About the voltage of the Function Generator

GW INSTEK
Simply Reliable

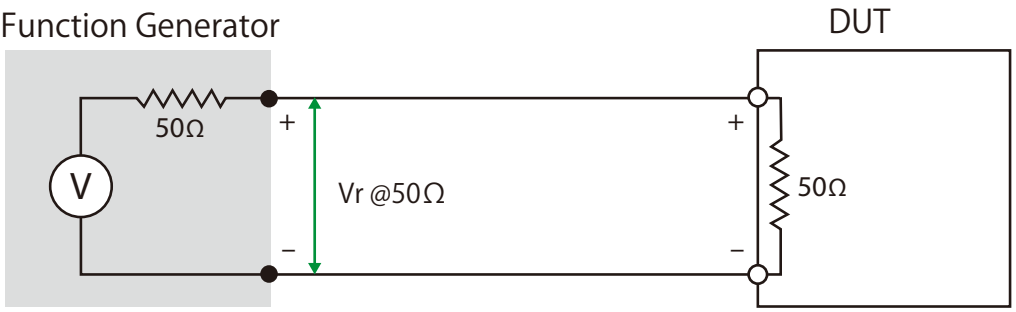
The function generator outputs the original signal voltage "V(=2×Vs) on the premise of 50Ω termination. The voltage Vr[V] applied to the load impedance R[Ω] is obtained as follows when the output voltage set to Vs[V].

$$\mathbf{Vr\ [V] = 2 \times Vs\ [V] \times \frac{R[\Omega]}{(50[\Omega]+R[\Omega])}}$$

・When Load R＝50Ω、Setting Voltage: Vs ＝10Vp-p
Vr[Vp-p]=2x10[Vp-p]x50[Ω]/(50[Ω]＋50[Ω]) ＝10[Vp-p]

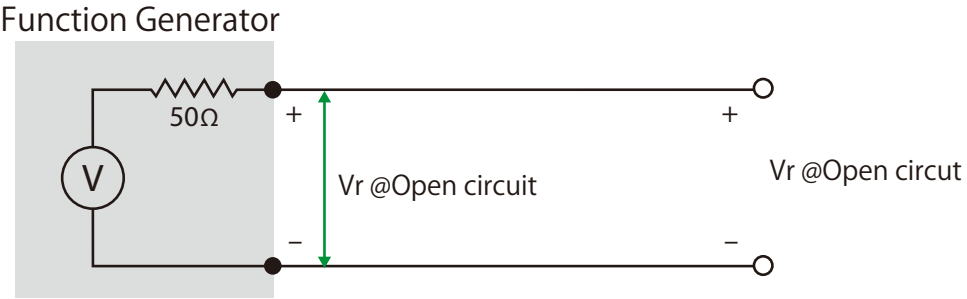
・When Load R＝1MΩ、Vs ＝10Vp-p
Vr[Vp-p]=2x10[Vp-p]x1M[Ω]/(50[Ω]＋1M[Ω])≒20[Vp-p]

50Ω Load



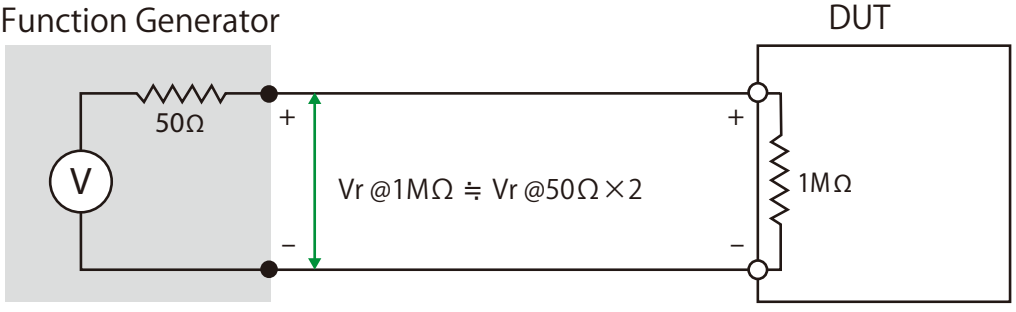
AFG series: 1 mVpp to 10 Vpp(into 50Ω)

Open circuit



Vr @50Ω×2＝Vr @Open Circuit

1MΩ



AFG series: 2 mVpp to 20 Vpp(@1MΩ)