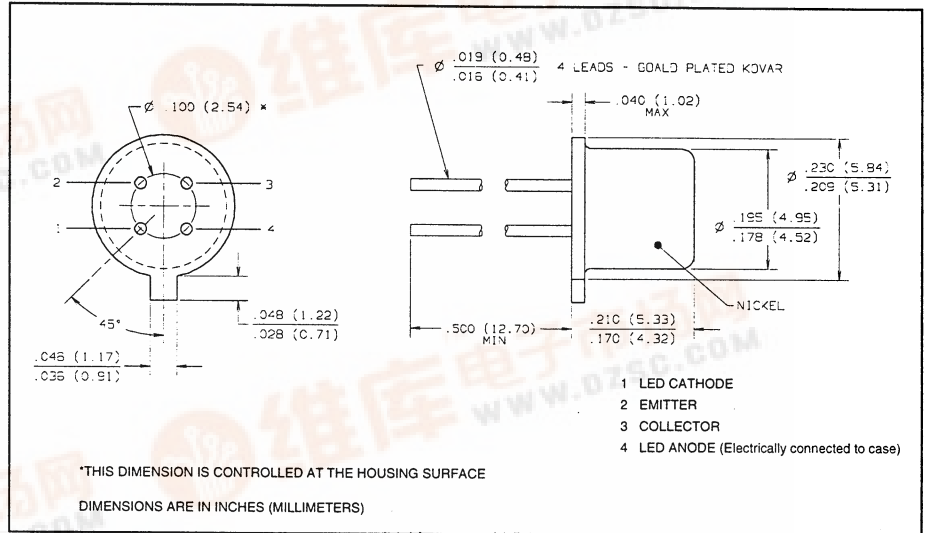
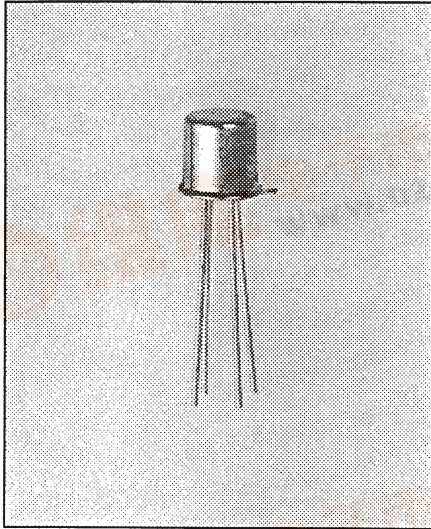


Product Bulletin 3C92C
September 1996

Optically Coupled Isolator Type 3C92C, 3C92CHR, 3C92CTX, 3C92CTXV



Features

- TO-72 hermetic package
- 1 kVDC electrical isolation
- High current transfer ratio

Description

The 3C92C is an optically coupled isolator consisting of an infrared emitting diode and an NPN silicon phototransistor mounted in a hermetically sealed TO-72 package.

Typical screening and lot acceptance tests are provided on page 13-4.

The 3C92CHR device has been 100% screened as a TXV device although Group B and C testing is not performed.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Input to Output Isolation Voltage	±1kVDC ⁽¹⁾
Operating Temperature Range	-55° C to +125° C
Storage Temperature Range	-65° C to +150° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case, 5 sec. with soldering iron]	240° C ⁽²⁾
Power Dissipation (Output Transistor)	200 mW ⁽³⁾
Power Dissipation (Input Diode)	60 mW ⁽⁴⁾

Notes:

- (1) Measured with input leads shorted together and output leads shorted together.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) Derate linearly 2.0 mW/° C above 25° C.
- (4) Derate linearly 0.60 mW/° C above 65° C.

Types 3C92C, 3C92CHR, 3C92CTX, 3C92CTXV

Electrical Characteristics ($T_A = 25^\circ \text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITION
Input Diode						
V _F	Forward Voltage			1.2	V	I _F = 2 mA
				1.5	V	I _F = 50 mA
V _R	Reverse Voltage	7			V	I _R = 0.1 mA
I _R	Reverse Current			1	μA	V _R = 3 V
C _{IN}	Diode Capacitance		25		pF	V = 0, f = 1 MHz
Phototransistor						
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	50			V	I _C = 10 mA
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	7			V	I _C = 10 μA
I _{CEO}	Collector-Emitter Leakage Current			10	nA	V _{CE} = 5 V
				50	nA	V _{CE} = 50 V
Coupled						
I _{C(ON)}	On-State Collector Current	4.0		—	mA	I _F = 10 mA, V _{CE} = 5 V
		3.0		20	mA	I _F = 10 mA, V _{CE} = 0.4 V
V _{CE(SAT)}	Collector-Emitter Saturation Voltage			0.4	V	I _F = 50 mA, I _C = 10 mA
t _{on}	Turn on Time			9	μs	V _{CC} = 5 V, I _C = 2 mA, R _L = 100 Ω
t _{off}	Turn off Time			6	μs	
C _{IO}	Input-to-Output Capacitance		2	2.5	pF	f = 1 MHz
R _{IO}	Isolation Resistance	10 ⁹			Ω	V _{IO} = +1 kV