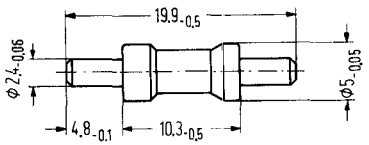
Germanium point-contact diodes

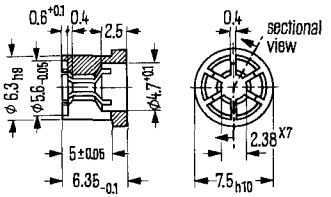
Germanium point-contact diodes GD 731, GD 732 and GD 733 are special-quality diodes with a high rectifying efficiency into the UHF region. These types are suitable for high resistance quality rectifying circuits, and are noted for their small spread in the quadratic region of the characteristic as well as the very small frequency dependence of their rectifying efficiency. With matching adapter (Q62901-B6) these diodes may be inserted into a cartridge fitting (type DIN 41861). The type number and diode symbol are stamped on the case. (Replacement for the former AAY 53, AAY 54, AAY 55.)

Type	Order number
GD 731	Q62601-X731
GD 732	Q62601-X732
GD 733	Q62601-X733
Adapter	Q62901-B6



Weight approx. 1 g Dimensions in mm

Adapter Scale 2:1



Weight approx. 1 g

Maximum ratings		GD 731	GD 732	GD 733	
Reverse voltage	V_R	36	36	40	V
Maximum reverse voltage	V_{RM}	40	40	45	V
Maximum current	i_{FS}	50	50	50	mA
Junction temperature	T_j	60	60	60	°C
Ambient temperature	T_{amb}	−20 to +60	−20 to +60	−20 to +60	°C
Storage temperature	T_S	−40 to +60	−40 to +60	−40 to +60	°C
Thermal resistance	R_{thJamb}	≦400	≦400	≦400	K/W

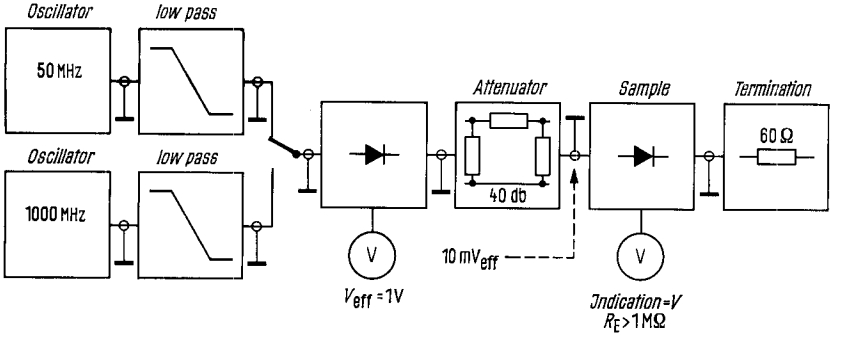
Static characteristics (T_{amb} = 25 °C)					
Forward voltage (I_F = 2 mA)	V_F	<1	<1	<1[1])	V
Reverse current (V_R = 40 V)	I_R	<300	<300	50 (<100)	µA
Reverse current (V_R = 10 V)	I_R	–	–	3 (<5)	µA

[1]) I_F = 5 mA

Dynamic characteristics (T_{amb} = 25 °C)		**GD 731**	**GD 732**	**GD 733**	
Diode capacitance (V_R = 0 V; f = 1 MHz)	C_D	1.5	1.5	1.5	pf
Series inductance	L_s	10	10	10	nH
Voltage rectifying efficiency (V_{eff} = 10 mV; f = 50 MHz; R_L = 10 MΩ)	η	10 (9 to 13)	10 (9 to 13)	>60[1])	%
Fall in voltage rectifying efficiency from 50 MHz to 1 GHz (V_{eff} = 10 mV; R_L = 1 MΩ)	$\frac{\Delta\eta}{\eta}$	<30	–	<10[2])	%

Dynamic characteristics are measured in the peak value rectifying circuit below.

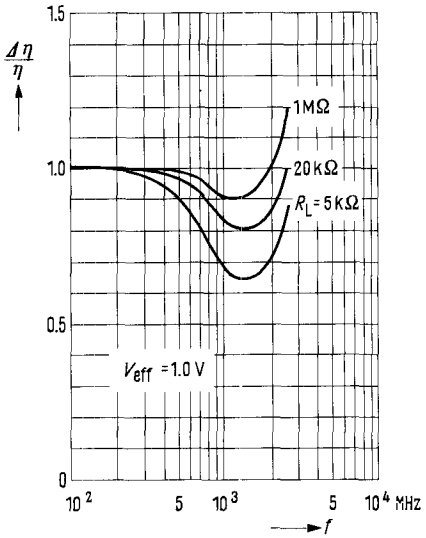
Block diagram: for GD 731, GD 732, GD 733



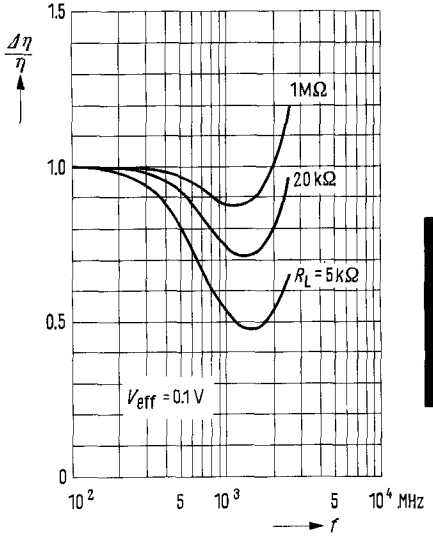
[1]) (V_{eff} = 2 V; f = 100 MHz; R_L = 5 kΩ; C_L = 20 pf)
[2]) Between 1 MHz and 400 MHz (V_{eff} = 1 V; R_L = 100 kΩ; C_L = 5 nf)

Voltage rectifying efficiency as a function of frequency $\frac{\Delta\eta}{\eta} = f(f)$ for input voltages

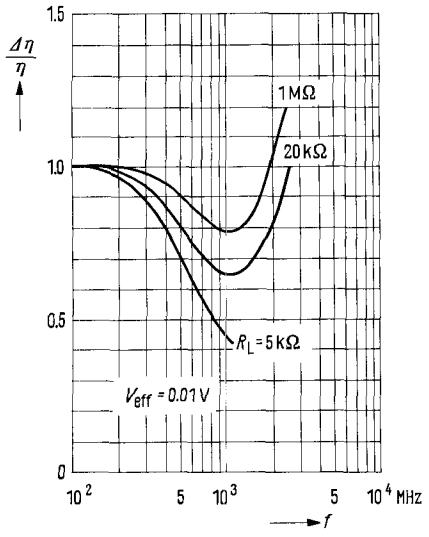
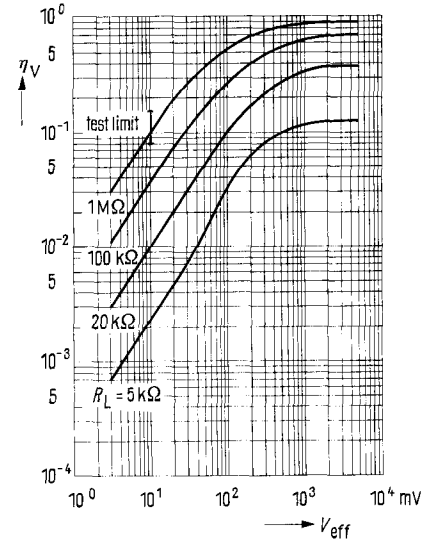
R_L = parameter
V_{eff} = 1 V



R_L = parameter
V_{eff} = 0.1 V



R_L = parameter
V_{eff} = 0.01 V



Voltage rectifying efficiency
$\eta_V = f(V_{eff})$; f = 50 MHz;
R_L = parameter