

TFD (ITO) CHARACTERISTICS

Compostion, Optical and Semiconductor Properties

INDIUM OXIDE (IN₂O₃)

TIN DOPED 5-20 WT. % OF METAL

-1% OXYGEN DEFICIENCY

N-TYPE

RESISTIVITY 1.5X10⁻⁴ TO 10⁻³ OHM•CM

MOBILITY 10 - 50 CM²/V•S

CARRIER DENSITY 10¹⁹ - 10²¹ CM⁻³

SHEET RESISTANCE DERMINED BY THICKNESS 0.1 - 0.8 MICRONS

VIS/NIR TRANSMITTER

OPTICAL ABSORPTION EDGE 3.1 EV OR 400NM

N ~ 1.95 - 2.05

K ~ 0.001 - .02

PLASMA "FREQUENCY" 1 TO 2 MICRONS

IR REFLECTOR

ITO Process Details

- ULVAC

- ION BEAM SPUTTER FILMS

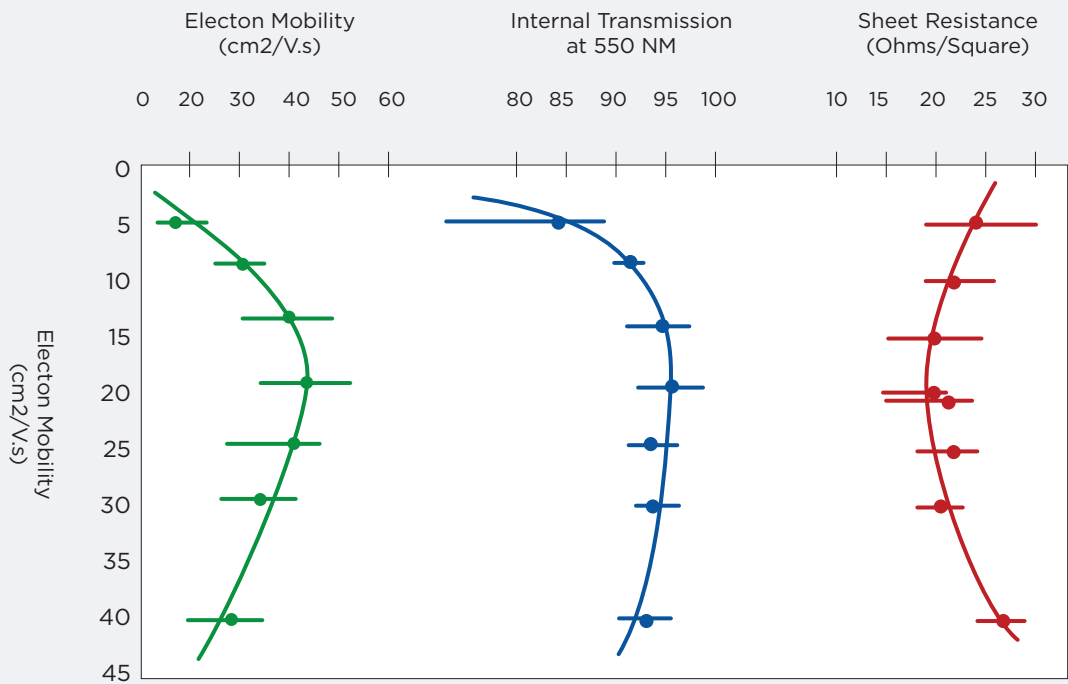
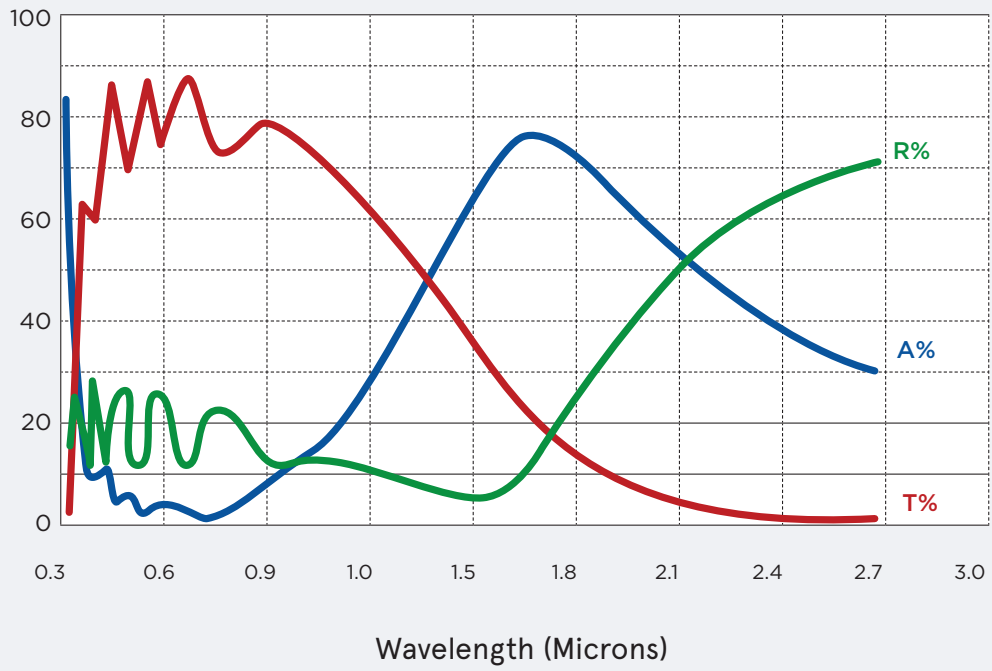
Environment Reliability

- EXCELLENT LOG-TERM CONDUCTIVITY AND TRANSMISSION HARSH ENVIRONMENT

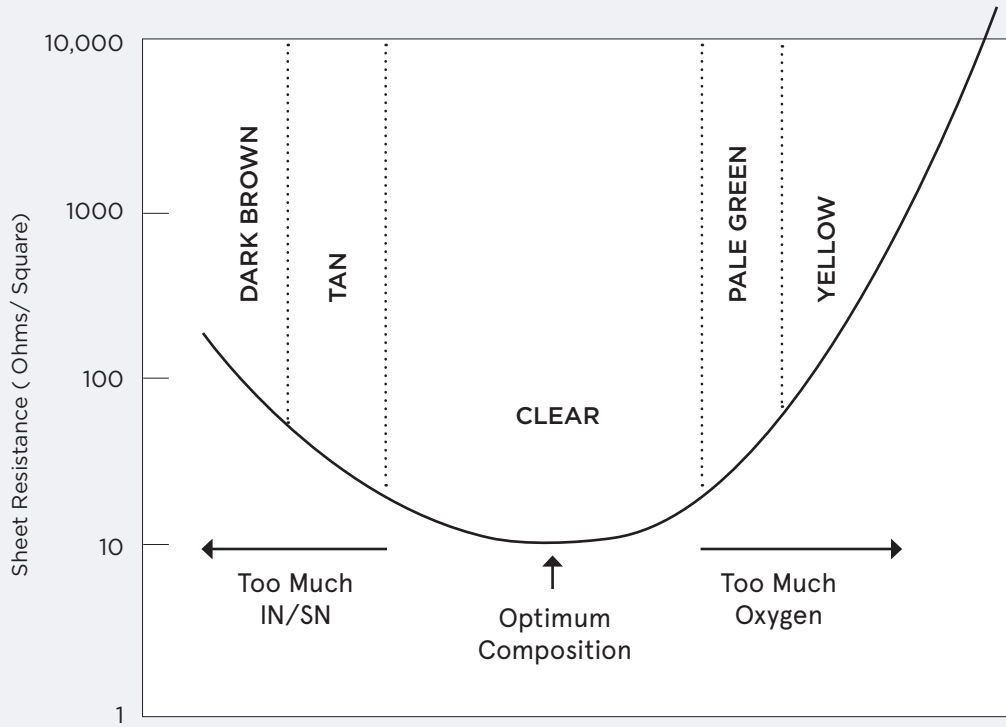
- TEMPERATURE STABILITY FROM -200 TO +200

- TENSILE FAILURE ON PLASTIC ABOVE 90° C

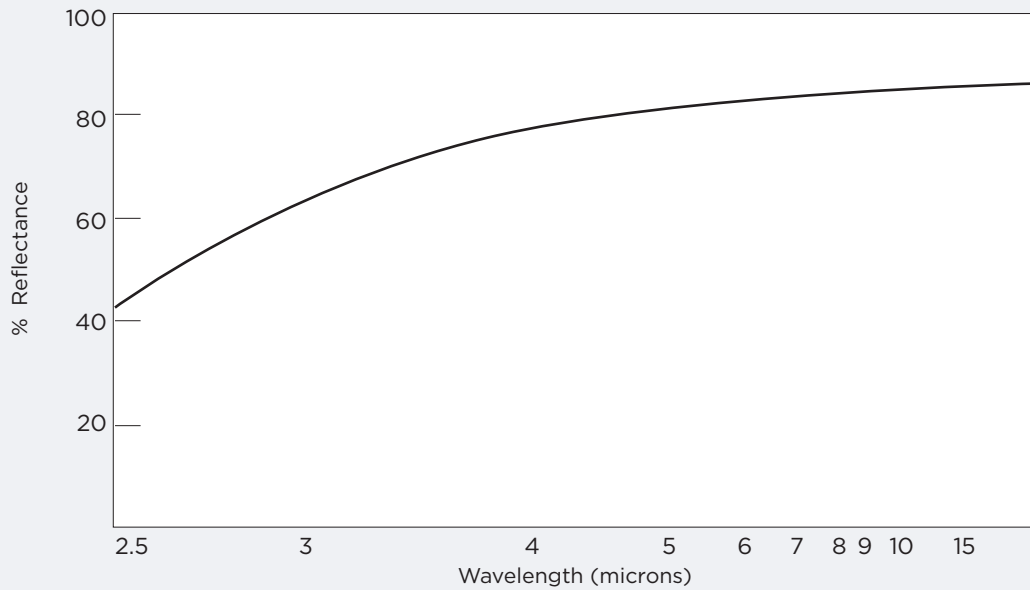
Transmission vs Wavelength



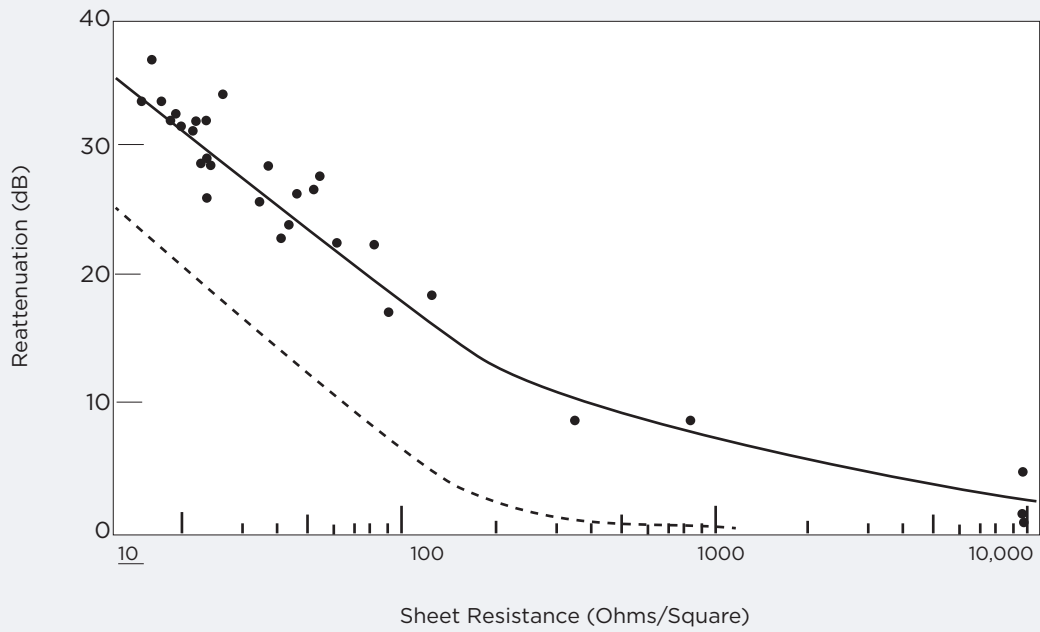
ITO Visual Color in White Light Reflectance



ITO-IR Reflectance



EMI Shielding



Environment Reliability

