IL400

Photo SCR Optocoupler

FEATURES

- **Turn On Current (I_{FT}), 5.0 mA Typical**
- **Gate Trigger Current (I_{GT}), 20 µA**
- **Surge Anode Current, 1.0 Amp**
- **Blocking Voltage, 400 V**
- **Gate Trigger Voltage (V_{GT}), 0.6 Volt**
- **Isolation Voltage, 5300 V_{RMS}**
- **Solid State Reliability**
- **Standard DIP Package**
- **Underwriters Lab File #E52744**
- **VDE Approval #0884**
  Available with Option 1

DESCRIPTION

The IL400 is an optically coupled SCR 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. The IL400 can be used in SCR triac and solid state relay applications where high blocking voltages and low input current sensitivity are required.

Maximum Ratings

Emitter

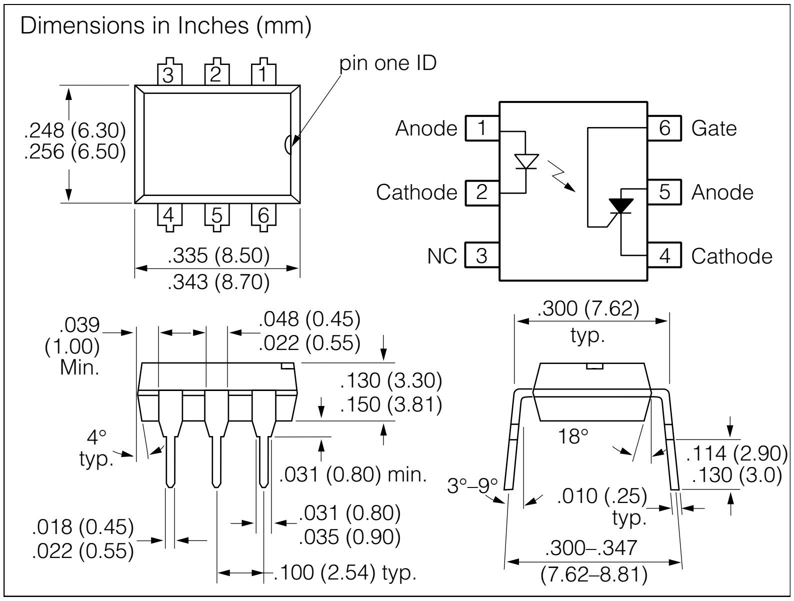
Peak Reverse Voltage	6.0 V
Peak Forward Current (100 µs, 1% Duty Cycle)	1.0 A
Continuous Forward Current	60 mA
Power Dissipation at 25°C	100 mW
Derate Linearly from 25°C	1.3 mW/°C

Detector

Reverse Gate Voltage	6.0 V
Anode Voltage (DC or AC Peak)	400 V
Anode Current	100 mA
Surge Anode Current (10 ms duration)	1.0 A
Surge Gate Current (5.0 ms duration)	200 mA
Power Dissipation, 25°C ambient	200 mW
Derate Linearly from 25°C	2.11 mW/°C

Package

Isolation Voltage	5300 V_{RMS}
Isolation Resistance	
V_{IO}=500 V, T_A=25°C	min. 10^{12} Ω
V_{IO}=500 V, T_A=100°C	min. 10^{11} Ω
Total Package Dissipation	250 mW
Derate Linearly from 25°C	2.63 mW/°C
Operating Temperature	–55°C to +100°C
Storage Temperature	–55°C to +150°C


Dimensions in Inches (mm)

Characteristics T_A=25°C

	Symbol	Min.	Typ.	Max.	Unit	Condition
Emitter						
Forward Voltage	V_F	—	1.2	1.5	V	I_F=20 mA
Reverse Voltage	V_R	5.0	—	—	V	I_R=10 µA
Reverse Current	I_R	—	—	10	µA	V_R=5.0 V
Detector						
Forward Blocking Voltage	V_{DRM}	400	—	—	V	R_{GK}=10 KΩ T_A=100°C I_d=150 µA
Reverse Blocking Voltage	V_{DRRM}	400	—	—	V	R_{GK}=10 KΩ T_A=100°C I_d=150 µA
On-state Voltage	V_t	—	—	1.2	V	I_T=100 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_D	—	0.2	2.0	µA	R_{GK}=27 KΩ V_{RX}=400 V I_F=0, T_A=25°C
Reverse Leakage Current	I_R	—	0.2	2.0	µA	R_{GK}=27 KΩ V_{RX}=400 V I_F=0, T_A=25°C
Gate Trigger Current	I_{GT}	—	20	50	µA	V_{FX}=100 V R_{GK}=27 KΩ, R_L=10 KΩ
Package						
Turn-0n Current	I_{FT}	0.5	5.0	10.0	mA	V_{FX}=100 V R_{GK}=27 KΩ
Isolation Capacitance	—	—	—	2	pF	f=1.0 MHz