

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

**ICT063N**

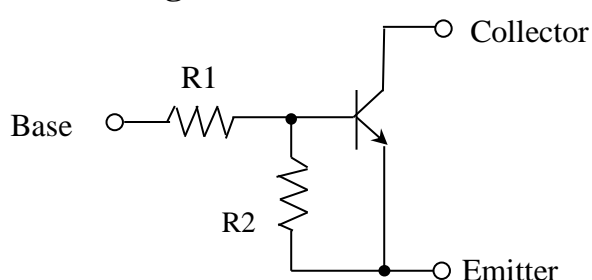
**[ Applications ]**

Switching circuit, Inverter circuit, Interface circuit and Driver circuit

**[ Feature ]**

Built-in bias resistors, Simplified circuit design  
Complimentary pair with ICT063P

**[ Circuit diagram ]**



**[ Resistor Series ] ICT063Nxxx**

Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)	Series	R1(kohm)	R2(kohm)
131	1	1	136	1	10	230	2.2	-	14B	-	10
231	2.2	2.2	234	2.2	10	430	4.7	-			
431	4.7	4.7	333	3.3	10	140	10	-			
141	10	10	228	0.22	10	220	0.22	-			
227	0.22	4.7	427	0.47	10	420	0.47	-			

**[ Absolute maximum ratings (Ta=25C) ]**

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	50	V
Collector-emitter voltage	VCEO	40	V
Emitter-base voltage	VEBO	5	V
Collector current	IC	500	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	40	-	-	V	ICE= 1mA
Collector cut-off current		ICBO	-	-	0.5	uA	VCB= 50V
DC current gain	131	hFE	33	-	-	-	VCE= 5V, IC= 50mA
	231		39	-	-		
	431		47	-	-		
	141		56	-	-		
	227		47	-	-		
	136,234,333		56	-	-		
	228,427		100	250	600		
	230,430,140 220,420 14B		56	-	-		
Input on voltage	131,231,431	VI(on)	-3	-	-	V	VCE= 0.3V, IC= 20mA
	141		-3	-	-		VCE= 0.3V, IC= 10mA
	227		-2	-	-		VCE= 0.3V, IC= 30mA
	136		-3	-	-		VCE= 0.3V, IC= 20mA
	234,333		-2	-	-		
	228,427		-3	-	-		
Input off voltage	131,231,431	VI(off)	-	-	-0.5	V	VCE= 5V, IC= 100uA
	141,227		-	-	-0.3		
	136,234		-	-	-0.5		
	333 228,427		-	-	-0.3		
Input resistance	131	R1	0.7	1	1.3	kohm	-
	231		1.54	2.2	2.86		
	431		3.29	4.7	6.11		
	141		7	10	13		
	227		0.154	0.22	0.286		
	136		0.7	1	1.3		
	234		1.54	2.2	2.86		
	333		2.31	3.3	4.29		
	228		0.154	0.22	0.286		
	427		0.35	0.47	0.59		
	230		1.54	2.2	2.86		
	430		3.29	4.7	6.11		
	140		7	10	13		
	220		0.154	0.22	0.286		
420	0.35	0.47	0.59				
Base-emitter resistance	131	R2	0.7	1	1.3	kohm	-
	231		1.54	2.2	2.86		
	431		3.29	4.7	6.11		
	141		7	10	13		
	227		3.29	4.7	6.11		
	136		7	10	13		
	234		7	10	13		
	333		7	10	13		
	228		7	10	13		
	427		7	10	13		
14B	7	10	13				

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

Characteristic	xxx	Symbol	Min.	Typ.	Max.	Unit	Conditions
Resistance ratio	131	R2/R1	0.8	1	1.2	-	-
	231		0.8	1	1.2		
	431		0.8	1	1.2		
	141		0.8	1	1.2		
	227		17.1	21.3	25.6		
	136		8	10	12		
	234		3.6	4.5	5.5		
	333		2.4	3	3.7		
	228		8	10	12		
	427		17.7	21.3	24.9		
Transition Frequency		fT	-	200	-	MHz	VCE= 10V, IE= -5mA, f= 100MHz