



Surface Mount Analog Level Detector 1.5 to 6.0 GHz

Technical Data

PSD-6001-25

Features

- **Wideband:** Usable 1–8 GHz
- **Wide Range:** -30 to +5 dBm
- **Temperature Stable:** ± 0.3 dB Typ
- **Operates from ± 5 to ± 15 or +5 to +15 volt supply**
- **Small Size, Surface Mount**

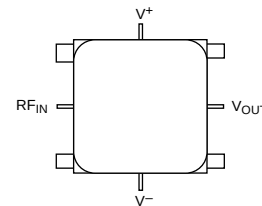
Applications

- **Level Control**
- **Signal Monitoring**

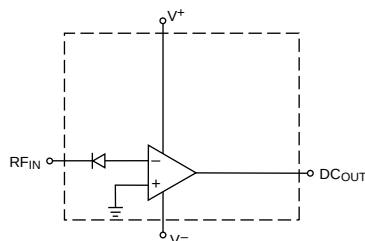
Description

The PSD-6001 is a wideband analog level detector which provides low drift RF level measurement from -30 to +5 dBm. It contains a temperature stable diode detector and a precision, low offset, op-amp. The unit is built with chip and wire construction on a thin-film substrate for small size and ruggedness.

Pin Configuration SM-25DA



Schematic



Maximum Ratings

Parameter	Maximum
DC Voltage	± 18 Volts
Continuous RF Input Power	+10 dBm
Operating Case Temperature	-55 to +100°C
Storage Temperature	-62 to +100°C
"R" Series Burn-In Temperature	+100°C

Thermal Characteristics

θ_{JC}	35°C/W
Temperature Rise (No RF)	9°C
Temperature Rise (Max. RF)	30°C

Weight: (typical) 0.5 grams

Electrical Specifications¹

(Measured in 50 Ω system @ ± 15 VDC nominal unless otherwise noted²)

Symbol	Characteristic	Typical $T_C = 25^\circ\text{C}$	Guaranteed Specifications		Unit
			$T_C = 0 \text{ to } 50^\circ\text{C}$	$T_C = -55 \text{ to } +85^\circ\text{C}$	
BW	Frequency	1.5–6.0	1.5–6.0	1.5–6.0	GHz
VSWR	VSWR (Max.) Pin=-15 dBm	1.5	2.0	2.0	:1
—	Sensitivity (Min.) Pin=-15 dBm	125	90	90	mV
—	Power Flatness (Max.) Vout=100 mV	0.3	0.6	0.75	$\pm$ dB
—	Temp. Stability Pin=-30 to +0 dBm		0.5	0.75	$\pm$ dB
—	1 dB Square Law Departure	-15			dBm
—	Pulse Response ³ Pin=-15 dBm	1.0			μ sec
—	Pulse Response ³ Pin=-15 dBm	3.0			μ sec
—	Output Offset Voltage Pin=no RF	0.5	1.0	2.0	$\pm$ mV
—	Max. Output Voltage Pin=+10 dBm	+Vs-1.0			volt
—	Supply Current Pin=no RF	2.0			mA
—	Supply Current Pin=+10 dBm	17.0			mA

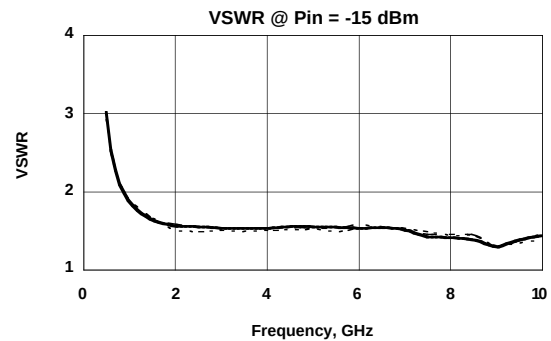
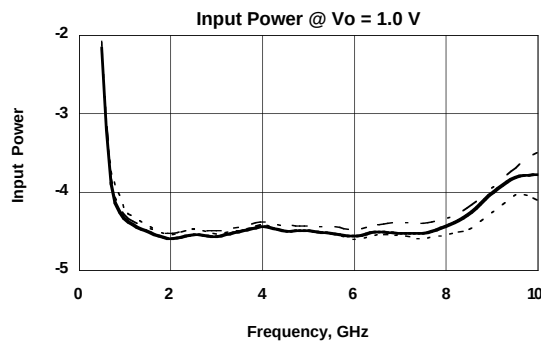
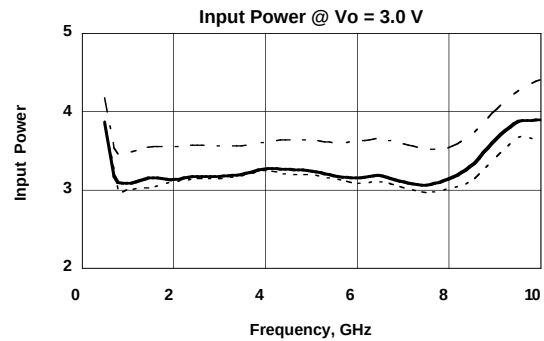
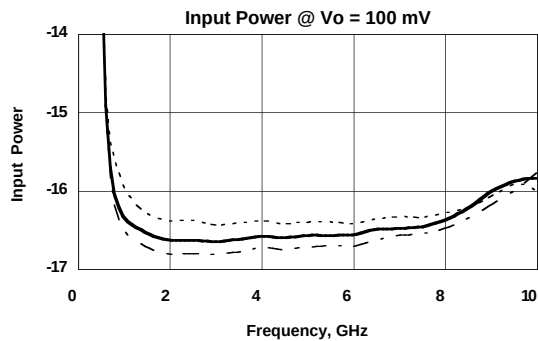
NOTES: 1. Unit employs a DC return at pin 1 (DC short circuit at RF input)

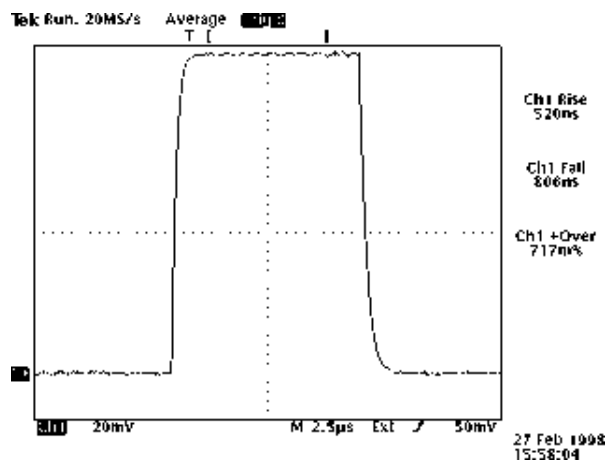
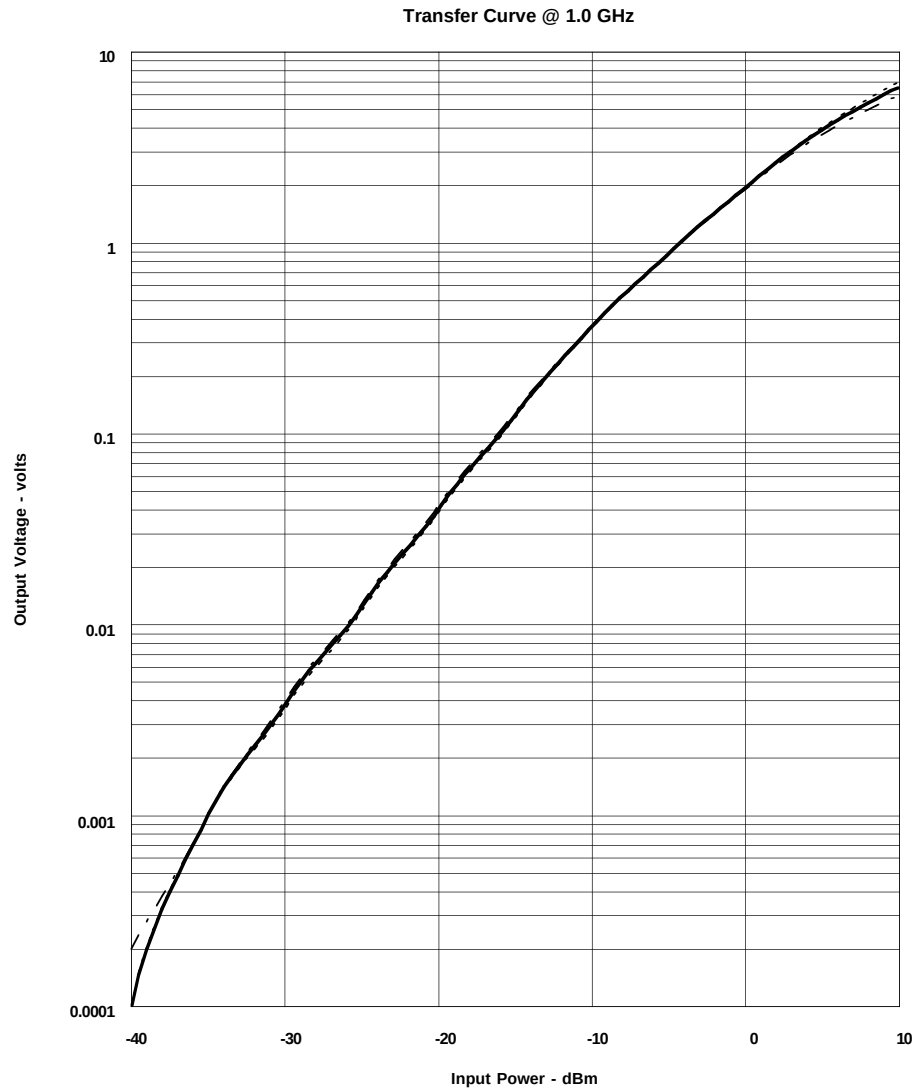
2. Spec's apply for dual or single 5 to 15 volt operation

3. 50% RF to 10 or 90% video (total delay plus rise or fall time)

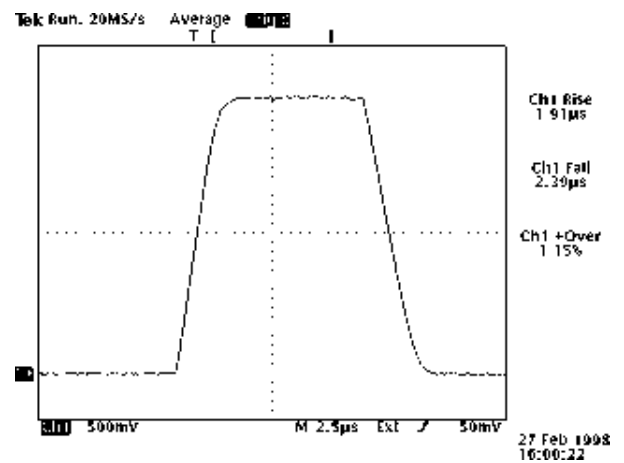
Typical Performance Over Temperature (@ ± 15 VDC unless otherwise noted)

Key: +25°C ———
+85°C - · -
-55°C - - -



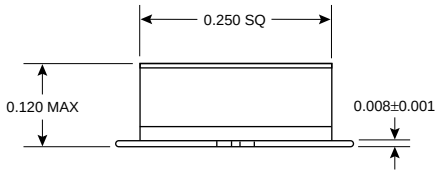
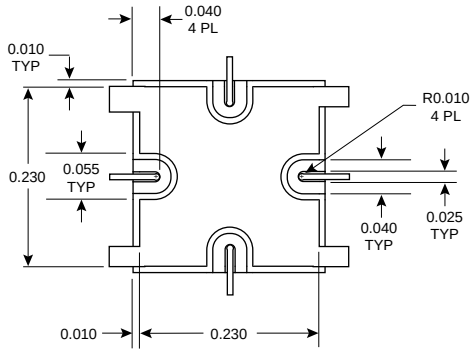
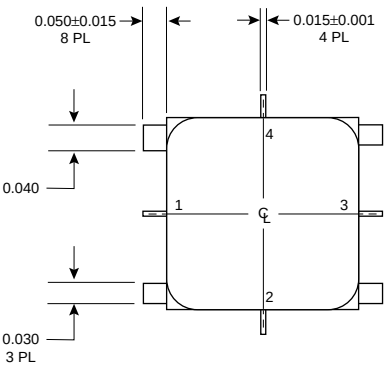


Pulse Response @ Pin = -15 dBm



Pulse Response @ Pin = +5 dBm

Case Drawings



PKG #	PIN DESIGNATION			
	1	2	3	4
SM-25	RF IN	GND	RF OUT	+V
SM-25F	RF IN	V-CONT	RF OUT	+V
SM-25DA	RF IN	-V	VID OUT	+V
SM-25DD	RF IN	CTL	TTL OUT	+V

NOTES:

1. MAXIMUM TEMPERATURE EXPOSURE IS 260°C FOR 10 SECONDS.
2. DIMENSIONS IN INCHES.
3. TOLERANCES: xx ± .01
xxx ± .005

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