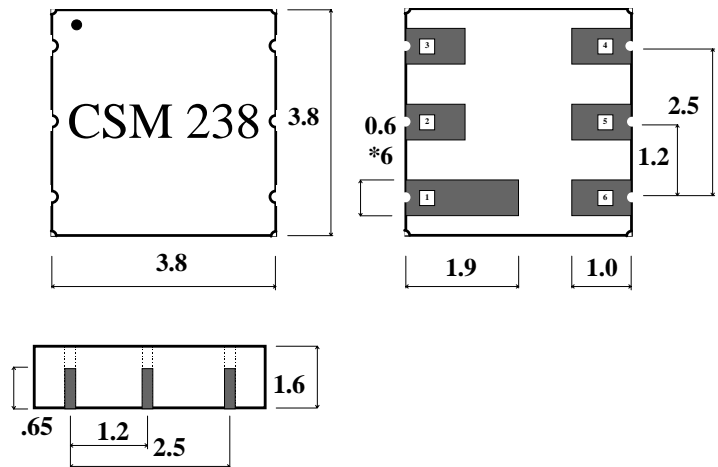


CSM 238

Small Outline Surface Mount Optocoupler Transistor Output 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/IS9000/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 assembly leadless chip carrier	High density surface mount	
High Radiance LED	Military high rel. 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 CSM238 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 silicon phototransistor. 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	.....	±500V DC

Input Diode

Forward DC current	.....	15mA
Reverse DC voltage	.....	5V
Peak forward current (t ≤ 10µs duration)	.....	1.5mA
Power Dissipation	.....	25mW

Output Transistor

Collector-emitter voltage BV_{CEO}	.....	30V
Emitter-collector voltage BV_{ECO}	.....	7V
Collector current	.....	20mA
Collector current (t = 1ms)	.....	100mA
Power Dissipation (derate linearly above 100°C at 1.4mW/°C)	.....	100mW

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
Forward voltage	V_F	$I_F=10\text{mA}$	0.7	1.18	1.4	V
		$I_F=10\text{mA}$ $T_A=125^\circ\text{C}$	0.7	1.10	1.2	V
		$I_F=10\text{mA}$ $T_A=-55^\circ\text{C}$	0.7	1.29	1.5	V
Reverse Current	I_R	$V_R=3.0\text{V}$	-	10		µA
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}$	50		-	V
Emitter-collector breakdown voltage	BV_{ECO}	$I_E=100\mu\text{A}$	7			V
Collector-emitter leakage current	I_{CEO}	$V_{CE}=20\text{V}$, $I_F=0$		6	100	nA
Collector-emitter leakage current	I_{CEO}	$V_{CE}=20\text{V}$, $I_F=0$, $T_A=125^\circ\text{C}$		8	100	nA
DC current transfer ratio	C.T.R	$I_F=10\text{mA}$, $V_{CE}=5\text{V}$	50		-	%
DC current transfer ratio	C.T.R	$I_F=10\text{mA}$, $V_{CE}=5\text{V}$, $T_A=125^\circ\text{C}$	25			%
DC current transfer ratio	C.T.R	$I_F=10\text{mA}$, $V_{CE}=5\text{V}$, $T_A=-55^\circ\text{C}$	35			%
Collector-emitter saturation voltage	$V_{CE}^{(SAT)}$	$I_F=10\text{mA}$, $I_C=2.5\text{mA}$			0.3	V
Input to output resistance	R_{VO}	$V_{VO}=500\text{V}$		10^{11}		
Isolation voltage	V_{VO}		1500			DC
Turn-on time	t_{on}	$R_L=1\text{K}\Omega$, $I_F=5\text{mA}$		7	15	µS
Turn-off time	t_{off}	$V_{CC}=5\text{V}$		21	45	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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