J2200A Optocoupler CTR Measurement Kit

For 4-Pin/6-Pin Optocouplers Only. Applications: Circuit Design, Classification, IQC

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FEATURE

Used for CTR, ΔCTR, VF, & ΔRd Measurements

By providing measurements of CTR, ΔCTR, VF, & ΔRd, the J2200A allows you to gain a greater understanding of the DUT you are using. This includes factors such as its saturation and operating bandwidth, which are important for optimizing your circuit and meeting power consumption requirements.

USAGE 1 — Used as A Circuit Design Tool

Engineers can quickly and easily assess performance characteristics, such as isolated power circuit design, with the J2200A plug and play capabilities. This is a significant improvement over the past, when building an expensive test station and spending a lot of time tuning CTR values was necessary.
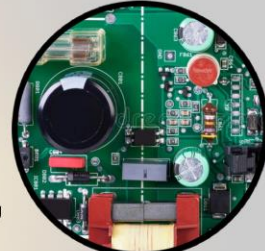
USAGE 2 — Used as An IQC Tester

Using the J2200A to inspect opto-couplers allows you to easily identify any parts that are fake or out-of-specification, even for large quantities of parts.

USAGE 3 — Used as A CTR Ranking Classifier

Effectively categorizing opto-couplers into groups using the J2200A will significantly aid in subsequent work. For example, the faster you can obtain CTR values, the more efficient the design process will be.

IQC

1mA 5V
CTR
121%   89%

EASY WIRING & CONTROL

To connect the J2200A to the M352XA, a USB Type-C cable is required. The M352XA digital multimeter is currently equipped with a user-friendly graphical interface, making it easy to operate. However, if you require a custom graphical user interface on your desktop or equipment, SCPI commands can be utilized.

CTR(f) & Rd(f) MEASUREMENTS

To measure the CTR(f) and Rd(f) over frequency of an opto-coupler, the J2200A & M352XA need to work with a Frequency Response Analyzer .
(The FRA feature must be enabled on the J2200A.)

OSC IN
CH1/IC
CH2/IF

OSC OUT
CH1
CH2

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Specifications

1. Output Rating - Continue I$_F$ Mode

Item	Value
VCE[1]	15V (max)
I$_F$ (@1mA)	50µA ~ 12mA
I$_F$ (@10mA)	0.5mA ~ 12mA

2. Output Rating - Pulse I$_F$ Mode

Item	Value
VCE[1]	15V (max)
I$_F$ (@1mA)	50µA ~ 12mA
I$_F$ (@10mA)	0.5mA ~ 12mA
I$_F$[2] (@100mA)	5mA ~ 60mA

3. Output Rating - Ic

Item	Value
Ic (@1mA)	2.4mA (max)
Ic (@10mA)	24mA (max)
Ic[2] (@100mA)	72mA (max)

4. OSC Port

Item	Value
Input Impedance	50ohm
Bandwidth	>100kHz
Maximum Input Power	+18dbm
Modulator Gain(@1mA)	0.45mA/V
Modulator Gain(@10mA)	4.5mA/V
Modulator Gain(@100mA)	45mA/V

5. CH1, CH2

Item	Value
Output Impedance[3]	50ohm
Bandwidth	>100kHz

6. Programming Accuracy (Setting +Range)

Item	%
VCE(Setting+Range)	1%+50mV
I$_F$ (Setting+Range)	0.5%+0.5%

7. Read-Back Accuracy

Item	% (Setting +Range)	Item (Typical)	%
VCE	1%+50mV	CTR	2%
V$_F$	1%+50mV	△CTR	5%
Ic	1%+50mV	△Rd	10%
I$_F$	0.5%+0.5%		

8. General Specifications

Item	Description
Input Power Supply	5V/1A, 5VA, USB Type-C
Operating Temp.	20℃ ~ 40℃
Storage Temp.	-30℃ ~ 70℃
Size/Weight	123(L)x89(W)x55(H)mm/237g
Certificate	CE Compliant
Warranty	1-Year

1. The VCE value depends on the electrical characteristics of the DUT. It cannot be fixed via the instrument settings.
2. For Pulsed Mode only.
3. For optimal measurement accuracy, it is recommended to set the input impedance of the FRA input terminal to 1Mohm.
* The above specifications are subject to change without notice.

Example of CTR Demonstration

The figure below showed that the optocoupler's CTR and bandwidth were set up, and varied with the bias condition. Using an FRA, AC CTR can be tested over frequency.

F1. AC CTR via FRA

The flattness section of the AC CTR gained via an FRA can be measured through M352XA as well. We call it the equivalent △CTR.

F2. △CTR via M352XA
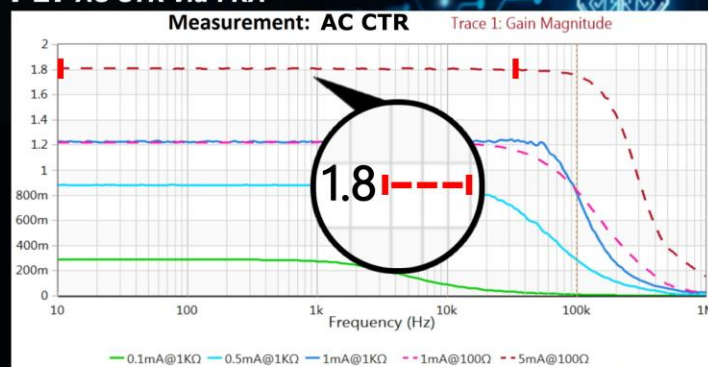
The *F1* example was made via the J2200A, M352XA, and the OMICRON Lab Bode 100 VNA.

The *F2* example was made via the J2200A and M352XA.