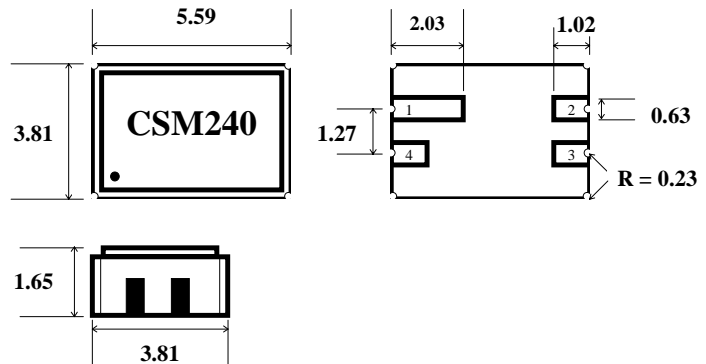


CSM 240

Small Outline Surface Mount Optically Coupled Isolator



Isocom Ltd supplies high reliability devices for applications requiring an operating temperature range of -55°C to $+125^{\circ}\text{C}$ (e.g. military applications).

Devices supplied are approved to BS9400, and have completed rigorous testing. Various high reliability test options are offered.

As a manufacturer of high reliability optocouplers, the Isocom Ltd manufacturing plant in the North East of England has site approval to BS9000 (registration number 1294/M) and CECC20000 (registration number M/1084/CECC/UK) issued by the British Standards Institution.

Together with CECC, BS9000 is a preferred standard for use in European military projects. Consequently, Isocom Ltd's approved devices are listed in the CECC "MUAHAG" preferred products list.

The BS9000 approval is also recognised as meeting the equivalent criteria to those required by BS5750/ISO9000/EN29000.

The Company's customers can be assured of our commitment to stringent quality, reliability and inspection standards, as demonstrated by our existing approvals. Other customer specific options can also be offered.

Features	Applications	
Hermetically sealed 4 pad leadless chip carrier	High density surface mount assembly	
High Radiance LED	Military high reliability. systems	
Silicon phototransistor	Switch mode power supplies	
Suitable for hybrid sub assembly mounting	Medical instruments	
High radiation immunity	System test equipment	
Low input current	Signal transmission between circuit of different potential and impedance	

Description

The CSM240 is a single channel device in a small outline package suitable for mounting in surface mount assemblies, it is an optically coupled isolator consisting of a Gallium Arsenide infra-red emitting diode and a silicon phototransistor package in a hermetically sealed 4 pin ceramic package offering extended operating temperature range.

Absolute Maximum Ratings

Storage temperature	.....	-65°C to +150°C
Operating temperature	.....	-55°C to +125°C
Input-to-output isolation voltage	.....	±1500V DC

Input Diode

Forward DC current	.....	40mA
Reverse DC voltage	.....	2V
Power Dissipation	.....	60mW

Output Transistor

Collector-emitter voltage BV_{CEO}	.....	30V
Emitter-collector voltage BV_{ECO}	.....	5V
Collector current	.....	50mA
Power Dissipation	.....	300mW
(derate linearly above 25°C at 3.0mW/°C)		

Electrical Characteristics $(T_A = -55$ to 125°C U.O.S) *All typical values at $T_A = 25^\circ\text{C}$

parameter	symbol	Test Conditions	min	*typ	max	Units
Input Diode						
Forward voltage	V_F	$I_F=10\text{mA}$	0.8		1.3	V
		$I_F=10\text{mA}$ $T_A=125^\circ\text{C}$	0.7		1.2	
		$I_F=10\text{mA}$ $T_A=-55^\circ\text{C}$	1.0		1.5	
Reverse Current	I_R	$V_R = 2.0\text{V}$			100	μA
Output Phototransistor						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1\text{mA}$, $I_F = 0$	30		-	V
Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E = 100\mu\text{A}$, $I_F = 0$	5.0			V
Collector-Emitter Dark current	$I_{C(off)}$	$V_{CE}=20\text{V}$, $I_F=0$			100	nA
		$V_{CE}=20\text{V}$, $I_F=0$, $T_A = 100^\circ\text{C}$			100	nA
Coupled						
On state Collector Current	$I_{C(on)}$	$V_{CE} = 5.0\text{V}$, $I_F = 2.0\text{mA}$	0.15			mA
		$V_{CE} = 5.0\text{V}$, $I_F = 10.0\text{mA}$	2.5	6.0		mA
		$V_{CE} = 5.0\text{V}$, $I_F = 10.0\text{mA}$, $T_A = -55^\circ\text{C}$	1.0			mA
		$V_{CE} = 5.0\text{V}$, $I_F = 10.0\text{mA}$, $T_A = 100^\circ\text{C}$	1.0			mA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5\text{mA}$, $I_F = 20.0\text{mA}$			0.3	V
Resistance (input to output)	R_{I-O}	$V_{i-o} = \pm 1000\text{Vdc}$	10^{11}			Ω
Capacitance (input to output)	C_{I-O}	$V_{i-o} = 0.0\text{V}$, $F = 1.0\text{MHz}$			5.0	pF
Output Rise Time	t_r	$V_{CC} = 10.0\text{V}$, $I_F = 10.0\text{mA}$			15.0	μs
Output Fall Time	t_f	$V_{CC} = 10.0\text{V}$, $I_F = 10.0\text{mA}$			20.0	μs

Isocom Ltd reserves the right to change the details on this specification without notice. Please consult Isocom Ltd prior to use. Isocom Ltd cannot accept liability for any errors or omissions.

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