

FEATURES

- Package with integral 2-stage Peltier cooler
- 6 W max heat absorption power rating
- Integral temperature sensors
- Inert gas-filled for dry cooling
- CCD39-01, 39-02, 47, 57 or 67 compatible
- Thermally conductive Kovar base

INTRODUCTION

The CCD Peltier package is a combined 36-pin dual in-line package with integral solid-state thermoelectric cooler. Power to the cooler is via two high current feedthrough connectors at the end of the package. Heat sinking for the Peltier hot-face is by a Kovar base plate at the rear of the package along with four mounting lugs for mechanical fixing. Optional thermistors can provide on-chip temperature monitoring; these are included within the specific-to-type CCD ceramic insert.

CCD dark signal is reduced by the integral Peltier cooler which is sufficient for most applications with either inverted mode devices or normal mode devices when charge dithering effects are considered.

The Peltier cooler will give a temperature reduction of approximately 40 °C below ambient. Cooling from +20 to -20 °C will give a fifty-fold reduction in dark signal for a normal operation mode CCD.

The package is hermetically sealed and filled with low conductivity inert gas. It is supplied with an anti-reflection coated window.

GENERAL DATA

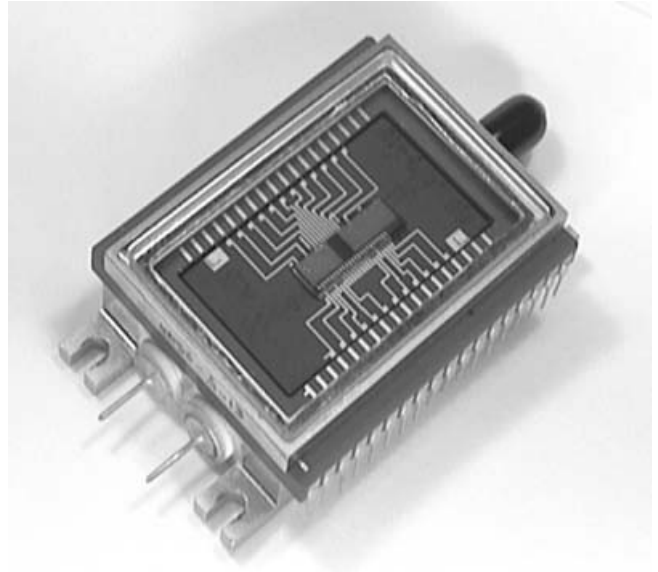
Format

Package body dimensions (L x W x H) . . . 47 x 38 x 16 mm

Package Maximum Ratings

Current	4.0	A
Voltage	3.8	V
Heat absorption*	6.0	W
Temperature range	-30 to +80 °C	
Storage range	-55 to +80 °C	

*This is the maximum amount of heat that can be absorbed at the cold face (occurs at $I = I_{max}, \Delta T = 0$).



Window Details

Glass type**	BK7 Borosilicate Grade A
A/R coat (both sides)	450 to 1100 nm
Reflectance	<2.6 %
Temperature range	-30 to +80 °C
Storage range	-55 to +80 °C
Thickness	2.5 mm
Dimensions	29 x 44 mm

** Also available with quartz window and A/R coat centralised at 350 nm.

Mechanical

Weight (including CCD) <125 g

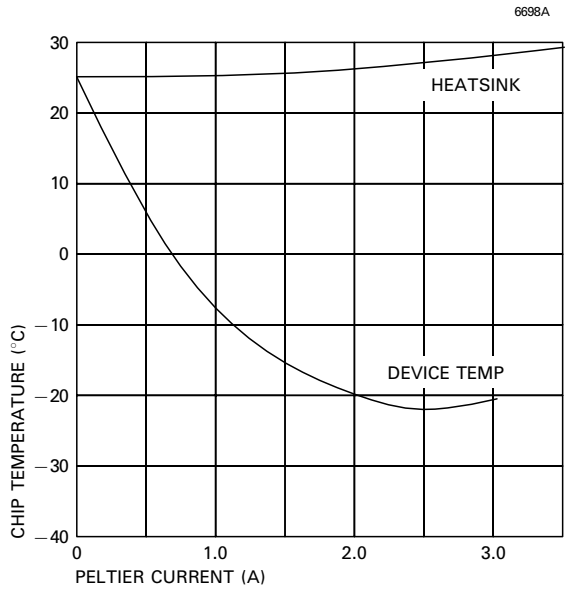
PELTIER PACKAGE PIN-OUT FOR CCDs

PACKAGE PIN No.	CCD39 FRONT ILLUMINATED		CCD39 BACK ILLUMINATED		CCD47, CCD57-10, CCD67-00
	39A (TYPE 01)	39B (TYPE 02)	39A (TYPE 01)	39B (TYPE 02)	
1	N/C	N/C	N/C	N/C	See note
2	N/C	N/C	N/C	N/C	See note
3	N/C	N/C	N/C	N/C	SS
4	OS1	OS5	OS4	OS4	ABD
5	SS	SS	SS	SS	IØ3
6	OS2	N/C	OS3	OS3	IØ2
7	ODL	ODL	ODR	OS2	IØ1
8	RDL	RDL	RDR	OS1	SS
9	OGL	OG	OGR	RDR	OG
10	OGR	RDR	OGL	OG	RDL
11	RDR	OS1	RDL	RDL	N/C
12	ODR	OS2	ODL	ODL	OSL
13	OS3	OS3	OS2	N/C	ODL
14	SS	SS	SS	SS	SS
15	OS4	OS4	OS1	OS5	ØRL
16	See note	See note	See note	See note	RØ3L
17	See note	See note	See note	See note	RØ2L
18	N/C	N/C	N/C	N/C	RØ1L
19	N/C	N/C	N/C	N/C	RØ1R
20	N/C	N/C	N/C	N/C	RØ2R
21	N/C	N/C	N/C	N/C	RØ3R
22	ØRR	ODR	ØRL	ØR	ØRR
23	IØ1	SØ1	SØ1	IØ1	SS
24	IØ2	SØ2	SØ2	IØ2	ODR
25	IØ3	SØ3	SØ3	IØ3	OSR
26	RØ2	RØ2	RØ1	RØ1	N/C
27	RØ3	RØ3	RØ3	RØ3	RDR
28	RØ1	RØ1	RØ2	RØ2	DG
29	SØ3	IØ3	IØ3	SØ3	SS
30	SØ2	IØ2	IØ2	SØ2	SØ1
31	SØ1	IØ1	IØ1	SØ1	SØ2
32	ØRL	ØR	ØRR	ODR	SØ3
33	SS	SS	SS	SS	ABG
34	See note	See note	See note	See note	SS
35	See note	See note	See note	See note	See note
36	N/C	N/C	N/C	N/C	See note

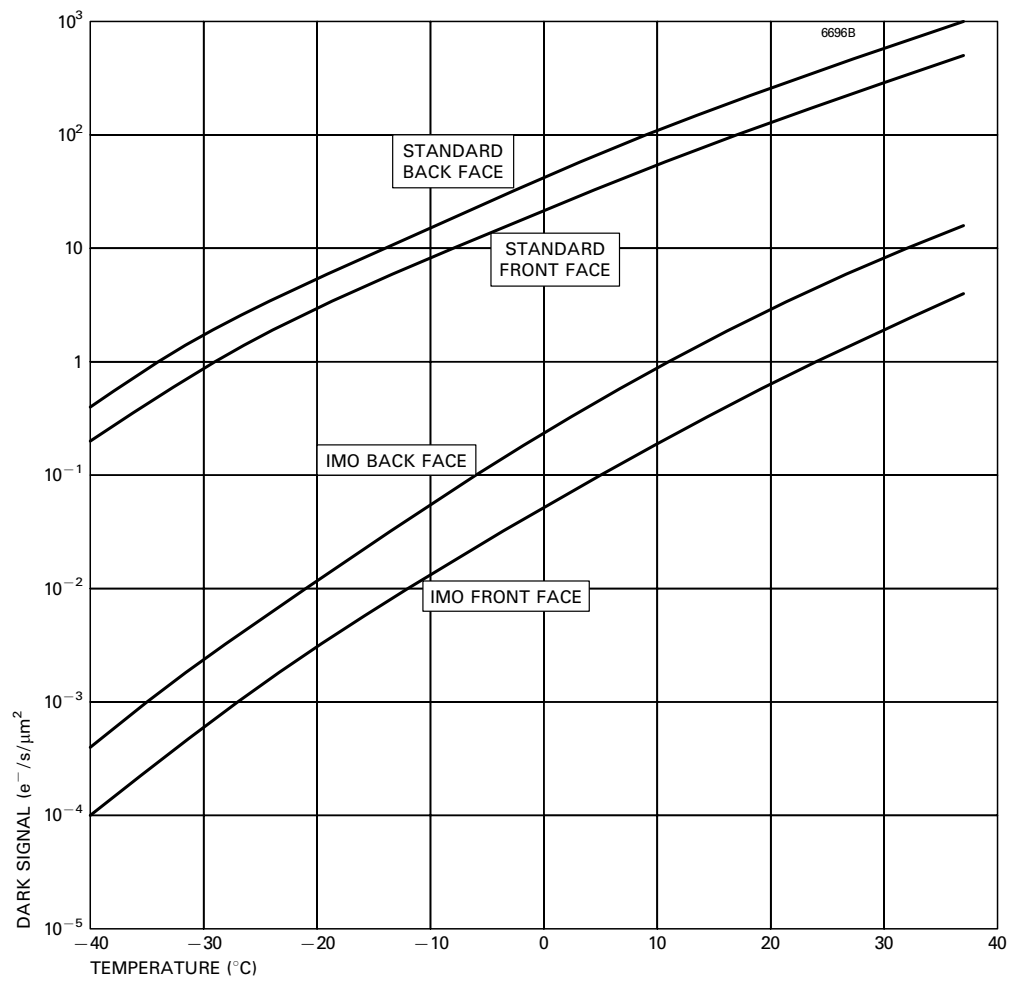
NOTE

Connection for the ceramic interface mounted thermistors. Fenwell Electronics type 196-302LAD-002 is used.

CCD 39 TEMPERATURE IN PACKAGE (Krypton filled cavity)



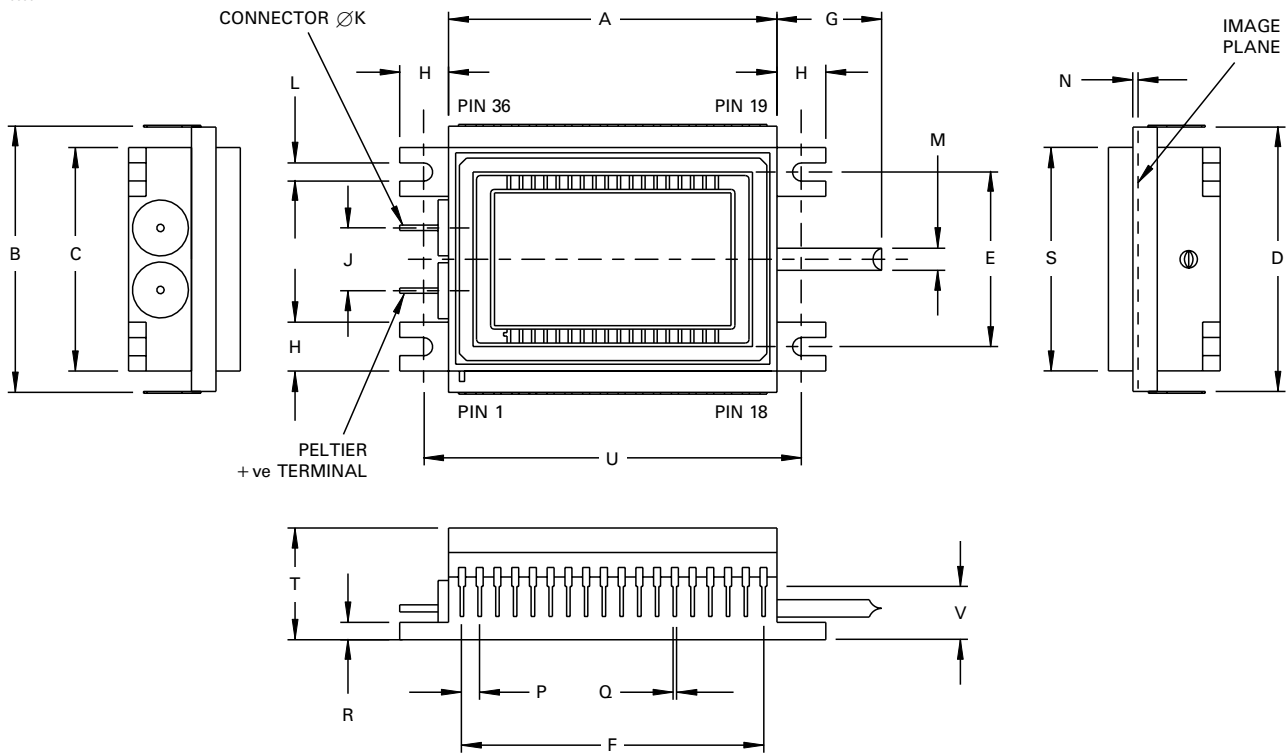
DARK SIGNAL -v- TEMPERATURE



OUTLINE

(All dimensions without limits are nominal)

6699B



Ref	Millimetres
A	47.00 ± 0.47
B	38.10 ± 0.38
C	32.00 ± 0.10
D	37.85 ± 0.10
E	25.00 ± 0.38
F	42.93 (18 leads equally spaced)
G	15.0 max
H	7.0 ± 0.1
J	9.0 ± 0.1
K	0.762
L	2.6 ± 0.1
M	Ø3.18 ± 0.10
N	0.75 ± 0.50
P	2.54 ± 0.10
Q	0.457
R	2.5 ± 0.1
S	32.0 ± 0.1
T	16.5 ± 0.5
U	54.0 ± 0.1
V	7.7 ± 0.1

Whilst e2v technologies has taken care to ensure the accuracy of the information contained herein it accepts no responsibility for the consequences of any use thereof and also reserves the right to change the specification of goods without notice. e2v technologies accepts no liability beyond that set out in its standard conditions of sale in respect of infringement of third party patents arising from the use of tubes or other devices in accordance with information contained herein.