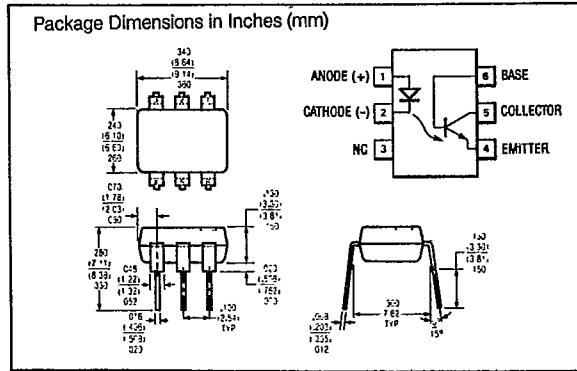
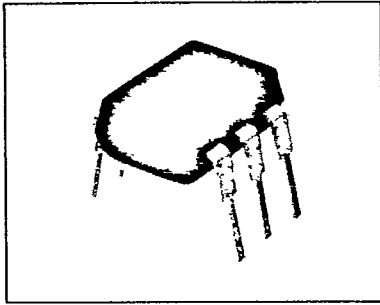


SIEMENS
[查询"4N25-004"供应商](#)

T-41-83

**4N25/4N26
 4N27/4N28**

**PHOTOTRANSISTOR
 OPTOCOUPLER**



FEATURES

- I/O Compatible with Integrated Circuits
- 0.5 pF Coupling Capacitance
- Underwriters Lab Approval #E52744
- VDE Approvals 0883/6.80, 0804/1.83

Optocouplers
(Optoisolators)

DESCRIPTION

The 4N25, 4N26, 4N27, and 4N28 are optically coupled isolated pairs, each consisting of a Gallium Arsenide infrared LED and a silicon NPN phototransistor. Signal information, including a DC level, can be transmitted by the device while maintaining a high degree of electrical isolation between input and output. They can be used to replace relays and transformers in many digital interface applications. They have excellent frequency response when used in analog applications.

Maximum Ratings

Gallium Arsenide LED	
Power Dissipation at 25°C	150 mW
Derate Linearly from 25°C	2.0 mW/°C
Continuous Forward Current	80 mA
Forward Current Peak (1µs pulse, 300 pps)	3.0 A
Peak Reverse Voltage	3.0 V
Detector (Silicon Phototransistor)	
Power Dissipation at 25°C	150 mW
Derate Linearly from 25°C	2.0 mW/°C
Collector-Emitter Breakdown Voltage (BV _{CEO})	30 V
Emitter-Base Breakdown Voltage (BV _{ECB})	7.0 V
Collector-Base Breakdown Voltage (BV _{CBO})	70 V
Package	
Total Package Dissipation at 25°C Ambient (equal power in each element)	250 mW
Derate Linearly from 25°C	3.3 mW/°C
Isolation Test Voltage	3750 VAC/5300 VDC
in Accordance with DIN57883/6 80	
Creepage Path	8 mm min.
Clearance Path	7 mm min.
Tracking Index According to VDE 0303	KB100/A
Storage Temperature	-55 to +150°C
Operating Temperature	-55 to +100°C
Lead Soldering Time at 260 °C	10 sec

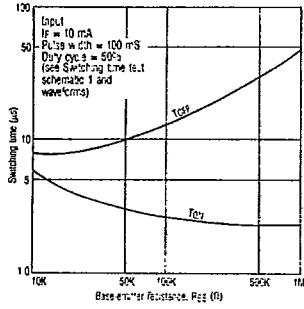
Electrical Characteristics (T_{amb} = 25°C)

Parameter	Min	Typ	Max	Unit	Test Condition
Gallium Arsenide LED					
*Forward Voltage		1.3	1.5	V	I _F = 50 mA
*Reverse Current	0.1		100	µA	V _R = 3.0 V
Capacitance			100	pF	V _R = 0
Phototransistor Detector					
H _{FE}			150		V _{CE} = 5.0 V
*BV _{CEO}	30			V	I _C = 1 mA
*BV _{ECB}	7			V	I _E = 100 µA
*BV _{CBO}	70			V	I _C = 100 µA
*I _{CEO} (dark)				nA	V _{CE} = 10 V
4N25			5		(base open)
4N26, 4N27			50		V _{CB} = 10 V
4N28			100		(emitter open)
*I _{CBO} (dark)			2		V _{CE} = 10 V
Collector-Emitter Capacitance		2		pF	V _{CE} = 0
Coupled Characteristics					
*DC Current Transfer Ratio					
4N25, 4N26	0.2	0.5			I _F = 10 mA, V _{CE} = 10 V
4N27, 4N28	0.1	0.3			I _F = 10 mA, V _{CE} = 10 V
Capacitance, Input to Output		0.5		pF	
Breakdown Voltage					
*4N25	2500			V	Peak, 60 Hz
*4N26, 4N27	1500			V	Peak, 60 Hz
*4N28	500			V	Peak, 60 Hz
UL Qualified for		7500		VDC	
*Resistance, Input to Output					
Rise and Fall Times	100			GΩ	
		2		µs	I _F = 10 mA, V _{CE} = 10 V
*Collector-Emitter Saturation Voltage			0.5	V	I _F = 50 mA, I _C = 2.0 mA

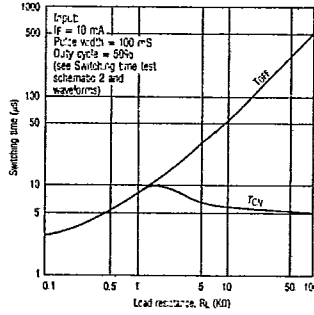
*Indicates JEDEC registered values

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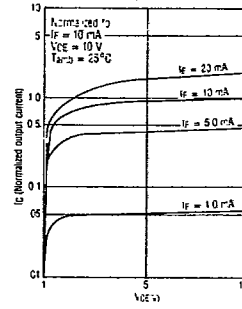
Typical switching characteristics versus load resistance (Saturated operation)



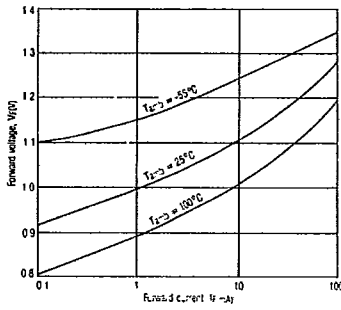
Typical switching times versus load resistance



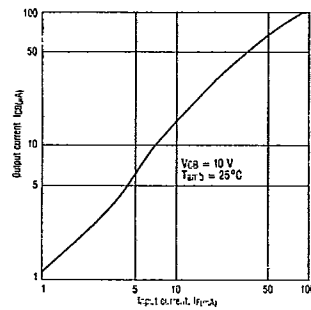
Collector current versus collector voltage



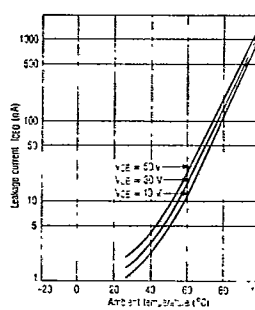
Typical forward voltage versus forward current



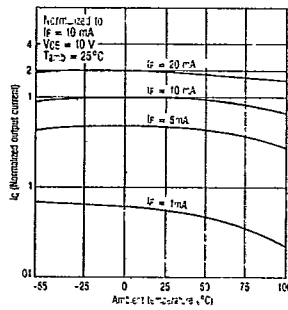
Typical output current (IC) versus input current



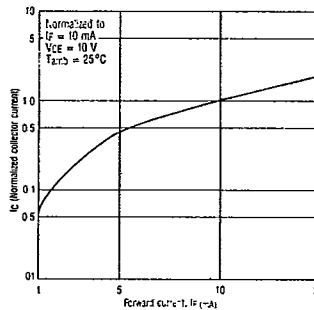
Typical leakage current versus ambient temperature



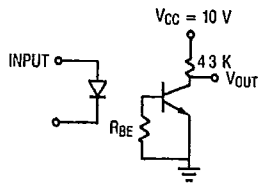
Output current versus temperature



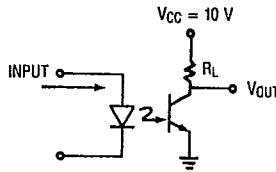
Collector current versus diode forward current



Switching time test schematic and waveforms



Switching time test schematic 1



Switching time test schematic 2

