

OPTTEK TECHNOLOGY INC 06E D 6798580 0000126 2

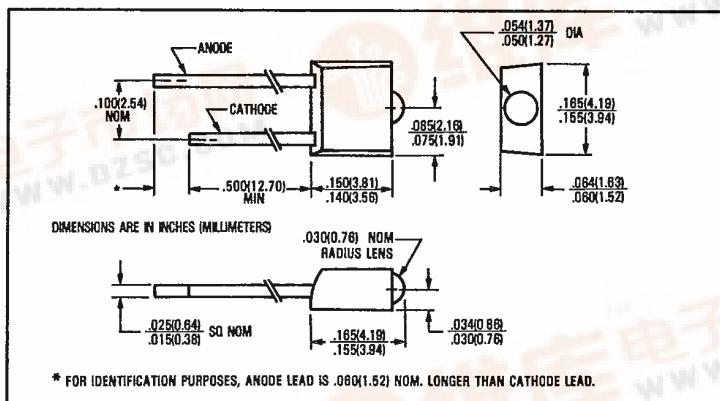
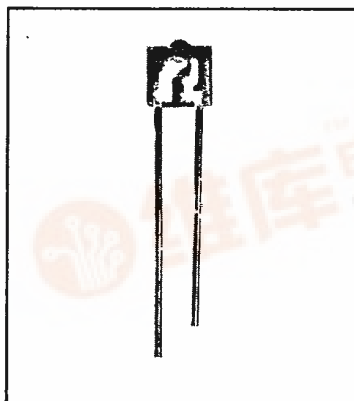
Optoelectronics Division
TRW Electronic Components Group

Product Bulletin 5068
January 1985

T-41-13

TRW

GaAlAs Plastic Infrared Emitting Diodes Types OP269SLC, OP269SLB, OP269SLA



Features

- Integral lens for narrow beam angle
- Easily stackable on 0.100 inch (2.54 mm) hole centers
- Mechanically and spectrally matched to the OP509 phototransistor series

Description

The OP269SL series are gallium aluminum arsenide infrared emitting diodes molded in "end-looking" miniature clear packages. The molded lens insures improved uniformity of lens magnification from unit to unit. The OP269SL series provides a broad range of on-line and radiant intensities and has considerable design flexibility due to its small size. These devices are mechanically and spectrally matched to the OP509 phototransistor series. The wavelength at peak emission for this series is 875 nm. For additional information on spectral emission characteristics, please refer to the OP509 data sheet.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

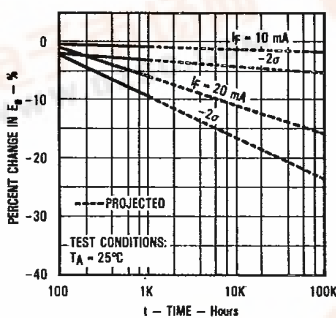
Continuous Forward Current	50 mA
Peak Forward Current (Pulse Width = 1 μsec , 300 pps)	3.0 A
Reverse Voltage	2.0 V
Storage and Operating Temperature Range	-40°C to $+100^\circ\text{C}$
Lead Soldering Temperature (1/16 inch [1.6 mm] from Case for 5 sec. with soldering iron ⁽¹⁾)	240 $^\circ\text{C}$
Power Dissipation	100 mW ⁽²⁾

Notes:

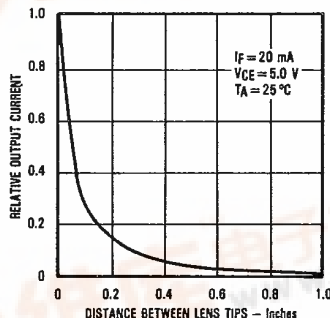
- (1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$ above 25°C .
- (3) $E_a(\text{APT})$ is a measurement of the average apertured radiant incidence upon a sensing area 0.180" (4.57 mm) in diameter perpendicular to and centered on the mechanical axis of the lens, and 0.653" (16.6 mm) from the lens tip. $E_a(\text{APT})$ is a measurement of the average radiant intensity within the cone formed by the above conditions. $E_a(\text{APT})$ is not necessarily uniform within the measured area.

Typical Performance Curves

Percent Changes in Radiant Intensity vs. Time



Coupling Characteristics of OP269SLC and OP509



Optoelectronics Division, TRW Electronic Components Group, 1215 W. Crosby Rd., Carrollton, TX 75006 (214) 323-2200, TLX 6716032 or 215849

Types OP269SLC, OP269SLB, OP269SLA

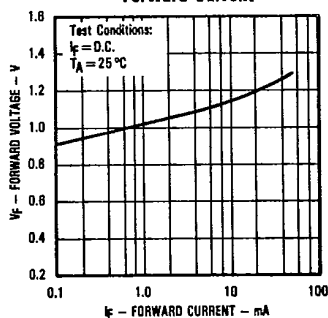
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Electrical Characteristics (T_A = 25°C unless otherwise noted)

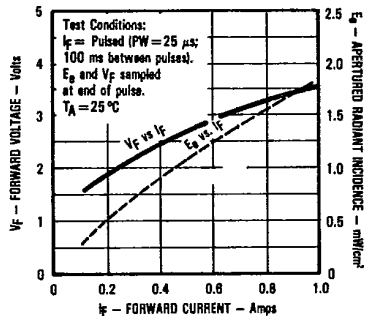
Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
E _a (APT) ⁽³⁾	Apertured Radiant Incidence	OP269SLC 0.30		0.70	mW/cm ²	I _F = 20 mA
		OP269SLB 0.35			mW/cm ²	I _F = 20 mA
		OP269SLA 0.45			mW/cm ²	I _F = 20 mA
V _F	Forward Voltage			1.80	V	I _F = 20 mA
I _R	Reverse Current			100	μA	V _R = 2.0 V

Typical Performance Curves

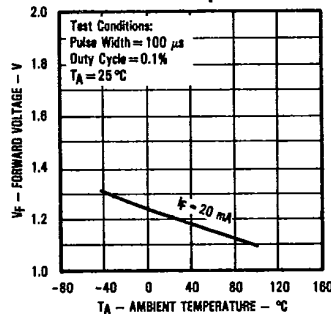
Forward Voltage vs. Forward Current



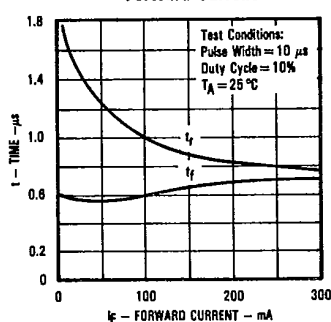
Forward Voltage and Radiant Incidence vs. Forward Current



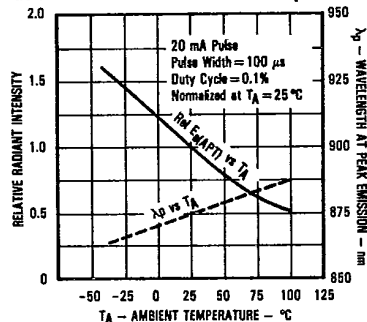
Forward Voltage vs. Ambient Temperature



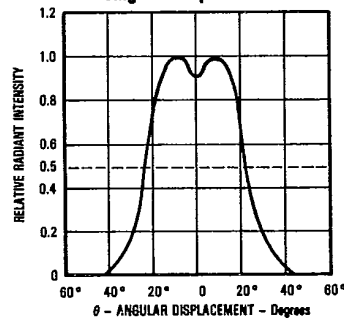
Rise Time and Fall Time vs. Forward Current



Relative Radiant Intensity and Wavelength at Peak Emission vs. Ambient Temperature



Relative Radiant Intensity vs. Angular Displacement



TRW reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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