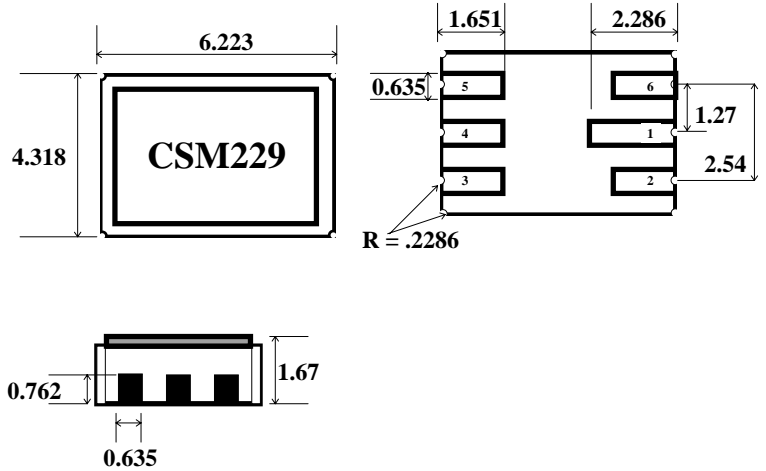


CSM229

Small Outline Surface Mount Darlington Output Optocoupler Device



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 6 pad leadless chip carrier	High density surface mount. assembly	
High Radiance LED	Military high rel. systems	
Silicon photodarlington	Switch mode power supplies	
Suitable for hybrid sub assembly	Medical instruments	
High radiation immunity compliance	System test equipment	
Low input current	Signal transmission between circuit of different potential and impedance	

Description

The CSM229 is a single channel device in a small outline package suitable for mounting in surface mount assemblies. The device incorporates a high radiance LED and NPN photodarlington transistors. The isolator operational parameters are guaranteed from -55°C to +125°C.

Absolute Maximum Ratings

Storage temperature	.....	-65°C to +150°C
Operating temperature	.....	-55°C to +125°C
Input-to-output isolation voltage	.....	±1000V DC

Input Diode

Forward DC current	.....	20mA
Reverse DC voltage	.....	5V

Output Detector

Collector Emitter Voltage V^{CEO}	.....	30V
Emitter Collector Voltage V^{ECO}	.....	5.0V
Collector Base Voltage V^{CBO}	.....	30V
Total Power Dissipation @ $T_A = 25^\circ\text{C}$	.....	150mW

ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise stated

Parameter	Symbol	Test conditions	Min	Typ	Max	Units
Input Diode						
Forward voltage	V_F	$I_F = 10 \text{ mA}$,		1.2	1.50	V
Reverse Leakage Current	I_R	$V_R = 3.0\text{V}$, $R_L = 1.0\text{M}\Omega$		0.005	100	μA
Capacitance	C	$V_R = 0\text{V}$, $f = 1.0\text{MHz}$		40		pF
Phototransistor						
Collector Emitter Dark Current	I_{CEO}	$V_{CE} = 10\text{V}$, Base Open		8.0	100	nA
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_E = 0$	50	110		V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}$, $I_B = 0$	30	75		V
Emitter Collector Breakdown Voltage	$V_{(BR)ECO}$	$I_E = 100\mu\text{A}$, $I_B = 0$	5.0	8.0		V
DC Current Gain	h_{fe}	$V_{CE} = 5.0\text{V}$, $I_C = 500\mu\text{A}$		15K		
Coupled						
Collector Output Current	I_C	$V_{CE} = 10\text{V}$, $I_F = 10\text{mA}$, $I_B = 0$ (A) (B) (C)	50 10 5.0	80 40		mA
Isolation Surge Voltage	V_{ISO}	60Hz AC peak 5 Seconds	1000			V
Isolation Resistance		$V = 500\text{V}$		10^{11}		Ω
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.0\text{mA}$, $I_F = 8.0\text{mA}$		0.8	1.0	V
Isolation Capacitance		$V = 0$, $f = 1.0\text{MHz}$		0.5		pF
Bandwidth		$I_C = 2.0\text{mA}$, $R_L = 100\Omega$		30		KHz
Switching Specification						
Turn on Time	t_{on}	$I_C = 50\text{mA}$, $I_F = 200\text{mA}$, $V_{CC} = 10\text{V}$		2.0	5.0	μS
Turn off Time	t_{off}	$I_C = 50\text{mA}$, $I_F = 200\text{mA}$, $V_{CC} = 10\text{V}$		25	40	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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