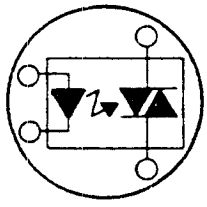


OPTICALLY COUPLED TRIAC DRIVER

OPTICALLY ISOLATED TRIAC DRIVER

An infrared LED and a bidirectional photodetector in one 7500 V isolated plastic DIP allows safe, economical triggering of Triacs and SCRs from logic sources as low as 3 Volts, 15 mA.

OPTICALLY ISOLATED ZERO CROSSING TRIAC DRIVERS*

Package	Device Type	Isolation Voltage Volts Min	Typ LED Trigger Current I_{FT} mA	Peak Blocking Voltage Volts
Plastic DIP Case 730A-01	MOC3009	7500	30	250
	MOC3010	7500	15	250
	MOC3011	7500	10	250
	MOC3020	7500	30	400
	MOC3021	7500	15	400
	MOC3030*†	7500	30	250
	MOC3031*†	7500	15	250
	MOC3040*†	7500	30	400
	MOC3041*†	7500	15	400

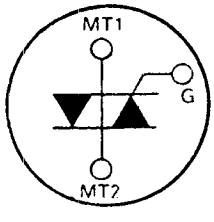
* Underwriters' Laboratories Recognition. File No. E65915.
† With zero crossing detector.

TRIACs COMPATIBLE ZERO CROSSING MOC3030/31 AND MOC3040/41 OPTO COUPLERS

For applications requiring zero crossing firing, the MAC3030 series triacs and MOC3030/31 couplers offer full-wavw 110 Vac control, 7500 V isolation and load independence. For 220 Vac control, use MAC3040 series triacs and MOC3040/41 couplers.

TRIACs COMPATIBLE WITH MOC3030/31 AND 3040/41

Package	Device Type 250 V	Device Type 400 V	RMS Current A Max
TO-126/Case 77-04	MAC3030-4	MAC3040-4	4.0
TO-220/Case 221A-02	MAC3030-8	MAC3040-8	8.0
TO-220/Case 221A-02	MAC3030-15	MAC3040-15	15
TO-220/Case 221A-02	MAC3030-25	MAC3040-25	25
Case 263-04	MAC3030-40	MAC3040-40	40
Case 311-02 (Isolated)	MAC3030-40I	MAC3040-40I	40



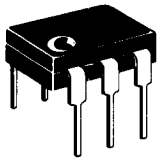
TRIACs

TRIACs COMPATIBLE WITH MOC3009/10/11 AND MOC3020/21 OPTO COUPLERS

For applications requiring 110 Vac control, the MAC3010 series triacs and MOC3009/10/11 couplers offer 7500 V isolation and load independence in either the hot or the ground line. For 220 Vac control, use MAC3020 series triacs and MOC3020/21 couplers.

TRIACs COMPATIBLE WITH MOC3009/10/11 AND 3020/21

Package	Device Type 250 V	Device Type 400 V	RMS Current A Max
TO-126/Case 77-04	MAC3010-4	MAC3020-4	4.0
TO-220/Case 221A-02	MAC3010-8	MAC3020-8	8.0
TO-220/Case 221A-02	MAC3010-15	MAC3020-15	15
TO-220/Case 221A-02	MAC3010-25	MAC3020-25	25
Case 263-04	MAC3010-40	MAC3020-40	40
Case 311-02 (Isolated)	MAC3010-40I	MAC3020-40I	40



CASE 730A-01

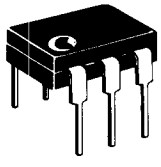
Style 5:
Pin 1. Anode
2. Cathode
3. NC
4. Output
5. Ground
6. V_{CC}

Style 8:
Pin 1. LED 1 Anode/LED 2 Cathode
2. LED 1 Cathode/LED 2 Anode
3. NC
4. Emitter
5. Collector
6. Base

Schmitt Trigger Output — Style 5

Device	Threshold Current ON mA Max	Threshold Current Off mA Min	$I_{F(off)}/I_{F(on)}$ Min	$I_{F(off)}/I_{F(on)}$ Max	V_{CC} Min	V_{CC} Max	t_r, t_f μs Typ	V_{ISO} Vac pk Min Industry	V_{ISO} Vac pk Min Motorola
H11L1	1.6	0.3	0.5	0.9	3.0	15	0.1	3535	7500
H11L2	10	0.3	0.5	0.9	3.0	15	0.1	3535	7500
MOC5007	1.6	0.3	0.5	0.9	3.0	15	0.1		7500
MOC5008	4.0	0.3	0.5	0.9	3.0	15	0.1		7500
MOC5009	10	0.3	0.5	0.9	3.0	15	0.1		7500

3



CASE 730A-01

Style 6:
Pin 1. Anode
2. Cathode
3. NC
4. Main Terminal
5. Substrate
6. Main Terminal

Style 7:
Pin 1. LED Anode
2. LED Cathode
3. NC
4. SCR Cathode
5. SCR Anode
6. SCR Gate

Triac Driver Output — Style 6

Device	Peak Blocking Voltage Min	LED Trigger Current-I_{FT} (V_{TM} = 3.0 V) mA Max	Zero Crossing Inhibit Voltage (at rated I_{FT}) Volts Max	Surge Isolation Voltage Vac pk Min Industry	Surge Isolation Voltage Vac pk Min Motorola	dv/dt V/μs Typ
H11J1	250	10	—	5656	7500	2.0
H11J2	250	15	—	5656	7500	2.0
H11J3	250	10	—	3535	7500	2.0
H11J4	250	15	—	3535	7500	2.0
H11J5	250	25	—	2120	7500	2.0
MOC3009	250	30	—		7500	2.0
MOC3010	250	15	—		7500	2.0
MOC3011	250	10	—		7500	2.0
MOC3012	250	5.0	—		7500	2.0
MOC3020	400	30	—		7500	10
MOC3021	400	15	—		7500	10
MOC3022	400	10	—		7500	10
MOC3023	400	5.0	—		7500	10
MOC3030	250	30	25		7500	100
MOC3031	250	15	25		7500	100
MOC3032	250	10	25		7500	100
MOC3040	400	30	40		7500	100
MOC3041	400	15	40		7500	100
MOC3060	600	30	20		7500	500
MOC3061	600	15	20		7500	500
MOC3062	600	10	20		7500	500
MOC3063	600	5	20		7500	500