

Optoelectronic protection integrated circuit against overcurrents CL356

Peculiarities:

- posistor electronic analogue;
- high linearity of resistance;
- operating time < 1 ms;
- on-state resistance < 70 Ohm;
- on-state saturation current 70...90 mA;
- temperature range from -10 °C to 60 °C;
- size 6x10x4 mm.

Application:

- telephone lines' protection against mains voltage ~ 220 V;
- modems' protection;
- input circuits' protection of measuring devices.

Description:

The integrated circuit (IC) is constructed according to the optoelectronic relay with MOS-transistor output and with built-in channel. On-state IC current – voltage characteristic at voltages below U_{ON} is given in the picture 1. IC limits the amplitude current at the level I_{lim} . If the supplied emergency alternating voltage is higher than U_{ON} , then IC goes to the off-state, how it is shown in the picture 2. After killing of emergency voltage the IC returns to the on-state. The device construction is optimized for wire communication equipment protection against dangerous currents, when mains voltage ~ 220 V penetrates into communications channels.

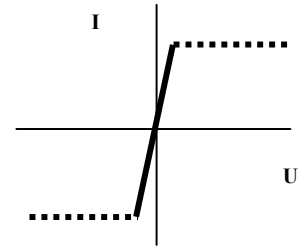
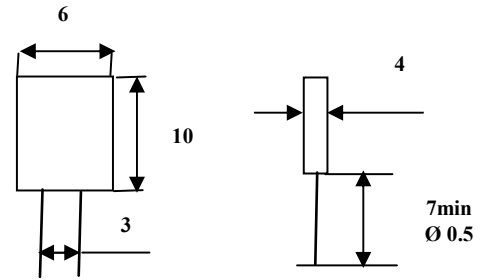


Рис. 1

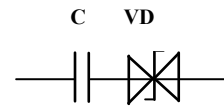


Рис. 2

ELECTRICAL PARAMETERS ($T_{amb} = 25$ °C)

Parameter name	Sign	Unit	Value			Measurement mode
			Min.	Typ.	Max.	
On-state Resistance	R	Ohm		60	70	$I = \pm 1$ mA
On-state Limitation Current	I_{lim}	mA	70		90	$U = \pm 5$ V, $t = 1$ sec.
Vrms ON	Urms	V	15		30	$f = 50$ Hz
Switching-on time	t_{ON}	ms			1.0	$U = \sim 220$ V, $R_l = 1$ kOhm
Restoring time	$t_{res.}$	ms		25		
Equivalent Capacitance in OFF condition	C	nF		22		
Stabilized Voltage of equivalent Zener diode VD	Ust.	V		15		$I = \pm 1$ mA
Thermal Resistance chip - environment	Rt	°C/W			300	

PERMISSIBLE OPERATING CONDITIONS

Condition parameters	Units	Min.	Max.	Note
Breakdown Voltage	V	-350	350	$T_{amb} = 25$ °C
On-state Irms	mA	-50	50	$T_{amb} = 25$ °C
Dissipated Power	mW		175 450	$T_{amb} = 25$ °C $T_{amb} = 25$ °C, $t = 1$ sec.
Chip Temperature	°C		100	
Operating Temperature Range	°C	-10	85	