

Silicon NPN transistor epitaxial type (Bias resistor built-in transistor)
ICT036N

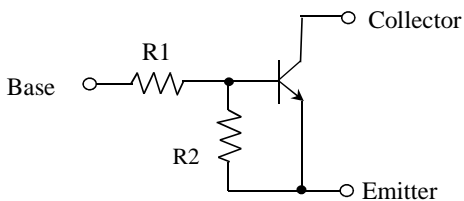
[Applications]

Switching circuit, Inverter circuit, Interface circuit and Driver circuit

[Feature]

Built-in bias resistors, Simplified cuircuit design
 Complimentary pair with ICT036P

[Circuit diagram]



[Resistor Series] ICT036Nxxx

Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)
231	2.2	2.2	237	2.2	47	44H	47	22	250	200	-
431	4.7	4.7	432	4.7	10	130	1	-	14B	-	10
141	10	10	434	4.7	22	230	2.2	-	24B	-	22
241	22	22	436	4.7	47	430	4.7	-	44B	-	47
441	47	47	14H	10	4.7	140	10	-	15B	-	100
151	100	100	144	10	47	240	22	-			
136	1	10	242	22	47	440	47	-			
234	2.2	10	44Q	47	10	150	100	-			

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	55	V
Collector-emitter voltage	VCEO	50	V
Emitter-base voltage	VEBO	5	V
Collector current	IC	100	mA
Junction temperature	Tj	150	C
Storage temperature	Tstg	-55 to 150	C

Notice 1) These are measured data of transistors assembled by PHENITEC SEMICONDUCTOR Corp. and are for reference only.

Notice 2) The contents described herein are subject to change without notice.

[Electrical characteristics (Ta=25C)] xxx : Resistor Series

Characteristic	xxx	Symbol	Min.	Typ.	Max.	Unit	Conditions			
Collector-emitter voltage		VCEO	50	-	-	V	ICE= 1mA			
Collector cut-off current		ICBO	-	-	0.5	uA	VCB= 50V			
DC current gain	231	hFE	20	-	-	-	VCE= 5V, IC= 20mA			
	431		20	-	-		VCE= 5V, IC= 10mA			
	141		30	-	-		VCE= 5V, IC= 5mA			
	241		56	-	-					
	441		68	-	-					
	151		82	-	-					
	136		33	-	-					
	234		33	-	-		VCE= 5V, IC= 10mA			
	237		80	-	-					
	432		30	-	-					
	434		68	-	-					
	436		80	-	-					
	14H		24	-	-		VCE= 5V, IC= 5mA			
	144		68	-	-					
	242		68	-	-					
	44Q		33	-	-					
	44H		56	-	-					
			130,230,430,140 240,440,150,250		100		250	600		VCE= 5V, IC= 1mA
			14B		30		-	-	VCE= 5V, IC= 5mA	
			24B		56		-	-		
	44B		68	-	-					
	15B		82	-	-					
Input on voltage	231,431	VI(on)	3	-	-	V	VCE= 0.3V, IC= 20mA			
	141		3	-	-		VCE= 0.3V, IC= 10mA			
	241		3	-	-		VCE= 0.2V, IC= 5mA			
	441		3	-	-		VCE= 0.3V, IC= 2mA			
	151		3	-	-		VCE= 0.3V, IC= 1mA			
	136,234		3	-	-		VCE= 0.3V, IC= 20mA			
	237		1.1	-	-		VCE= 0.3V, IC= 5mA			
	432		2.5	-	-		VCE= 0.3V, IC= 20mA			
	434		1.7	-	-		VCE= 0.2V, IC= 5mA			
	436		1.3	-	-		VCE= 0.3V, IC= 5mA			
	14H		3	-	-		VCE= 0.3V, IC= 2mA			
	144		1.4	-	-		VCE= 0.3V, IC= 1mA			
	242		2.5	-	-		VCE= 0.3V, IC= 2mA			
	44Q		5	-	-					
	44H		4	-	-					
Input off voltage	231,431,141,241	VI(off)	-	-	0.5	V	VCE= 5V, IC= 100uA			
	441,151,136		-	-	0.5					
	234		-	-	0.3					
	237		-	-	0.5					
	432		-	-	0.3					
	434,436		-	-	0.5					
	14H		-	-	0.8					
144	-	-	0.3							

[Electrical characteristics (Ta=25C)] xxx : Resistor Series

Characteristic	xxx	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input off voltage	242	VI(off)	-	-	0.4	V	VCE= 5V, IC= 100uA
	44Q		-	-	1		
	44H		-	-	0.8		
Input resistance	231	R1	1.54	2.2	2.86	kohm	-
	431		3.29	4.7	6.11		
	141		7	10	13		
	241		15.4	22	28.6		
	441		32.9	47	61.1		
	151		70	100	130		
	136		0.7	1	1.3		
	234		1.54	2.2	2.86		
	237		1.54	2.2	2.86		
	432		3.29	4.7	6.11		
	434		3.29	4.7	6.11		
	436		3.29	4.7	6.11		
	14H		7	10	13		
	144		7	10	13		
	242		15.4	22	28.6		
	44Q		32.9	47	61.1		
	44H		32.9	47	61.1		
	130		0.7	1	1.3		
	230		1.54	2.2	2.86		
	430		3.29	4.7	6.11		
	140		7	10	13		
	240		15.4	22	28.6		
	440		32.9	47	61.1		
	150		70	100	130		
	250		140	200	260		
Base-emitter resistance	231	R2	1.54	2.2	2.86	kohm	-
	431		3.29	4.7	6.11		
	141		7	10	13		
	241		15.4	22	28.6		
	441		32.9	47	61.1		
	151		70	100	130		
	136		7	10	13		
	234		7	10	13		
	237		32.9	47	61.1		
	432		7	10	13		
	434		15.4	22	28.6		
	436		32.9	47	61.1		
	14H		32.9	4.7	6.11		
	144		32.9	4.7	6.11		
	242		32.9	4.7	6.11		
	44Q		7	10	13		
	44H		15.4	22	28.6		
	14B		7	10	13		
	24B		15.4	22	28.6		
	44B		32.9	4.7	6.11		
	15B		70	100	130		

[Electrical characteristics (Ta=25C)] xxx : Resistor Series

Characteristic	xxx	Symbol	Min.	Typ.	Max.	Unit	Conditions
Resistance ratio	231	R2/R1	0.8	1	1.2	-	-
	431		0.8	1	1.2		
	141		0.8	1	1.2		
	241		0.8	1	1.2		
	441		0.8	1	1.2		
	151		0.8	1	1.2		
	136		8	10	12		
	234		3.6	4.5	5.5		
	237		17	21	26		
	432		1.7	2.1	2.6		
	434		3.6	4.5	5.5		
	436		8	10	12		
	14H		0.37	0.47	0.57		
	144		3.7	4.7	5.7		
	242		1.7	2.1	2.6		
	44Q		0.17	0.21	0.26		
44H	0.37	0.47	0.57				
Transition Frequency		fT	-	250	-	MHz	VCE= 10V, IE= -5mA, f= 100MHz