



6-Pin DIP Optoisolators SCR Output

These devices consist of gallium-arsenide infrared emitting diodes optically coupled to photo sensitive silicon controlled rectifiers (SCR). They are designed for applications requiring high electrical isolation between low voltage circuitry, like integrated circuits, and the ac line.

- High Blocking Voltage of 200 V for 120 Vac Lines
- Very High Isolation: $V_{ISO} = 7500$ Vac (pk) Min
- Standard 6-Pin DIP
- UL Recognized, File Number E54915 
- VDE approved per standard 0883/6.80 (Certificate number 41853), with additional approval to DIN IEC380/VDE0806, IEC435/VDE0805, IEC65/VDE0860, VDE110b, covering all other standards with equal or less stringent requirements, including IEC204/VDE0113, VDE0160, VDE0832, VDE0833, etc. 
- Special lead form available (add suffix "T" to part number) which satisfies VDE0883/6.80 requirement for 8 mm minimum creepage distance between input and output solder pads.
- Various lead form options available. Consult "Optoisolator Lead Form Options" data sheet for details.

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
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INPUT LED

Reverse Voltage	V_R	7	Volts
Forward Current — Continuous	I_F	60	mA
LED Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	120 1.41	mW mW/°C

OUTPUT DETECTOR

Peak Forward Voltage	V_{DM}	200	Volts
Forward RMS Current (Full Cycle, 50 to 60 Hz) $T_A = 25^\circ\text{C}$	$I_T(\text{RMS})$	300	mA
Peak Nonrepetitive Surge Current (PW = 10 ms)	I_{TSM}	3	A
Detector Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	150 1.76	mW mW/°C

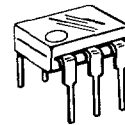
TOTAL DEVICE

Isolation Surge Voltage (1) (Peak ac Voltage, 60 Hz, 1 Second Duration)	V_{ISO}	7500 (2)	Vac
Total Device Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	250 2.94	mW mW/°C
Junction Temperature Range	T_J	-40 to +100	°C
Ambient Operating Temperature Range	T_A	-55 to +100	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Soldering Temperature (10 s)	—	260	°C

(1) Isolation surge voltage, V_{ISO} , is an internal device dielectric breakdown rating.
 (2) Originator's Specifications are: H11C1 — 2500 V, H11C2 and H11C3 — 2100 V.

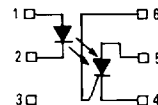
H11C1
H11C2
H11C3

6-PIN DIP
OPTOISOLATORS
SCR OUTPUT
200 VOLTS



CASE 730A-02
PLASTIC

SCHEMATIC



1. LED ANODE
2. LED CATHODE
3. NC
4. SCR CATHODE
5. SCR ANODE
6. SCR GATE

H11C1, H11C2, H11C3

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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INPUT LED

Reverse Leakage Current (V _R = 3 V)	I _R	—	0.05	10	μA
Forward Voltage (I _F = 10 mA)	V _F	—	1.2	1.5	Volts
Capacitance (V = 0 V, f = 1 MHz)	C _J	—	18	—	pF

OUTPUT DETECTOR

Peak Off-State Voltage (R _{GK} = 10 kΩ, T _A = 100°C)	V _{DM}	200	—	—	Volts
Peak Reverse Voltage (R _{GK} = 10 kΩ, T _A = 100°C)	V _{RM}	200	—	—	Volts
On-State Voltage (I _{TM} = 0.3 A)	V _{TM}	—	1.1	1.3	Volts
Off-State Current (V _{DM} = 200 V, T _A = 100°C)	I _{DM}	—	—	50	μA
Reverse Current (V _{RM} = 200 V, T _A = 100°C)	I _{RM}	—	—	50	μA
Capacitance (V = 0 V, f = 1 MHz) Anode — Gate Gate — Cathode	C _J	—	20 350	—	pF

COUPLED

LED Current Required to Trigger (V _{AK} = 50 V, R _{GK} = 10 kΩ)	H11C1, H11C2 H11C3	I _{FT}	— —	10 15	20 30	mA
(V _{AK} = 100 V, R _{GK} = 27 kΩ)	H11C1, H11C2 H11C3		— —	6 8	11 14	
Isolation Resistance (V _{IO} = 500 Vdc)		R _{ISO}	100	—	—	GΩ
Capacitance Input to Output (V _{IO} = 0, f = 1 MHz)		C _{ISO}	—	0.2	2	pF
Coupled dv/dt, Input to Output (R _{GK} = 10 kΩ)		dv/dt	—	500	—	Volts/μs
Isolation Surge Voltage (Peak ac Voltage, 60 Hz, 1 Second Duration)		V _{ISO}	7500	—	—	Vac(pk)

H11C1, H11C2, H11C3

TYPICAL ELECTRICAL CHARACTERISTICS

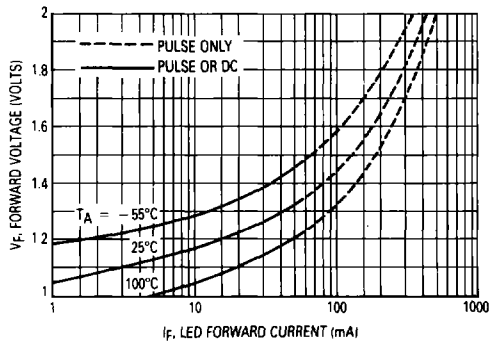


Figure 1. LED Forward Voltage versus Forward Current

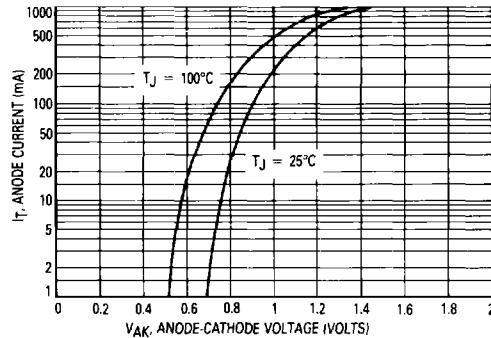


Figure 2. Anode Current versus Anode-Cathode Voltage

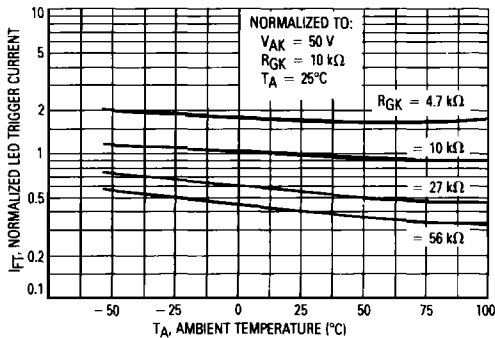


Figure 3. LED Trigger Current versus Temperature

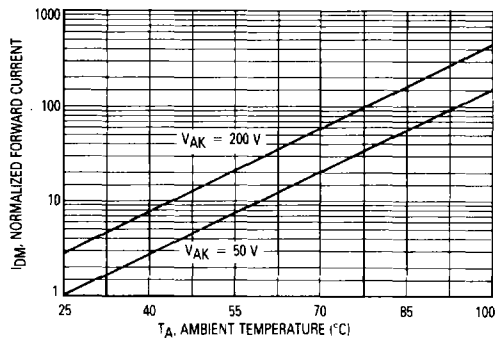


Figure 4. Forward Leakage Current versus Temperature

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OUTLINE DIMENSIONS

