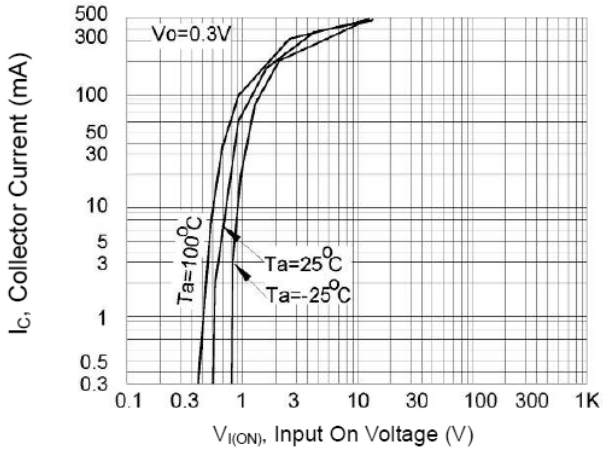


Fig 2. Collector Current vs. $V_{I(off)}$

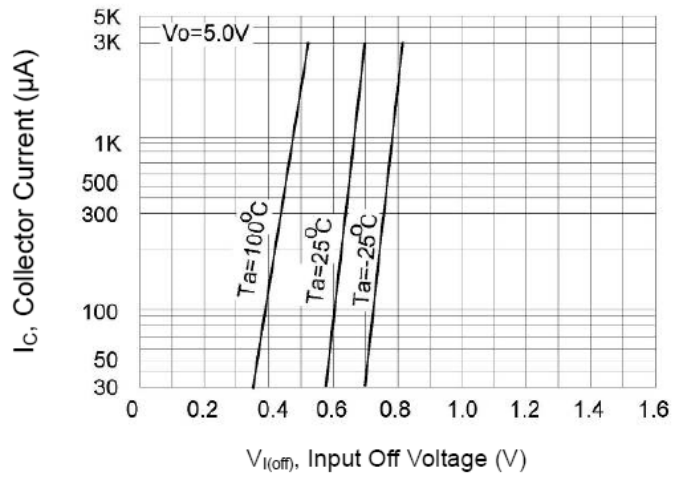
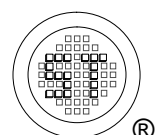
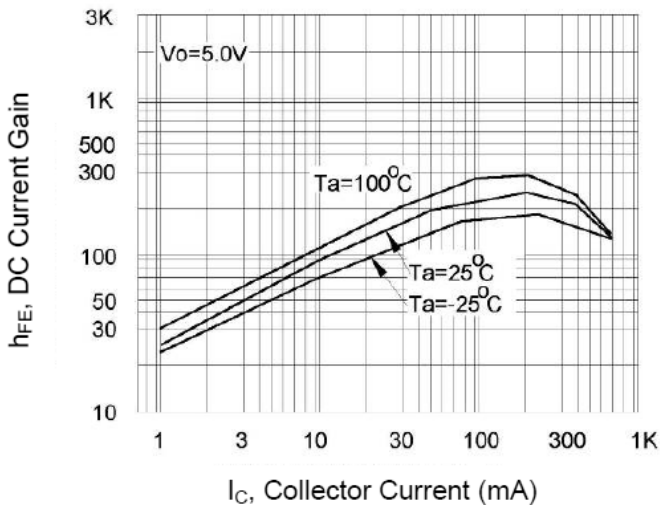


Fig 3. DC Current Gain vs. Collector Current



RC241...RC246

Electrical Characteristics Curves: RC246

Fig 1. Collector Current vs. $V_{I(ON)}$

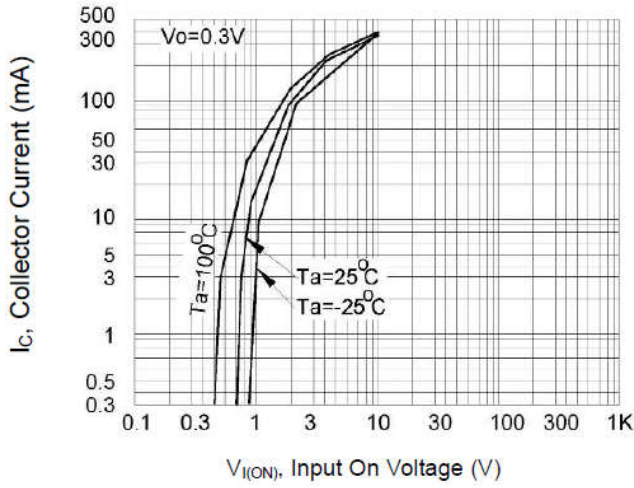


Fig 2. Collector Current vs. $V_{I(off)}$

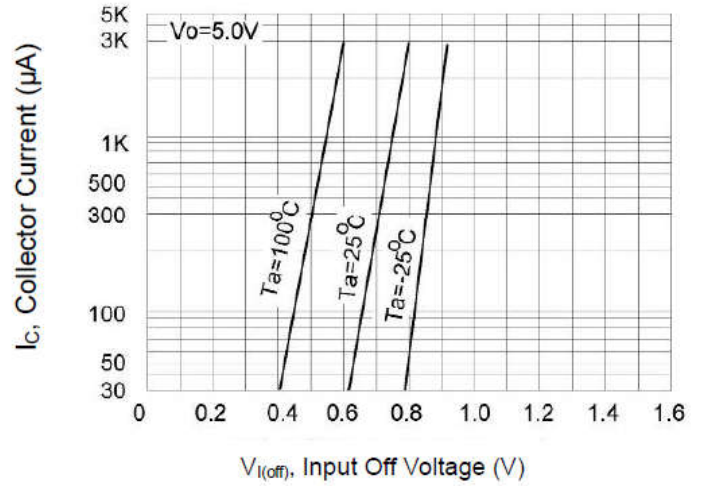
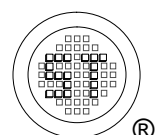
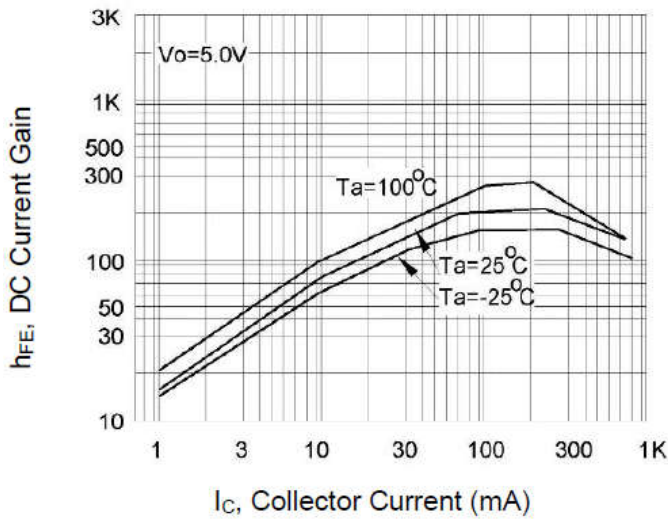
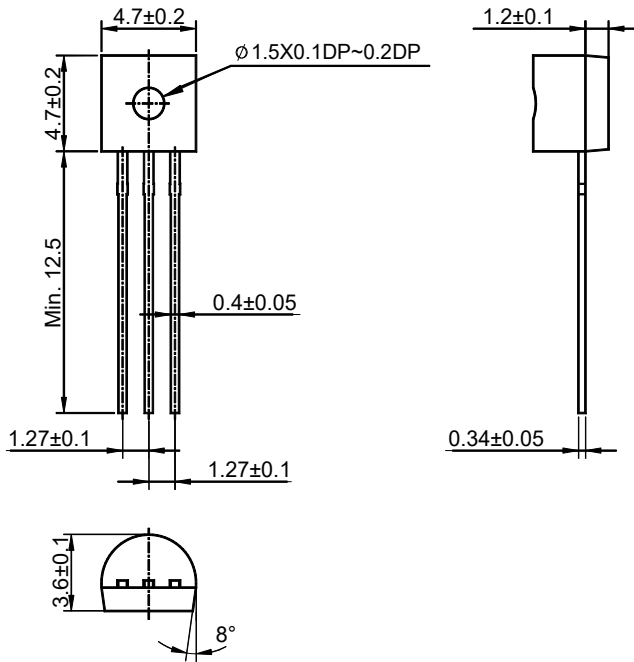


Fig 3. DC Current Gain vs. Collector Current

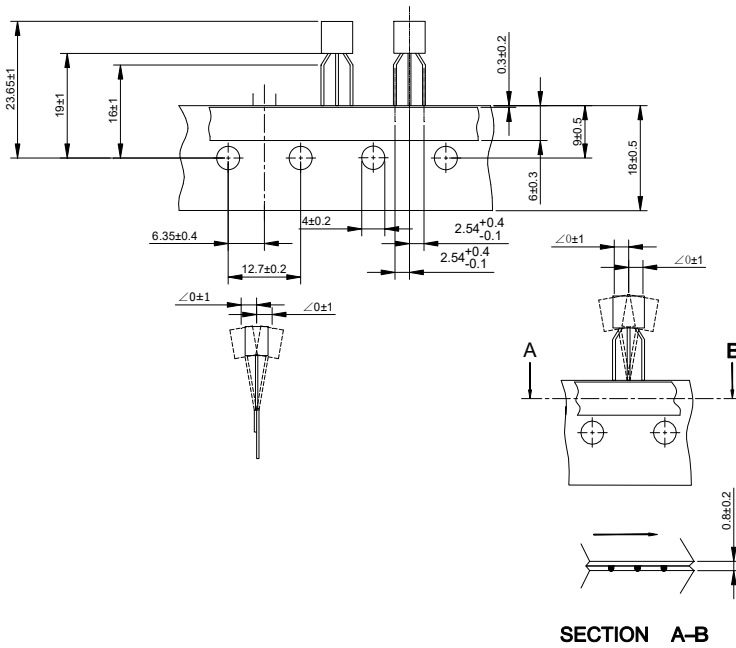


RC241...RC246

TO-92 Package Outline (Dimensions in millimeters)



TO-92 Ammo-Pack Outline (Dimensions in millimeters)



Packing information

Package	Bulk Packing			Ammo-Packing	
	Per Bag Qty	Per Box Qty	Per Carton Qty	Per Box Qty	Per Carton Qty
TO-92	1,000	5,000	50,000	4,000	20,000

