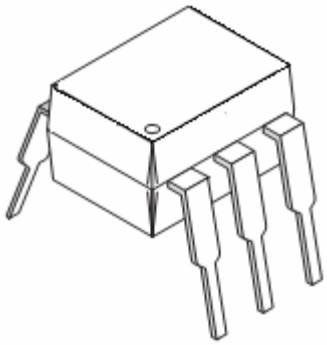
High Reliability Photo Coupler

Features

- High current transfer ratio
  (CTR: MIN.500% at IF=1mA, Vce=2V)
- High isolation voltage between input and output
  (Viso: 5000Vrms)
- Compact dual-in-line package



QRCTA16P

RoHS Compliant

Applications

- System appliances, measuring instruments
- Industrial robots
- Copies, automatic vending machines
- Signal transmission between circuits of different potentials and impedances
- Telephone sets
- Copiers, facsimiles
- Interface with various power supply circuits, power distribution boards
- Numerical control machines

Tel: (800)-247-2232 (800)-TAITRON (661)-257-6060
Fax: (800)-TAITFAX (800)-824-8329 (661)-257-6415

Absolute Maximum Ratings (Ta=25°C)

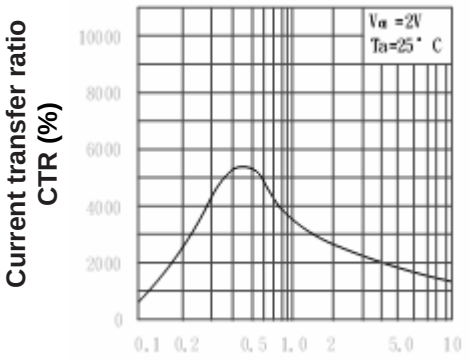
Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	A
	Power dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	30	V
	Collector-base voltage	V_{CBO}	30	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	150	mA
	Collector power dissipation	P_C	200	mW
Total power dissipation		P_{tot}	200	mW
Isolation voltage 1 minute		V_{iso}	5000	Vrms
Operating Temperature		T_{opr}	-55 ~ +115	°C
Storage Temperature		T_{stg}	-55 ~ +125	°C
Soldering temperature 10 second		T_{sol}	260	°C

Electro-Optical Characteristics (Ta=25°C)

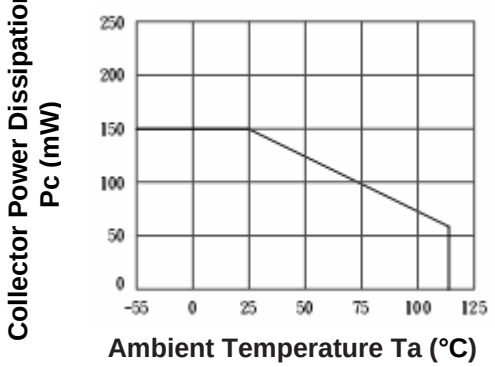
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	----	1.2	1.4	V	I_F =10mA
	Peak forward voltage	V_{FM}	----	----	3.5	V	I_{FM} =0.5A
	Reverse current	I_R	----	----	10	uA	V_R =4V
	Terminal capacitance	Ct	----	30	----	pF	V =0, f =1kHz
Output	Collector dark current	I_{CEO}	----	----	0.1	uA	V_{CE} =10V, I_F =0
Transfer Charactertics	Current transfer ratio	CTR	500	4000	----	%	I_F =1mA, V_{CE} =2V
	Collector-emitter saturation voltage	$V_{CE(sat)}$	----	----	1.0	V	I_F =8mA, I_C =2mA
	Isolation resistance	Riso	$5x10^{10}$	----	----	ohm	DC500V
	Floating capacitance	Cf	----	0.6	1.0	pF	V =0, f =1MHz
	Cut-off frequency	fC	----	7	----	kHz	V_{CC}=5V,I_C =2mA, RL=100ohm
	Response time (Rise)	tr	----	5	40	us	V_{CE}=10V,I_C =50mA RL=100ohm
	Response time (Fall)	tf	----	60	100	us	

Typical Electro-Optical Characteristics Curves

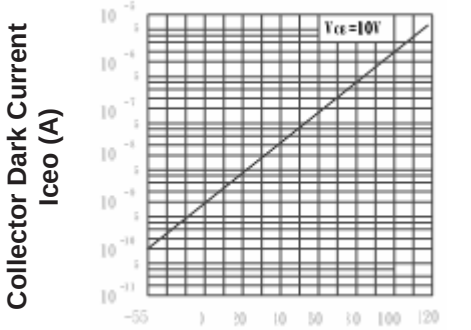
Flg.1 Current Transfer Ratio vs. Forward Current



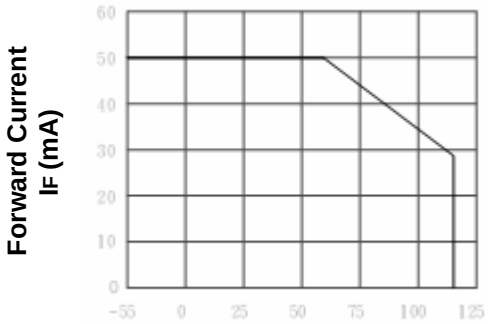
Flg.2 Collector Power Dissipation vs. Ambient Temperature



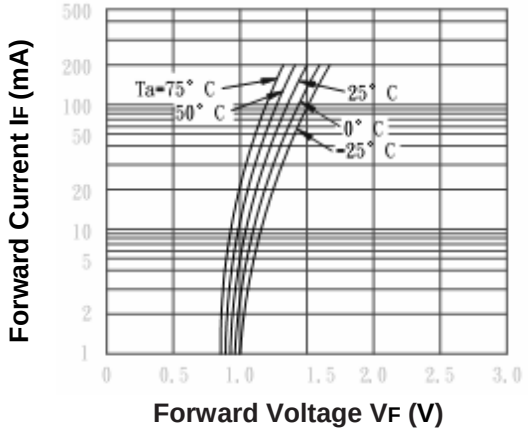
Flg.3 Collector Dark Current vs. Ambient Temperature



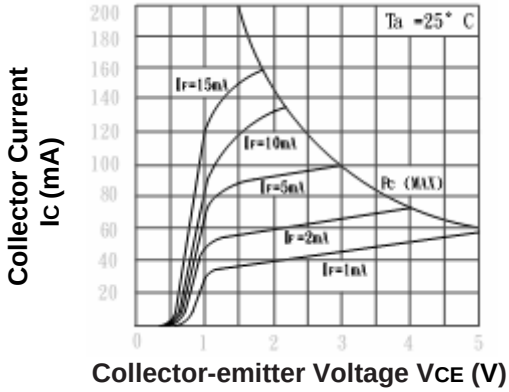
Flg.4 Forward Current vs. Ambient Temperature



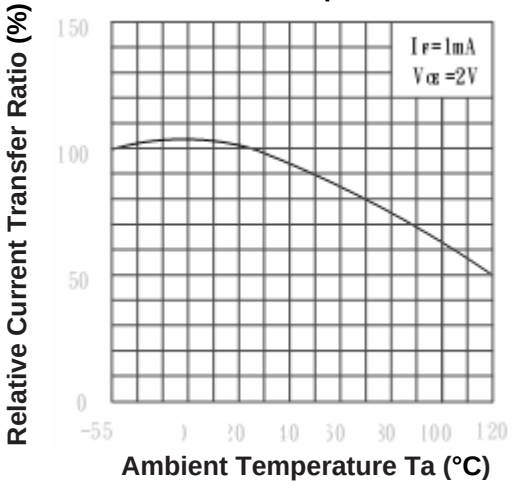
Flg.5 Forward Current vs. Forward Voltage



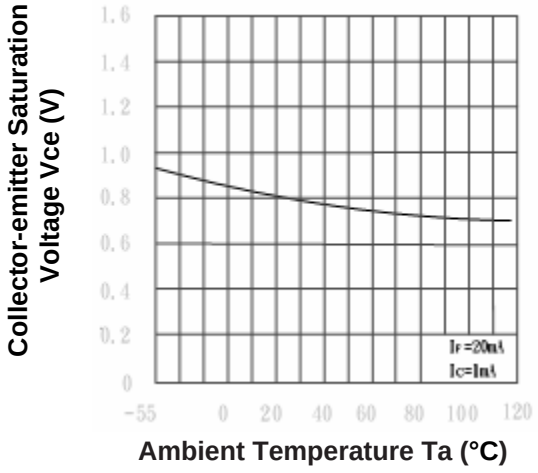
Flg.6 Collector Current vs. Collector Emitter Voltage



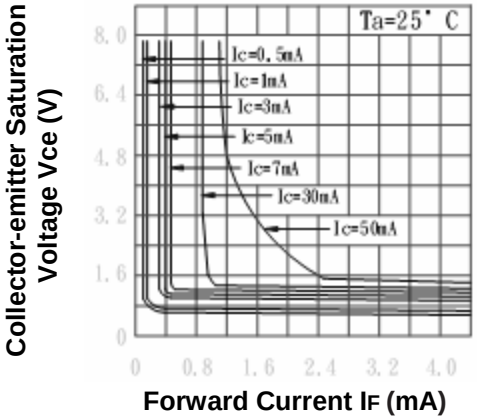
Flg.7 Relative Current Transfer Ratio vs. Ambient Temperature



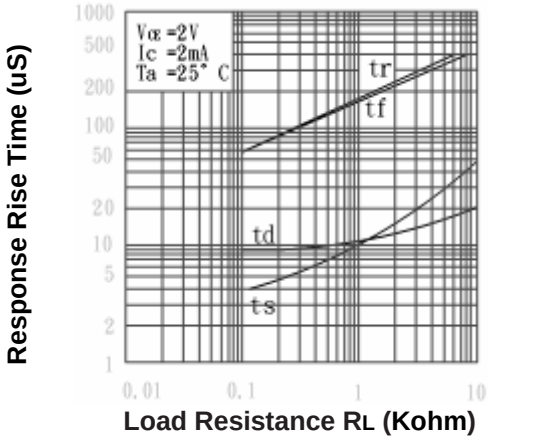
Flg.8 Collector-emitter Saturation Voltage vs. Ambient Temperature



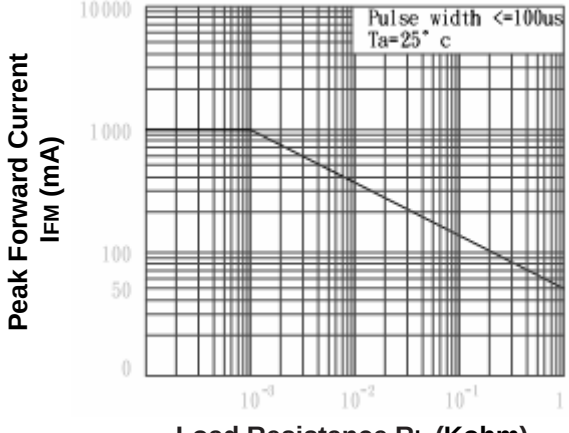
Flg.9 Collector-emitter Saturation Voltage vs. Forward Current



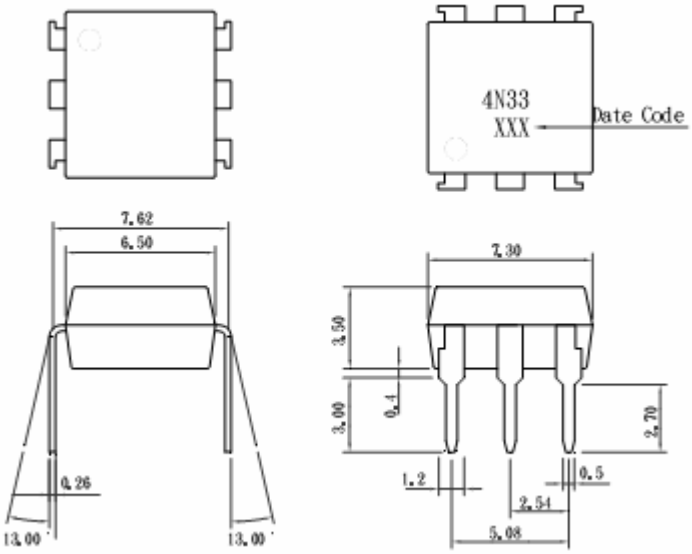
Flg.10 Response Time vs. Load Resistance



Flg.11 Peak Forward Current vs. Duty Ratio

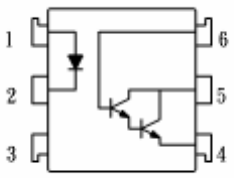


Package Dimensions (In mm)



Note: 1. Dimensions are in millimeters
2. Tolerances unless dimensions ± 0.2mm

Schematic: Top View



1. Anode
2. Cathode
3. NC
4. Emitter
5. Collector
6. Base

How to contact us

US HEADQUARTERS
28040 WEST HARRISON PARKWAY, VALENCIA, CA 91355-4162
Tel: (800) TAITRON (800) 247-2232 (661) 257-6060
Fax: (800) TAITFAX (800) 824-8329 (661) 257-6415
Email: taitron@taitroncomponents.com
Http://www.taitroncomponents.com

TAITRON COMPONENTS MEXICO, S.A .DE C.V.
BOULEVARD CENTRAL 5000 INTERIOR 5 PARQUE INDUSTRIAL ATITALAQUIA, HIDALGO
C.P. 42970 MEXICO
Tel: +52-55-5560-1519
Fax: +52-55-5560-2190

TAITRON COMPONETS INCORPORATED E REPRESENTAÇÕES DO BRASIL LTDA
RUA DOMINGOS DE MORAIS, 2777, 2.ANDAR, SALA 24 SAÚDE - SÃO PAULO-SP 04035-001
BRAZIL
Tel: +55-11-5574-7949
Fax: +55-11-5572-0052

TAITRON COMPONETS INCORPORATED, SHANGHAI REPRESENTATIVE OFFICE
CROSS REGION PLAZA, 899 LINGLING ROAD, SUITE 18C, SHANGHAI, 200030, CHINA
Tel: +86-21-54249942
Fax: +86-21-5424-9931