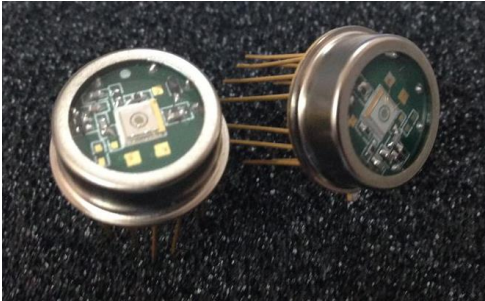


Silicon APD Preamplifier Module

OSH800AKM



Description

OSH800AKM is Silicon Avalanche Photodiode with a hybrid Preamplifier, in hermetically-sealed TO8 package.

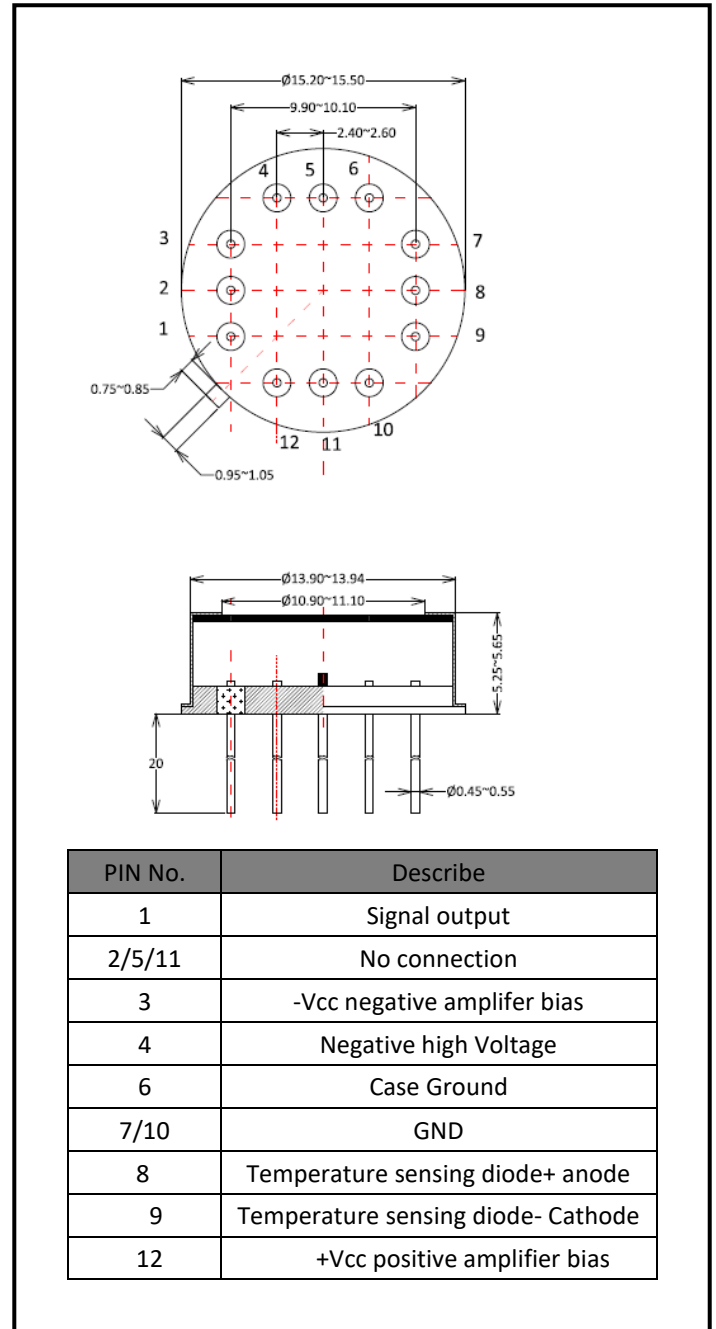
Custom versions with all other APD chip size, various gain, Bandwidth etc. are available on request.

Features

- * Low noise
- * High sensitivity
- * Fast response speed
- * High QE for 850-1064nm

Applications

- * Range finding
- * Lidar
- * Laser alarming
- * Low light level detection



Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice

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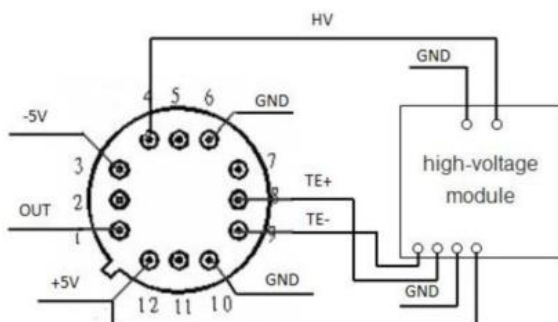
EMAL:frank.shuai@e-otron.com

<http://www.e-otron.com>

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Active diameter	A		Φ 800			um
Active area			0.5			mm ²
Nominal field of view	FOV		145			degrees
System bandwidth	f _{-3dB}			50		MHz
Rise/ Fall time (10%~90% points)	tr	λ _p =1064nm, M=100, τ =20ns, Vdc=± 5V		7		nS
Reverse breakdown voltage	V _(BR)	I _R =2μA Ev=0lx	250		350	V
Temperature coefficient				3.5		V/°C
TIA Operating voltage	V _{cc}		± 5			V
TIA operation current	I _{cc}		4			mA
Photo sensitivity	S _R	λ _p =1064nm, τ =20ns, Vdc=± 5V		1.4 × 10 ⁵		V/W
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p	V _R =0V		1064		nm
Offset voltage typical				0.8		mV
Output impedance	R _{output}	M=100, Pin=100nW		50		Ω
Output Voltage	V _o	λ _p =1064nm, R _L =50Ω, M=100		1.5		V
Offset Voltage	V _{offset}	V _{cc} =+5V, V _{ee} =-5V, M=10, R _L =50Ω		0	0.4	V
Positive Pulse	I _{cc}	V _{cc} =+5V, V _{ee} =-5V		21.5	30	nA
Negative Supply Voltage	I _{ee}			6.5	10	nA
Pulse polar				Positive		
T-diode temperature coefficient				1.80		mV/°C
Operating temperature			-40~+80°C			
Storage temperature			-50~+125°C			

Application Circuit:



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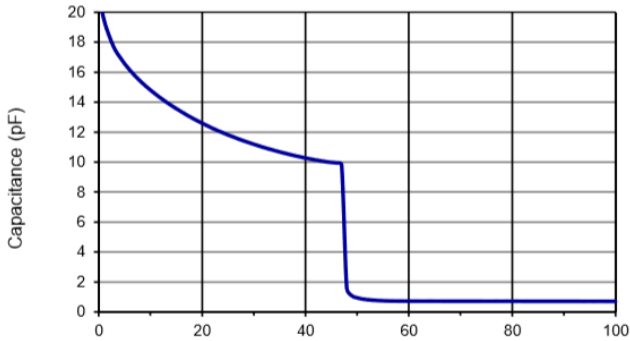
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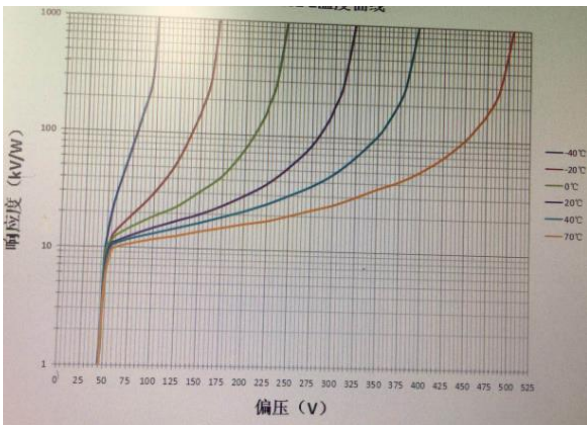
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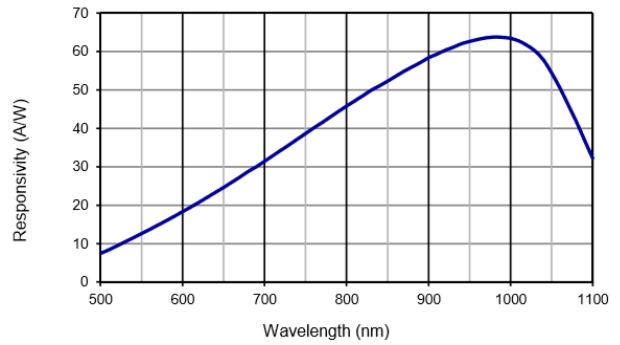
Capacitance of APD vs. Ubias



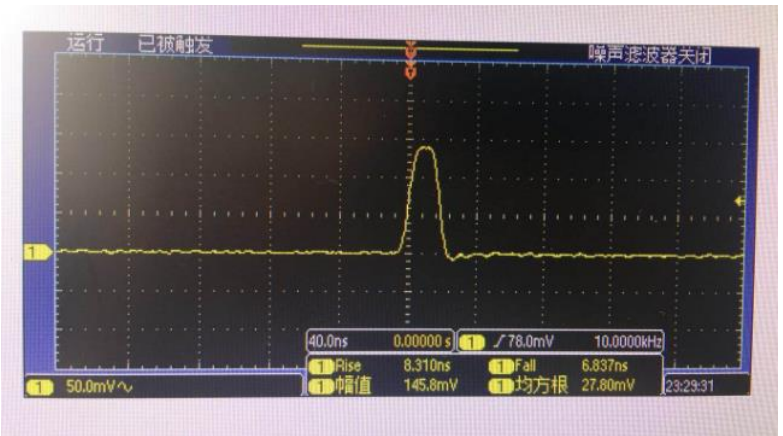
Response VS. Temperature



Spectral response (M=100)



Output pulse



Output Noise



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