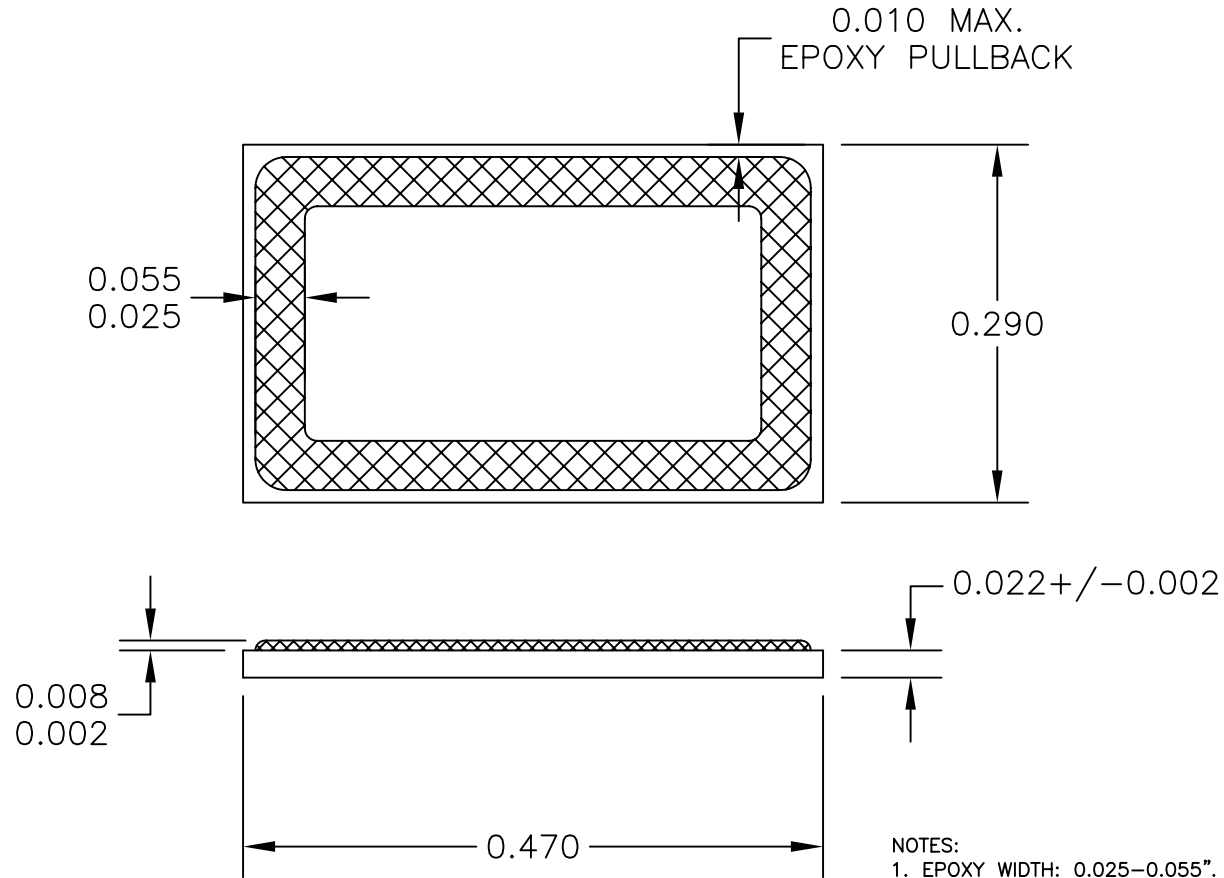


SSM P/N GL472901

REVISIONS			
REV.	BY:	DESCRIPTION	DATE
*	GEIDEL	RELEASED FOR QUOTATION	02-09-06



NOTES:

1. EPOXY WIDTH: 0.025-0.055". PULLBACK: 0.010"
2. NO CHAMFERED CORNERS
3. NO BEVELED EDGES
4. DUST/FOREIGN MATERIAL SHALL NOT EXCEED 20 MICRONS
5. SURFACE CONDITION SHALL SATISFY 60/20 SCRATCH/DIG

APPROVAL SIGNATURES		DATE
MANUFACTURING		
CUSTOMER SERVICE		
QA		
4180	RJ9F, 0.002-0.008 THICKNESS	
0.00478	4512 SCHOTT D263 CLEAR GLASS 6.0 SQ. X 0.022" THICK	
QTY	ITEM	MATERIAL

TOLERANCES ARE IN INCHES:
(UNLESS OTHERWISE SPECIFIED)
FRACTIONS: $\pm 1/16"$
DECIMALS: X.XX = ± 0.01
 X.XXX = ± 0.004

∇ $\pm 1"$
 \perp $\pm 1/32"/FT.$
 \sphericalangle 0.003"/IN.
DRAFT $\leq 10^\circ$ MAX.
RADI: 0.030 MAX.

0.470 X 0.290 X 0.022
GLASS LID WITH EPOXY

1/1



D 263

Description:

D 263 is a borosilicate glass which is produced by melting purest raw materials. As such, it is very resistant to chemical attack.

Product features:

- large thickness range (30 μm ... 1.1 mm)
- excellent flatness
- easy to cut
- high light transmission

Applications:

The characteristics of this special composition substrate glass makes it suitable for a variety of applications, i.e.

- touch control panels
- LCD
- electroluminescent displays
- solar cells
- micro scales for measuring devices

Technical Data of D 263

Mechanical properties

Density at 20°C (68°F): $\rho = 2.51 \text{ g/cm}^3$
Stress-optical coefficient: $c = 3.44 \cdot 1.02 \cdot 10^{-12} \text{ m}^2/\text{N}$
Young's modulus: $E = 72.9 \text{ kN/mm}^2$
Torsion modulus: $G = 30.1 \text{ kN/mm}^2$
Poisson's ratio: $\mu = 0.208$
Knoop hardness: $\text{HK}_{100} = 590$

Electrical properties

Dielectric constant (1 MHz): $\epsilon_r = 6.7$
Dielectric loss factor (1 MHz): $\tan \delta = 61 \cdot 10^{-4}$
Electrical resistivity for A.C. 50 cycles:
 ρ_{25} ($\vartheta = 250^\circ\text{C}$ (482°F)) = $1.6 \cdot 10^8 \text{ } \Omega \text{ cm}$
 ρ_{350} ($\vartheta = 350^\circ\text{C}$ (662°F)) = $3.5 \cdot 10^6 \text{ } \Omega \text{ cm}$

Thermal properties

Viscosities and corresponding temperatures

Viscosity $\log \eta$ (d Pas)	Temperature in °C (°F)	Designation
14.5	529 (984)	Strain point
13.0	557 (1035)	Annealing point
7.6	736 (1357)	Softening point

Transformation temperature: $T_g = 557^\circ\text{C}$ (1035°F)

Coefficient of mean linear thermal expansion:
 $\alpha_{20-300} = 7.2 \cdot 10^{-6} \text{ K}^{-1}$

Shrinkage

Anti-shrinkage treatment can be made by DESAG after determination of the required temperature profile.

Chemical properties

Chemical resistance data (as measured)

Medium	5% NaOH	N/50 Na ₂ CO ₃	5% HCL
Temperature in °C (°F)	95 (203)	95 (203)	95 (203)
Reaction time (h)	6	6	24
Loss of weight (mg/cm ³)	2.1	0.05	0.02
Comparable loss of weight data for AF 45 (mg/cm ³)	2.2	0.11	5.2

The loss of weight is determined by a test method used by special glass manufacturers.

Optical properties

Refractive indices at 20°C (68°F):

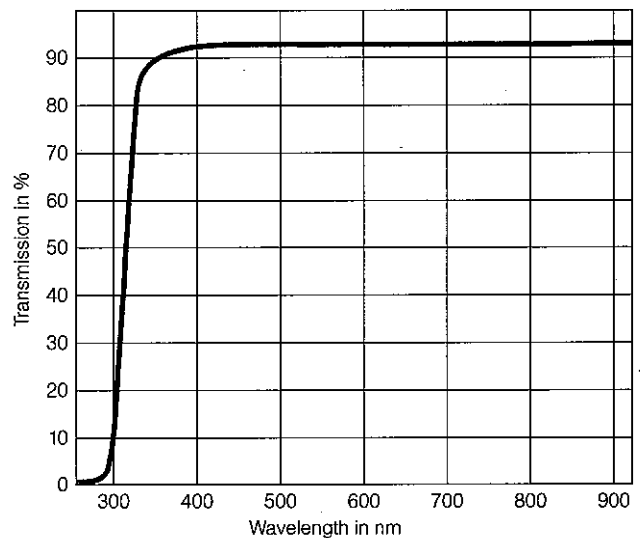
n_e ($\lambda = 546 \text{ nm}$) = 1.5255

n_d ($\lambda = 588 \text{ nm}$) = 1.5230

Abbe value: $\nu_e = 55$

Luminous transmittance (glass thickness 1.1 mm):

$\tau_{VD65} = 91.7\%$



Spectral transmittance $\tau(\lambda)$ (glass thickness 0.15 mm)

PACKAGING ADHESIVE/SEALANT FORMULATION RJ-9F

Formula RJ-9F is a specifically designed b-staged epoxy for attaching ceramic, metal, or plastic lids to packages having a mismatch in thermal expansion coefficients. It is especially advantageous for attaching aluminum or plastic lids to ceramic or PC board packages.

TYPICAL PROPERTIES OF RJ-9F

<i>Extractable ions</i>	<i>less than 10 ppm</i>
<i>Max Operating Temperature</i>	<i>130-135°C</i>
<i>Outgassing</i>	<i>0.7%TML, 0.04% CVCM</i>
<i>Moisture Absorption (24 hr. soak)</i>	<i>.2%</i>
<i>Ultimate Tg by DSC</i>	<i>102 °C</i>
<i>Modulus</i>	<i>400,000 psi</i>
<i>CTE</i>	<i>32×10^{-6} in/in/°C</i>
<i>Dielectric Constant (@ 1 Mhz)</i>	<i>3.6</i>
<i>Volume Resistivity Ohm-cm</i>	<i>3×10^{16}</i>
<i>Thermal Conductivity W/m-k</i>	<i>.3-.5</i>

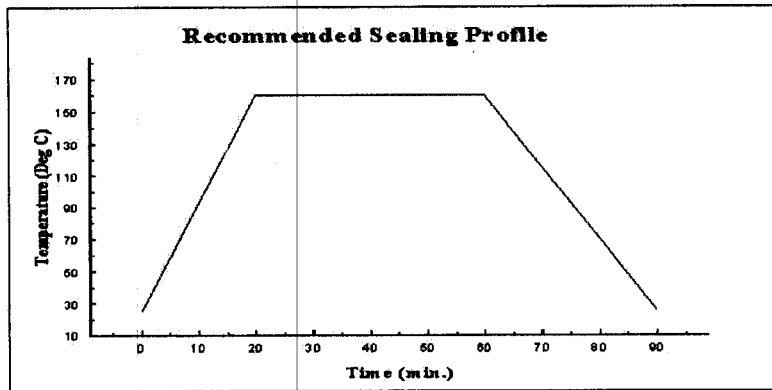
TYPICAL SEALED PACKAGE PERFORMANCE PROPERTIES*

<i>Helium leak rate</i>	<i>less than 3×10^{-8}</i>
<i>Lap Shear Strength (@ 25° C)</i>	<i>6,200 psi</i>
<i>Humid aging (1000 hrs @ 85/85 conditions)</i>	<i>Zero Failures</i>
<i>Thermal shock (MIL-STD 883E)</i>	<i>Zero Failures</i>
<i>Thermal cycle (MIL-STD 883E)</i>	<i>Zero Failures</i>

**These values may vary depending upon the materials to which the epoxy is adhered. All above data is based on sealed packages consisting of a ceramic substrate and a ceramic lid.*

SEALING AND CURING

Most parts can be sealed and cured in a one-step cycle of 60 minutes at 160°C under 5 psi of pressure.



The above sealing profile is based on the heat up rate of the bondline of the package, and not just the oven or heat source.

NOTICE

This data are provided for guideline purposes. No warranty is made on the actual use. Customers should perform their own tests.