ORIENT

Photocoupler

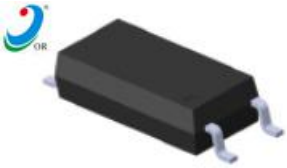
Product Data Sheet

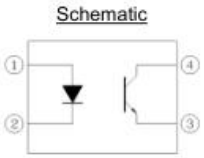
Name: OR-10XX

Customer: _____

Date: _____

1.





Pin Configuration
1. Anode
2. Cathode
3. Emitter
4. Collector

2.

The OR-10XX series devices consist of an infrared emitting diode, optically coupled to a phototransistor detector.They are packaged in a 4-pin SOP package.

3.

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Parameter		Symbol	Rated Value	Unit
Input	Forward Current	I_F	60	mA
	Junction Temperature	T_J	125	
	Reverse Voltage	V_R	6	V
	Consume Power	P	100	mW
Output	Collector and emitter Voltage	V_{CEO}	80	V
	Emitter and collector Voltage	V_{ECO}	7	
	Collector Current	I_C	50	mA
	Consume Power	P_C	150	mW
Total Consume Power		P_{tot}	250	mW
*1 Insulation Voltage		V_{iso}	5000	Vrms
Working Temperature		Topr	-55 to + 110	
Deposit Temperature		T_{stg}	-55 to + 125	
*2 Soldering Temperature		T_{sol}	260	

Notes

*1 AC for 1 minute, R.H.= 40 ~ 60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.

* 2 For 10 seconds

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Parameter		Symbol	Condition	Min	Typ.*	Max	Unit
Input		V_F	I_F=50mA	---	1.25	1.6	V
		I_R	V_R=4V	---	---	10	μA
		C_t	V=0, f=1MHz	---	50	---	pF
Output		I_{CEO}	V_{CE}=20V, I_F=0mA	---	10	100	nA
		BV_{CEO}	I_C=1mA I_F=0mA	80	---	---	V
		BV_{ECO}	I_E=0.1mA I_F=0mA	7	---	---	V
Transforming Characteristics		CTR	IF=5mA VCE=5V	50	---	600	%
		I_C		2.5	---	30	mA
		$V_{CE(sat)}$	I_F=10mA I_C= 1mA	---	---	0.3	V
		R_{iso}	DC500V 40~60%R.H.	10^{12}	---	---	Ω
		C_f	V=0, f=1MHz	---	0.3	---	pF
		t_r	V_{CC}=5V, I_C=2mA R_L=100Ω	---	3	18	μs
		t_f		---	4.7	18	μs

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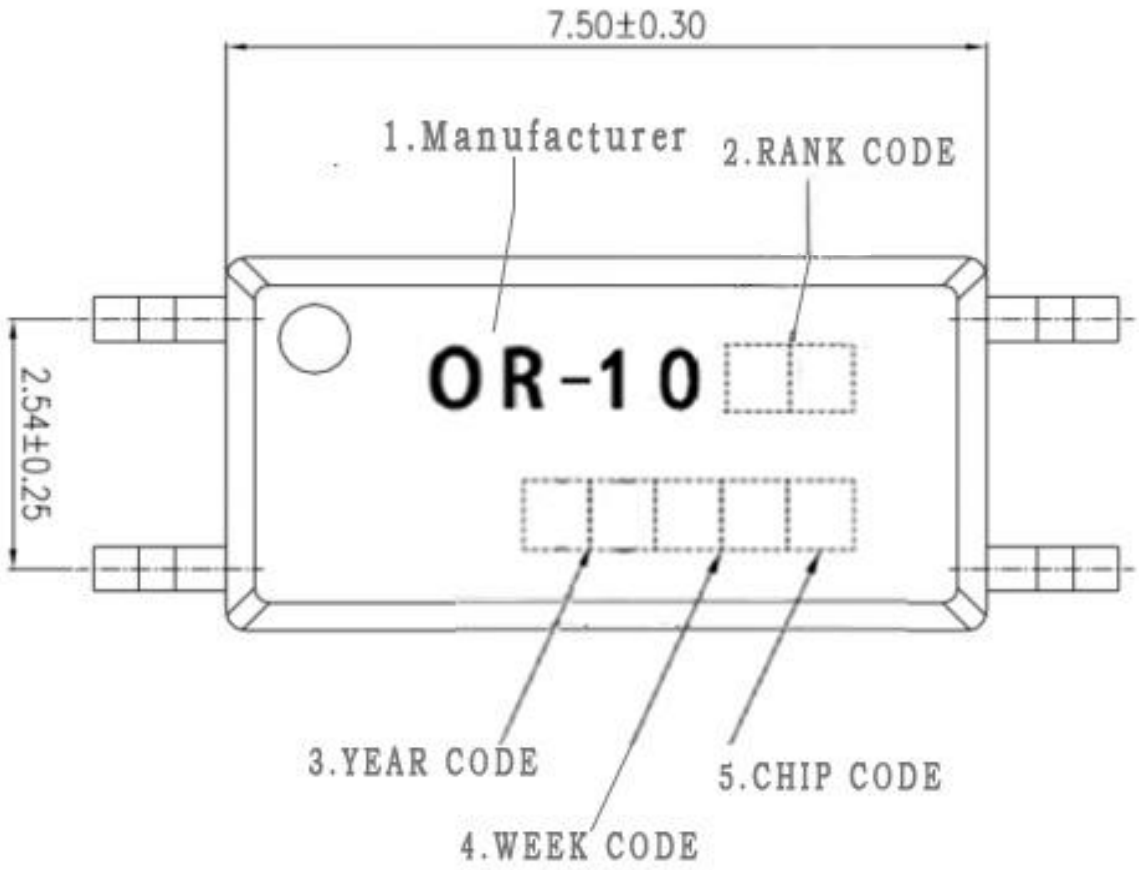
7.50±0.30
1.Manufacturer
2.RANK CODE
OR-10
2.54±0.25
3.YEAR CODE
4.WEEK CODE
5.CHIP CODE

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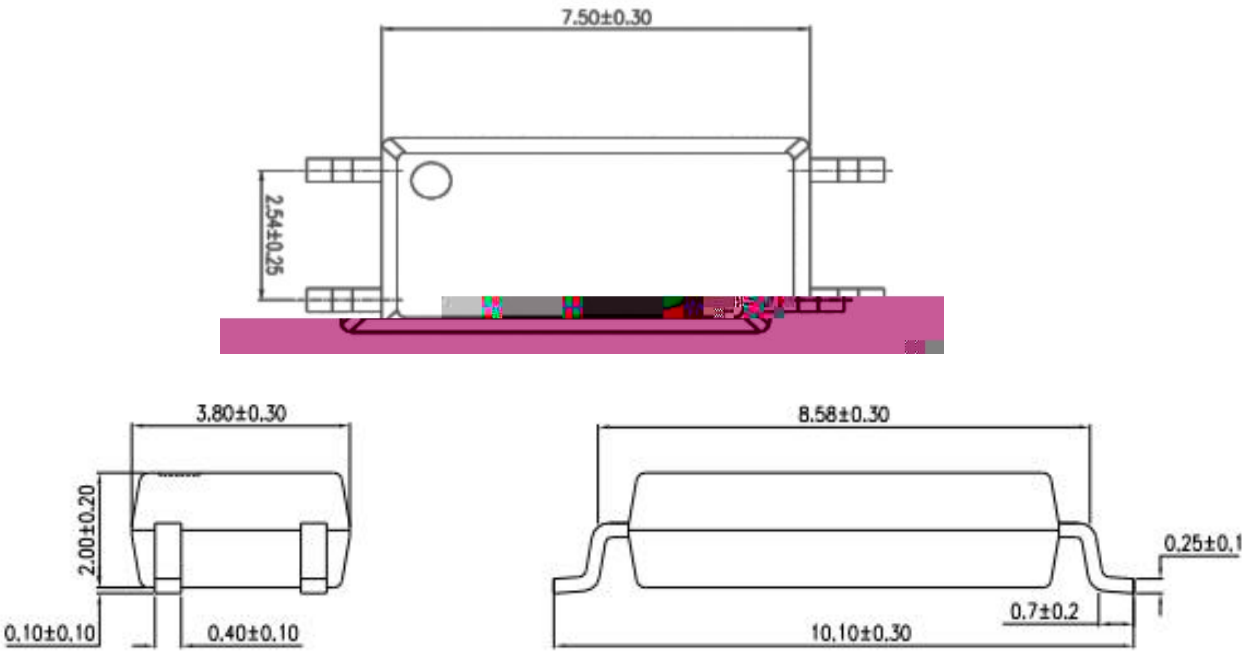
7.50±0.30
2.54±0.25
3.80±0.30
2.00±0.20
0.10±0.10
0.40±0.10
8.58±0.30
0.25±0.1
0.7±0.2
10.10±0.30

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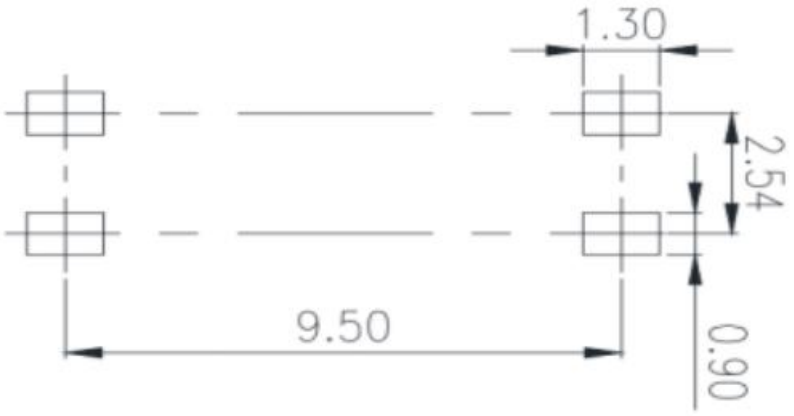
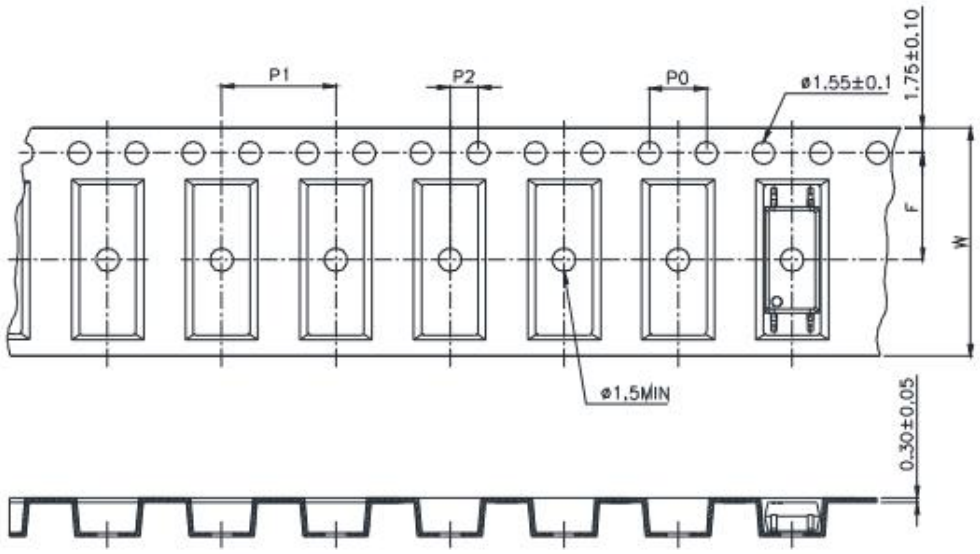
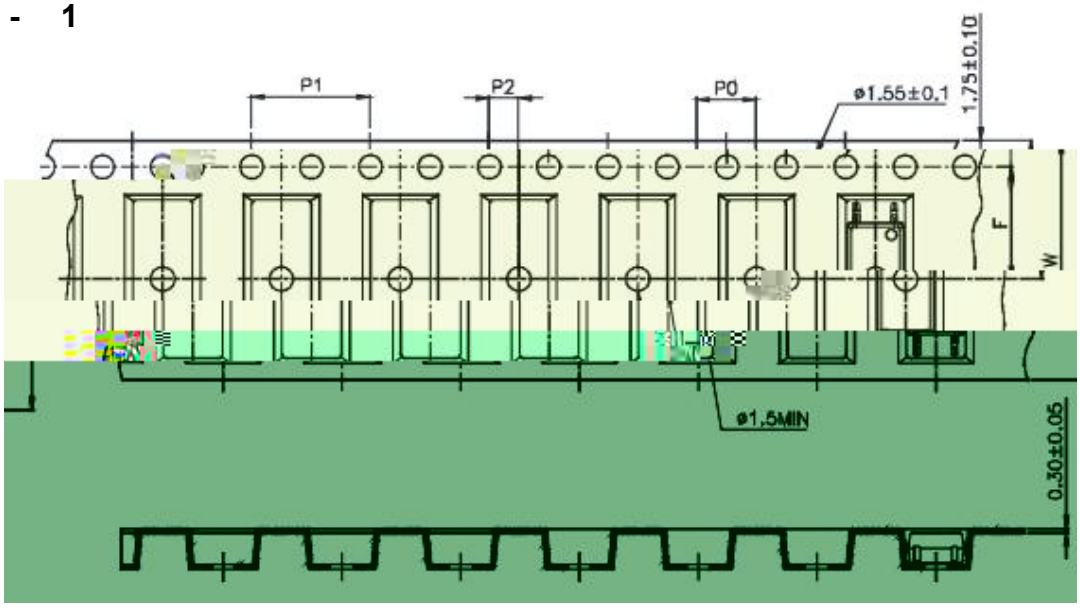

1.30
2.54
9.50
0.90

10.

(1) -10 -

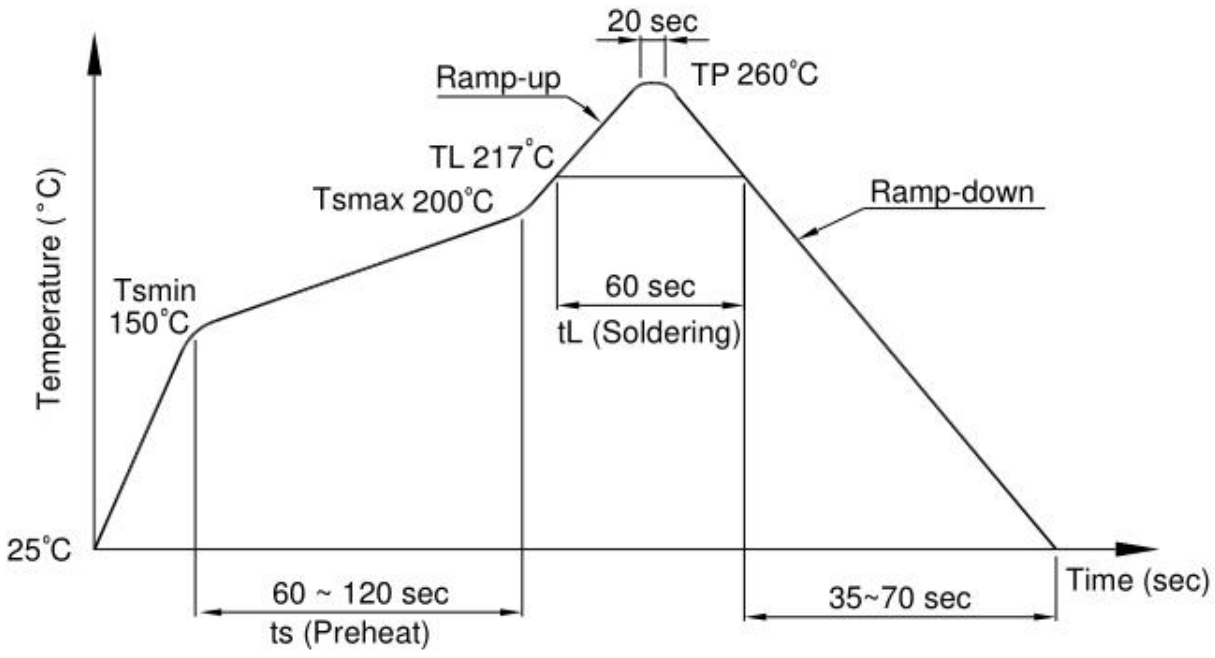

P1
P2
P0
ø1.55±0.1
1.75±0.10
F
W
ø1.5MIN
0.30±0.05

(2) -10 - 1


P1
P2
P0
ø1.55±0.1
1.75±0.10
F
W
ø1.5MIN
0.30±0.05

11.

(1). (- -020)


20 sec
Ramp-up
TP 260°C
TL 217°C
Tsmax 200°C
Ramp-down
Tsmin
150°C
60 sec
tL (Soldering)
Temperature (°C)
25°C
60 ~ 120 sec
ts (Preheat)
35~70 sec
Time (sec)

12.

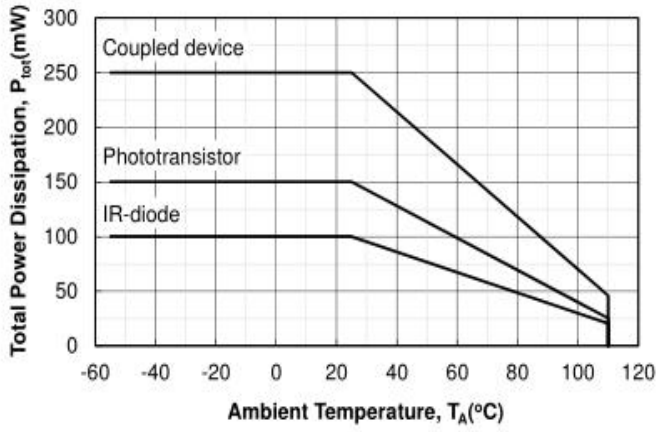


Figure 1. P_{tot} vs. T_A

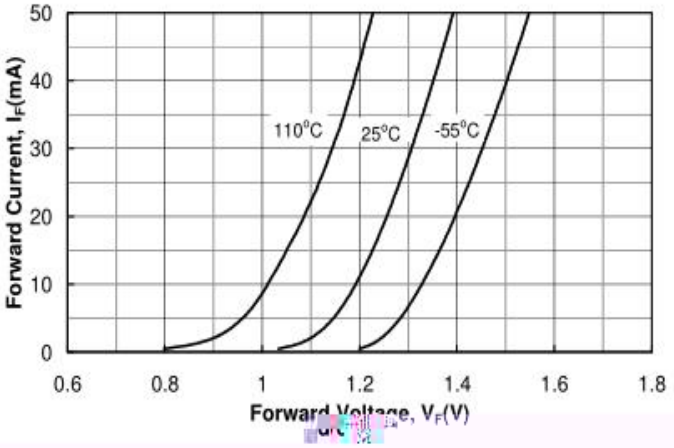
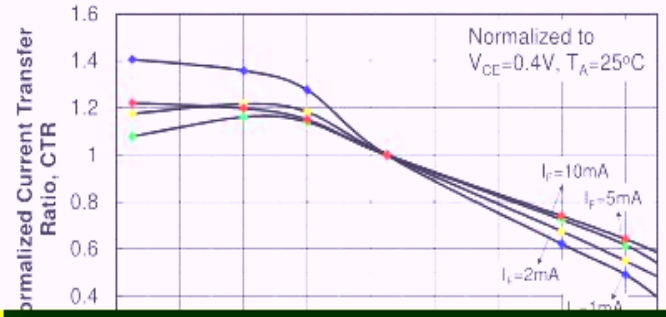
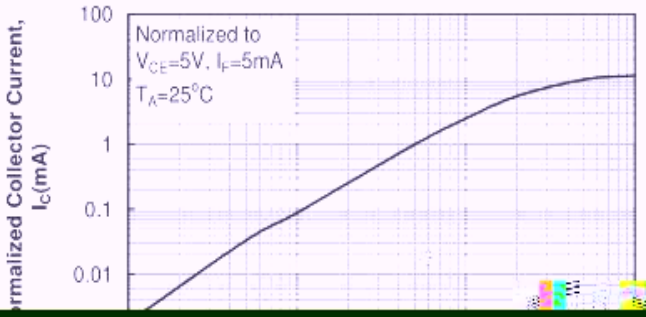


Figure 4. I_F vs. V_F





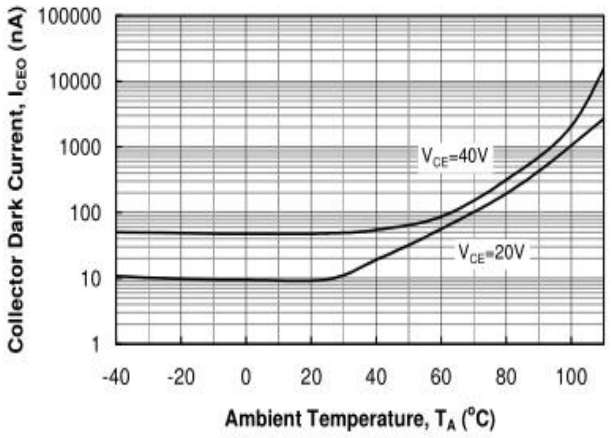


Figure 7. I_{CEO} vs. T_A

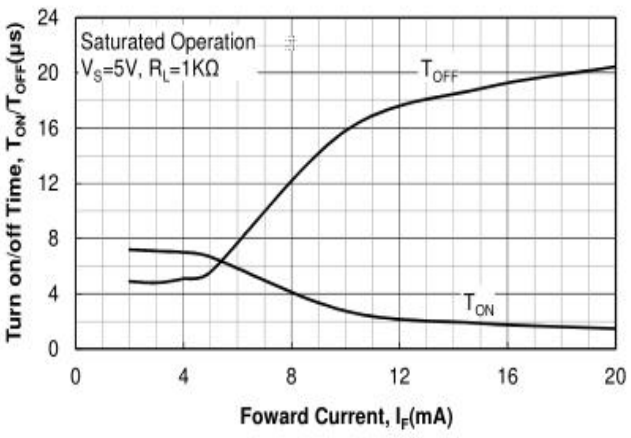


Figure 10. T_{ON} / T_{OFF} vs. I_F

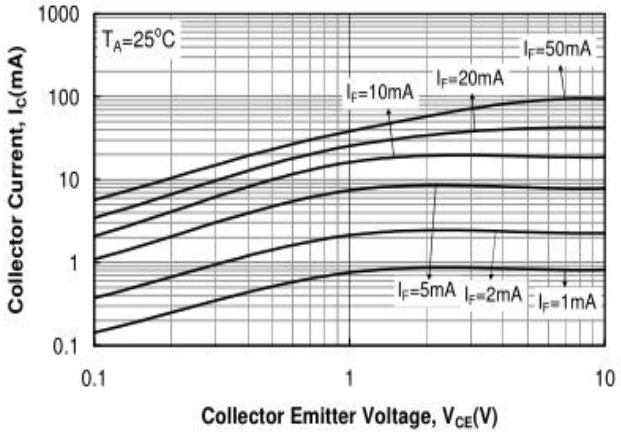


Figure 8. I_C vs. V_{CE}

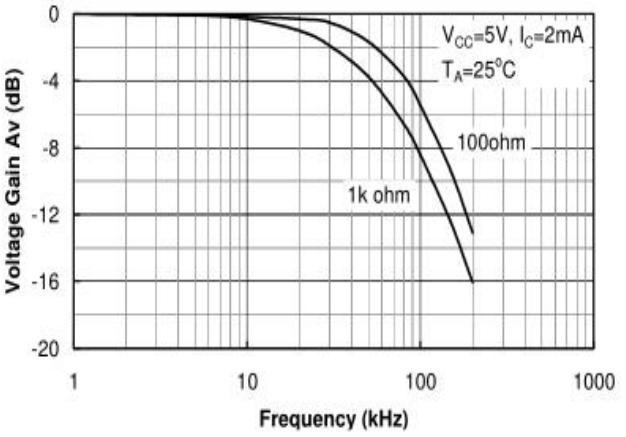


Figure 11. Frequency Response

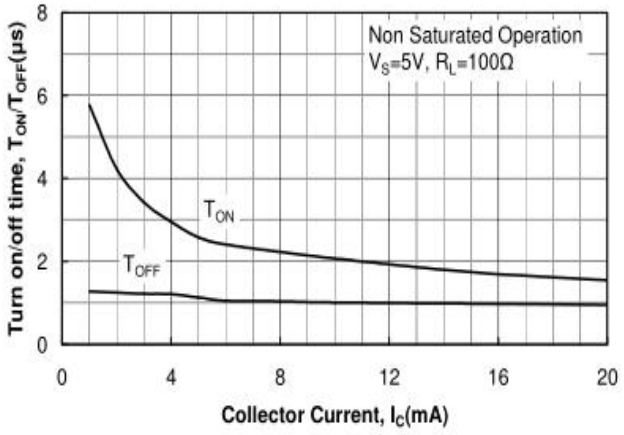


Figure 9. T_{ON} / T_{OFF} vs. I_C