



BENEFITS

- Standard Commercial Catalogue Parts
- In Volume Production
- Many Frequency Range Option
- 65dB Dynamic Range
- Exceptional Sensitivity
- Unrivalled Frequency Flatness
- MIC/MMIC Technology
- Small Size
- Low Power Consumption

APPLICATIONS

- EW, ELINT and IFM Receivers
- Direction Finding Radar
- Test Instruments
- High Gain Low Noise RF power limited output ideal to drive IFM receivers

DLVAs & SDLVAs

Teledyne Defence & Space (TDS) has over 30 years of experience in the design and manufacture of Detector Log Video Amplifiers (DLVAs). These devices are used extensively in applications requiring an output voltage related to the power of a received RF signal and used primarily in direction finding, channelised receivers, and phase array radar.

In order to cope with a wide range of input signals, a log amplifier is used to provide a linear voltage output per dBm of input power. Continuous product development over many decades has resulted in further product refinements that now include the Teledyne Defence & Space Hybrid DLVA (LMV056) and SDLVA (Successive Detector Log Video Amplifiers RV075). Each version has advantages and disadvantages.

TD leverages its own DLVAs in the company's sub-system designs, including the Compact 2-18GHz RWR (RR017). TD offers over 38 different designs with thousands of units shipped to date, and is major supplier to large defence contractors.

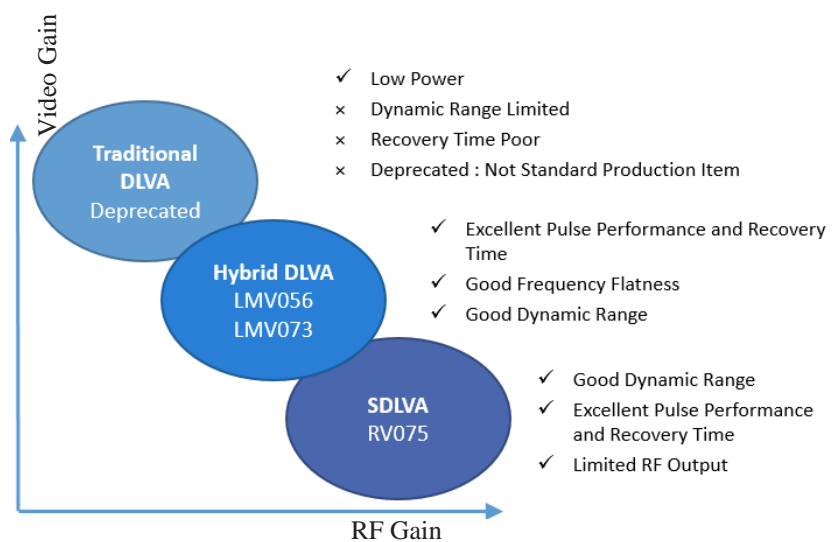
The traditional DLVA is a single diode device, and so has a typical dynamic range of about 40dB. Recovery time is the time taken for a DLVA to go from a maximum output back down to being able to register a threshold-level signal. This takes a long time in a traditional DLVA because the detector circuit is saturated and the capacitors take a relatively long time to fully discharge.

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Hybrid DLVAs and sequential DLVAs have multiple detector stages, each operating over a relatively small part of the full dynamic range. Consequently they can discharge faster at the end of a pulse, so the recovery time is shorter. Hybrid DLVAs usually have two or three detector stages, whereas SDLVAs have six or seven detector stages. This is why SDLVAs have the best pulse recovery performance, but Hybrids have better frequency flatness.

Some SDLVAs have a built-in limiting RF output utilising the front end RF amplifier to drive an IFM or other functionality should this be desired (eliminating the need for a separate RF path and limiting amplifier)



SPECIFICATIONS

Model	LMV046	LMV066	LMV056	RV075	LMV023-M1
Type	SDLVA	SDLVA	Hybrid	SDLVA	DLVA
Freq Range (GHz)	2-18	2-18	2-18	2-18	18-40
Dynamic Range (dBm)	-70 to +10	-60 to +7	-65 to +5	-60 to +5	-40 to +5
Freq Flatness (dB)	±2	±2	±2.5	±2.75	±3.5
Log Linearity (dB)	±1	±1.5	±2	±1.75	±1
TSS (dBm)	-71	-65	-71	-67	-40
Rise Time (ns)	15	30	15	15	25
Recovery (ns)	100	1000	100	75	500
Power (W)	8.5	7	6	5	4
RF Gain (dB)	N/A	N/A	N/A	>45	N/A
RF Saturation (dBm)	N/A	N/A	N/A	+12	N/A
Temp Range (°C)	-40 to +85	-40 to +85	0 to +85	-20 to +85	-10 to +85

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