

SIEMENS

H11C4/H11C5/H11C6

Photo SCR Optocoupler

FEATURES

- Turn On Current (IFT), 5.0 mA Typical
- Gate Trigger Current (IGT), 20 mA Typical
- Surge Anode Current, 5.0 A
- Blocking Voltage, 400 V Gate Trigger Voltage (VGT), 0.6 V Typical
- Isolation Voltage, 5300 VAC_{RMS}
- Solid State Reliability
- Standard DIP Package
- Underwriters Lab File #E52744

DESCRIPTION

The H11C4/H11C5/H11C6 are optically coupled SCRs with a Gallium Arsenide infrared emitter and a silicon photo SCR sensor. Switching can be achieved while maintaining a high degree of isolation between triggering and load circuits. These optocouplers can be used in SCR triac and solid state relay applications where high blocking voltages and low input current sensitivity are required.

The H11C4 and H11C5 has a maximum turn-on-current of 11 mA. The H11C6 has a maximum of 14 mA.

Maximum Ratings

Emitter

- Peak Reverse Voltage 6.0 V
- Continuous Forward Current 60 mA
- Peak Forward Current
(1 ms, 1% Duty Cycle) 3.0 A
- Power Dissipation at 25°C 100 mW
- Derate Linearly from 25°C 1.33 mW/°C

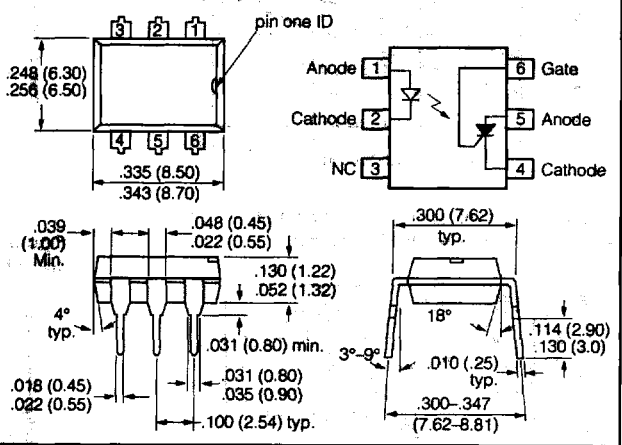
Detector

- Reverse Gate Voltage 6.0 V
- Anode Voltage (DC or AC Peak) 400 V
- RMS Forward Current 300 mA
- Surge Anode Current (10 ms duration) 5.0 A
- Peak Forward Current
(100 μs, 1% Duty Cycle) 10 A
- Surge Gate Current (5 ms duration) 200 mA
- Power Dissipation, 25°C case 1000 mW
- Derate Linearly from 25°C 13.3 mW/°C

Package

- Isolation Test Voltage 5300 VAC_{RMS}
(between emitter and detector referred to Standard Climate 23°C/50%RH, DIN 50014)
- Creepage min. 7 mm
- Clearance min. 7 mm
- Comparative Tracking Index per
DIN IEC 112/VDE 0303, part 1 175
- Isolation Resistance
V_{IO}=500 V, T_A=25°C ≥10¹² Ω
V_{IO}=500 V, T_A=100°C ≥10¹¹ Ω
- Total Package Dissipation 400 mW
- Derate Linearly from 25°C 5.3 mW/°C
- Operating Temperature Range -55°C to +100°C
- Storage Temperature Range -55°C to +150°C
- Lead Soldering Time at 260°C 10 sec.

Dimensions in Inches (mm)



Characteristics T_A=25°C

	Sym	Min.	Typ.	Max.	Unit	Condition
Emitter						
Forward Voltage	V _F		1.2	1.5	V	I _F =10 mA
Reverse Current	I _R			10	μA	V _R =3 V
Capacitance	C _O		50		pF	V _R =0, f=1 MHz
Detector						
Forward Blocking Voltage	V _{DM}	400			V	R _{GK} =10 KΩ T _A =100°C
Reverse Blocking Voltage	V _{DM}	400			V	I _d =150 μA
On-state Voltage	V _t		1.1	1.3	V	I _T =300 mA
Holding Current	I _H			500	μA	R _{GK} =27 KΩ V _{FX} =50 V
Gate Trigger Voltage	V _{GT}		0.6	1.0	V	V _{FX} =100 V R _{GK} =27 KΩ R _L =10 KΩ
Forward Leakage Current	I _R		150		μA	R _{GK} =10 KΩ V _{RM} =400 V I _F =0, T _A =100°C
Reverse Leakage Current	I _R		150		μA	R _{GK} =10 KΩ V _{FX} =400 V I _F =0, T _A =100°C
Gate Trigger Current	I _{GT}		20	50	μA	V _{FX} =100 V R _{GK} =27 KΩ, R _L =10 KΩ
Capacitance Anode to Gate Gate to Cathode			20 350		pF pF	V=0, f=1 MHz
Package						
Turn-On Current H11C4/H11C5 H11C6	I _{FT}			20 30	mA mA	V _{DM} =50 V R _{GK} =10 KΩ
Turn-On Current H11C4/H11C5 H11C6	I _{FT}		5 7	11 14	mA mA	V _{DM} =100 V R _{GK} =27 KΩ