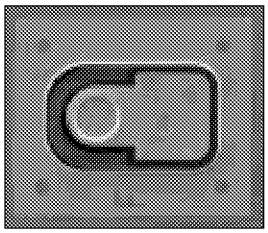
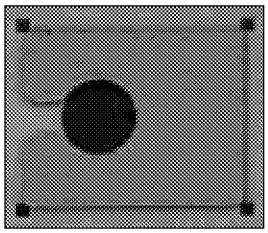
1300nm / 1550nm 1A463 High-Performance PIN

WDM Telecom

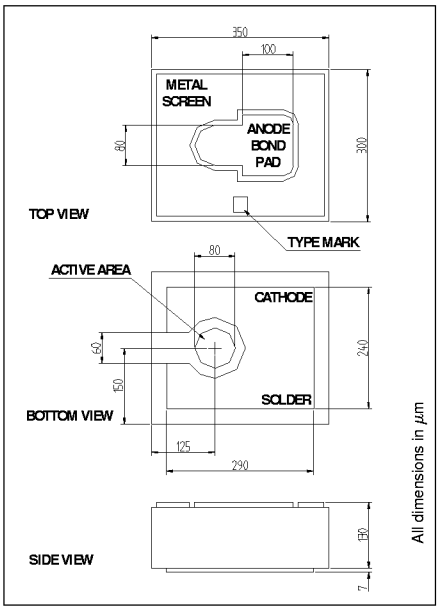
This unique PIN Photodiode chip is designed for waveguide-based OEIC (OptoElectronic IC) transceivers. It is complemented by the 1A464 and 1A465 wavelength-selective PIN Photodiode chips for 1300/1550nm WDM applications such as SDH/SONET up to 2.4 Gbps.



TopView



Bottom View



PIN Photodiode Chip

Optical and Electrical Characteristics (85°C Chip Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Responsivity	R	0.8 0.95	0.9 1.1		A/W	λ=1300 nm λ=1550 nm
Bandwidth	f_c	2.5			GHz	R_L=50Ω
Capacitance	C		0.4	0.6	pF	f=1MHz
Dark Current	I_d			3	nA	

Operating Conditions: V_R=5V. Optical power coupled from waveguide.

Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature	T_{op}	-55 to +125°C
Reverse Voltage	V_R	20V

Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Temperature Coefficient - Dark Current	dI_d/dT_j		5		%/°C

Assembly, Testing and Packaging

Soldering	The chip is prepared for eutectic soldering at 280°C
Bonding	Gold bond wire with 1.25 mil diameter or less
Testing Alternative 1 "Full"	100% Wafer probe for I_d before scribe and cleave 100% Visual inspection Wafer qualification for R, I_d and C Yield > 90% after chip soldering and bonding
Testing Alternative 2 "Reduced"	Sample wafer probe for I_d before scribe and cleave* Sample visual inspection - Estimated yield provided No wafer qualification Yield (visually accepted chips) > 85% after chip soldering and bonding *100% probe if sample indicates <98% yield
Packaging	The chips are delivered on sticky tape or in waffle pack

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