

LGS 硅酸镓钪 Lanthanum Gallium Silicate

简介 Introduction:

Langasite 晶体 ($\text{La}_3\text{Ga}_5\text{SiO}_{14}$, LGS)属于间群 P321,点群 32,是一种很有前途的用于制造声表面波 (SAW)和体表面波 (BAW)器件的新型压电材料。同时, LGS 晶体可以用于制做电光 Q 开关。以 LGS 晶体为材料的器件具有较高的热稳定性。

Langasite crystal ($\text{La}_3\text{Ga}_5\text{SiO}_{14}$, LGS) belongs to the intergroup P321, point group 32, and has been reported as a promising new piezoelectric material for fabricating surface acoustic wave (SAW) and bulk surface wave (BAW)

devices. At the same time, LGS crystals can be used to make electro-optical Q-switches. Devices based on LGS crystals have high thermal stability.



主要优点 Main Advantages:

高热稳定性

低等效串联电阻率

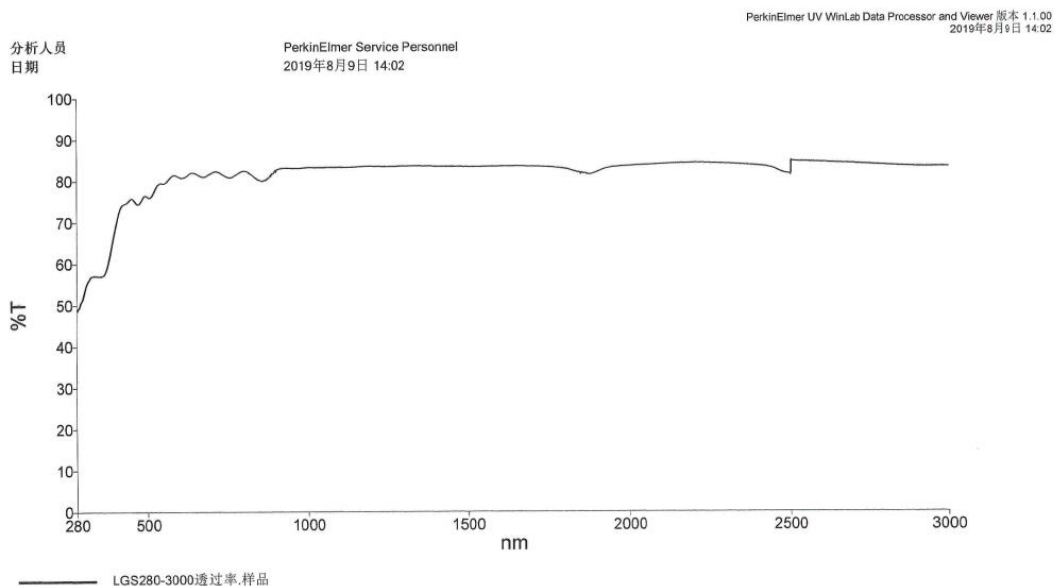
机电耦合系数是石英的 3-4 倍.

High thermal stability

Low Equivalent Series Resistivity

Electro-mechanical coupling coefficient is 3-4 times that quartz

透射曲线 Transmission Curve:



材料特性 Material Properties:

分子式 Chemical Formula	La ₃ Ga ₅ SiO ₁₄
晶体结构 Crystal Structure	Trigonal system, group33
生长方法 Growth Method	Czochralski
硬度 Hardness	6.6 Mohs
密度 Density	5.754g/cmm ³
熔点 Melting point	1470°C
介电常数 Dielectric constant	$\epsilon_{11}=18.27$; $\epsilon_{33}=55.26$
热膨胀系数 Thermal expansion coefficient	$\alpha_{11}=5.15 \times 10^{-6}/K$; $\alpha_{33}=3.65 \times 10^{-6}/K$
机电耦合系数 Electromechanical coupling coefficient K (%)	0.28 ~ 0.46
压电应变常数 Piezoelectric strain constant (10^{-12})C/N	$d_{11}=6.3$; $d_{14}=-5.4$

科瑞思创提供 Crystro offers:

尺寸 Size	2" ;3" ;10*10*0.5;20*20*0.5;30*30*0.5, 可定制尺寸
厚度与公差 Thickness Tolerance	0.5mm±0.1mm, 可定制
切割方向 Orientation	±0.2°, (0,138.5,27) 或依据客户切向要求
平行度 Parallelism	< 30"
侧垂 Perpendicularity	< 15'
平面度 Flatness	< $\lambda/10@633nm$
倒角 Chamfer	< 0.1*45°
表面光洁度 Surface Quality	10/5

备注：以上参数为参考数据，具体产品技术要求请联系销售人员确认。

Note: Above parameters for reference only, please contact our sales Rep. for your specific requirement.