TELEDYNE RELAYS

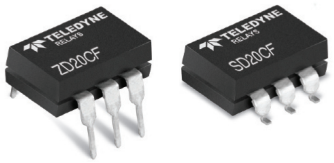
A Unit of Teledyne Electronics and Communications

ZD20CF Series

2A, 60 Vdc Optically Isolated Short-Circuit Protected

Part Number	Description
ZD20CF*	2A, 60 Vdc, short-circuit protected up to 33 Vdc, solid-state relay for through-hole mounting
SZD20CF*	2A, 60 Vdc, short-circuit protected up to 33 Vdc, solid-state relay for surface mount

*W for +25°C ambient; T for over-temperature screen



FEATURES/BENEFITS

- Short-circuit protected
- Overload protected
- 2 Amp load
- Low off-state leakage
- Optical isolation
- Compact 6-pin package

DESCRIPTION

ZD20CF Series Relays have optical isolation between relay input and output. Loads may be connected to either the positive or negative output terminals. ZD20CF Relays act as electronic circuit breakers that sense shorted loads or other overload events and then trip-off. Relay contacts open and no current flows through the relay and associated loads. These relays prevent overcurrent damage to the system. Cycling the relay on-off removes the tripped or latched-off condition and returns the relay to the normal operating state.

ELECTRICAL SPECIFICATIONS

(–55°C to +105°C ambient temperature unless otherwise specified)

INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Input Current	8	20	mA
Input Voltage @10mA	2	3	Vdc
Must Turn-On	8		mA
Must Turn-Off Current		100	µA
Must Turn-Off Voltage		0.8	Vdc
Reverse Polarity	–6		Vdc

OUTPUT (LOAD) SPECIFICATIONS

	Min	Max	Units
Load Voltage Range	0	60	Vdc
Output Current Rating (See Figure 5)		2.0	A
Leakage Current at Rated Voltage		10	µA
Transient Blocking Voltage @25°C		100	Vdc
Output Capacitance @25Vdc (25°C)		600	pF
Output Voltage Drop @2A		0.30	Vdc
On Resistance		0.15	Ohm
Turn-On Time		3.0	ms
Turn-Off Time		1.0	ms
Trip Overload	(See Figure 6)		A
Short Circuit Protection		33	Vdc
Operating Frequency		10	Hz

GENERAL SPECIFICATIONS

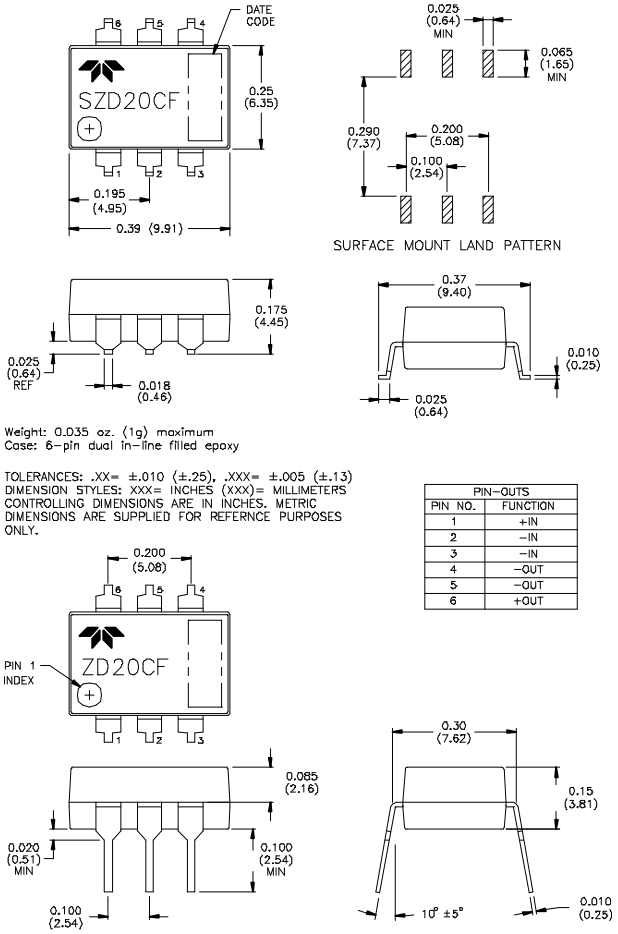
(+25°C ambient temperature unless otherwise specified)

ENVIRONMENTAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	–55	+105	°C
Storage Temperature	–55	+125	°C
Junction Temperature @2A		+125	°C
Thermal Resistance θ_{JA}		+120	°C/W
Dielectric Strength	1000		Vac
Insulation Resistance (@500 Vdc)	10^9		Ohm
Input to Output Capacitance		5	pF

Shock	MIL-STD-202, method 213, cond. F, 1500g
Vibration	MIL-STD-202, method 204, cond. F, 100g
Resistance to Soldering Heat	MIL STD 202, method 210
Solderability	MIL STD 202, method 208
Thermal Shock	MIL STD 202, method 107

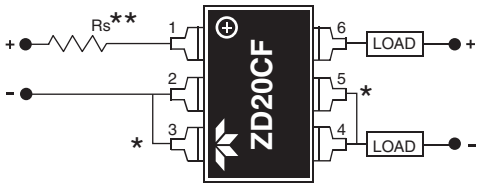
MECHANICAL SPECIFICATIONS



PIN-OUTS	
PIN NO.	FUNCTION
1	+IN
2	–IN
3	–IN
4	–OUT
5	–OUT
6	+OUT

Figure 1

TYPICAL WIRING DIAGRAM



*Shorted internally
**Series resistor required to limit input current to 20mA maximum

Figure 2

CONTROL CURRENT VS. INPUT VOLTAGE

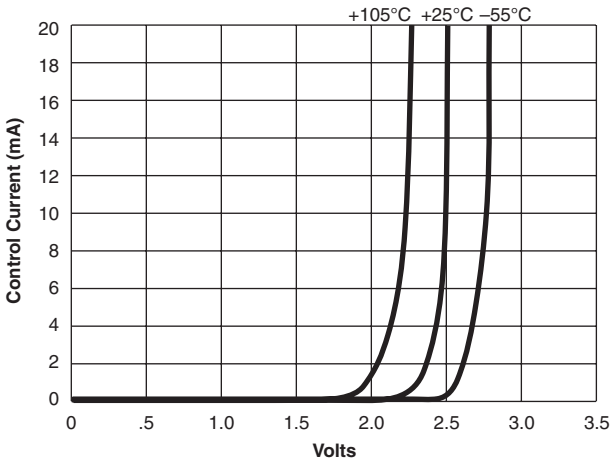


Figure 3

TYPICAL TURN-ON TIME VS. INPUT CURRENT

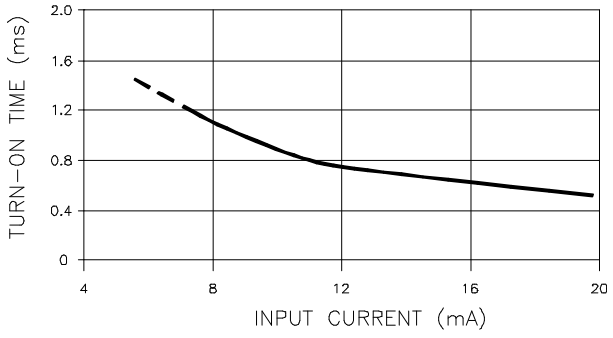


Figure 4

LOAD CURRENT VS. AMBIENT TEMPERATURE

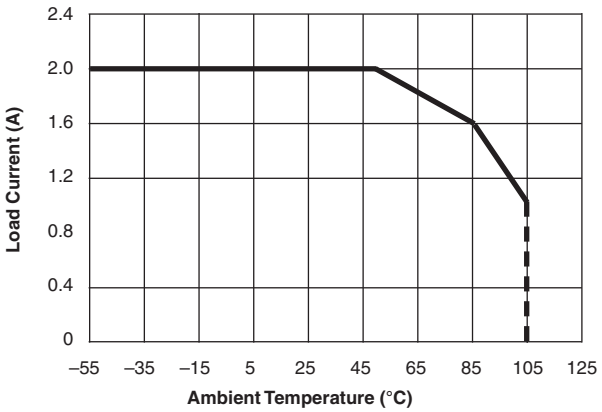


Figure 5