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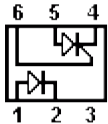
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H11M3, H11M4

Optoisolator GaAlAs Infrared Emitting Diode and Light Activated SCR

Circuit



Features

- High blocking voltage, 600 V minimum
- High isolation voltage, 3750 Vrms minimum (steady state)
- High efficiency, low degradation, liquid epitaxial IRED
- Logic compatible drive current, 7 mA at 1.5 V maximum
- Unique, high performance glass dielectric construction

Description

The H11M4-H11M6 contain a gallium-aluminium-arsenide infrared emitting diode coupled to a unique high voltage silicon controlled rectifier within a dual in-line package. These devices are optimised for high performance and long life. They are especially suited for the control of industrial AC power lines from low voltage logic integrated circuitry. Surface Mount Option Available.

All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

Absolute Maximum Ratings: (Ta=25°C)

Storage Temperature:	-55°C to +150°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	260°C for 10s
Surge Isolation Voltage (Input to Output):	5656 V _{peak} ; 4000 V _{rms} ; (note 1)
Steady-State Isolation Voltage (Input to Output):	5300 V _{peak} ; 3750 V _{rms} ; (note 1)

Input Diode

Power Dissipation:	100mW
Derate Linearly:	1.33mW/°C above 25°C
Forward DC Current:	60mA
Forward Current (Peak):	1A (10µs 1% duty cycle)
Reverse Voltage:	6V

Output Photo SCR

Peak Forward Voltage:	600V
RMS Forward Current:	300mA
Peak On-State Current (1 cycle surge, 10ms):	3A
Peak Reverse Gate Voltage:	5V
Power Dissipation:	400mW
Derate Linearly:	5.3mW/°C above 25°C

Electro-optical Characteristics: (Ta=25°C)

EMITTER	PARAMETER	CONDITIONS	VALUE	
V _F	Forward Voltage	I _F =10mA	1.3 V	Typ
			1.65 V	Max
I _R	Reverse Current	V _R =5V	10 µA	Max
C _J	Capacitance	V _{AK} =0V, f=1MHz	50 pF	Typ
DETECTOR	PARAMETER	CONDITIONS	VALUE	
V _{DM}	Off-State Voltage	R _{GK} =10kohm, I _D =100µA, T _A =100°C	600 V	Min
V _{RM}	Reverse Voltage	R _{GK} =10kohm, I _R =100µA, T _A =100°C	600 V	Min
V _{TM}	On-State Voltage	I _{TM} =300mA	1.6 V	Max
I _{DM}	Off-State Current	R _{GK} =10kohm, V _{DM} =600V, @ T _A =100°C	100 µA	Max
		...@ T _A =25°C	400 nA	Max
I _{RM}	Reverse Current	R _{GK} =10kohm, V _{RM} =600V, @ T _A =100°C	100 µA	Max
		...@ T _A =25°C	400 nA	Max
dV/dt	Critical Rate-of-Rise of Off-State Voltage	V _{AK} =600V, R _{GK} =10kohm	25 V/µs	Typ
I _H	Holding Current	R _{GK} =10kohm	2 mA	Max
COUPLED	PARAMETER	CONDITIONS	VALUE	

I _{FT}	Input Current to Trigger			
	H11M3	V _{AK} =6V, R _{GK} =10kohm	10 mA	Max
	H11M4		20 mA	Max
	H11M3	V _{AK} =6V, R _{GK} =27kohm	7 mA	Max
H11M4	15 mA		Max	
R _{IO}	Isolation Resistance (Input to Output)	V _{IO} =500V, (note 1)	100 Gohm	Min
C _{IO}	Isolation Capacitance (Input to Output)	V _{IO} =0, f=1MHz, (note 1)	2 pF	Max
	Isolation dV/dt Immunity (Input to Output)	Figure 10	500 V/μs	Min

Notes

1. Measured with input leads shorted together and output leads shorted together.

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