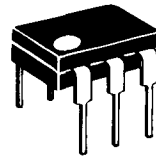
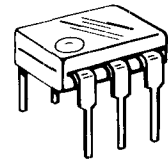


# Optoisolators



Case 730A-02



An optoisolator consists of a gallium arsenide infrared emitting diode, IRED, optically coupled to a monolithic silicon photo-detector in a light-shielding package. Motorola offers a wide array of standard devices and encourages the use of special designs and selections for

special applications. All Motorola optoisolators are UL Recognized per File Number 54915 and VDE approved per Certificate Number 41853; all have  $V_{ISO}$  rating of 7500 Vac(pk), exceeding all other industry standard ratings.

Table 33. Transistor Output

Device	Current Transfer Ratio (CTR)			$V_{ISO}$ Vac Pk	$V_{CE(sat)}$			$t_r, t_f, t_{on}, t_{off}^*$ Typ					$V_{(BR)CEO}$ Volts Min	$V_F$	
	% Min	@ $I_F$ mA	$V_{CE}$ Volts		Volts Max	@ $I_F$ mA	$I_C$ mA	$\mu s$	@ $I_C$ mA	$V_{CC}$ Volts	$R_L$ $\Omega$	$I_F$ mA		Volts Max	@ $I_F$ mA
TIL112	2	10	5	1500	0.5	50	2	2	2	10	100	20	1.5	10	
TIL115	2	10	5	2500	0.5	50	2	2	2	10	100	20	1.5	10	
TIL111	8	16	0.4	1500	0.4	16	2	5	2	10	100	30	1.4	16	
TIL114	8	16	0.4	2500	0.4	16	2	5	2	10	100	30	1.4	16	
4N27	10	10	10	1500	0.5	50	2	2/8	10	10		30	1.5	10	
4N28	10	10	10	500	0.5	50	2	2/8	10	10		30	1.5	10	
4N38,A	10	10	10	2500	1	20	4	0.8/7	10	10		80	1.5	10	
H11A4	10	10	10	1500	0.4	10	0.5	2	2	10	100	30	1.5	10	
4N25,A	20	10	10	2500	0.5	50	2	0.8/8	10	10		30	1.5	10	
4N26	20	10	10	1500	0.5	50	2	0.8/8	10	10		30	1.5	10	
H11A2	20	10	10	1500	0.4	10	0.5	2	2	10	100	30	1.5	10	
H11A3	20	10	10	2500	0.4	10	0.5	2	2	10	100	30	1.5	10	
H11A520	20	10	10	5656	0.4	20	2	5*	2*	10*	100*	30	1.5	10	
H11AV3,A	20	10	10	7500	0.4	20	2	5*	2*	10*	100*	70	1.5	10	
MCT2	20	10	10	2500(R)	0.4	16	2	10*/30*		5*	2k*	15*	30	1.5	20
MCT2E	20	10	10	3000(R)	0.4	16	2	2.6	2	10	100	30	1.5	20	
TIL116	20	10	10	2500	0.4	15	2.2	5	2	10	100	30	1.5	60	
H11A5	30	10	10	1500	0.4	10	0.5	2	2	10	100	30	1.7	10	
CNY17-1	40-80	10	5	7500	0.4	10	2.5	5.6*/4.1*		5*	75*	10*	70	1.65	60
MCT271	45-90	10	10	3000(R)	0.4	16	2	4.9*/4.5*	2*	5*	100*	30	1.5	20	
MOC8100	50	1	5		0.5	1	0.1	20*	2*	10*	100*	30	1.4	1	
H11A1	50	10	10	2500	0.4	10	0.5	2	2	10	100	30	1.5	10	
H11A550	50	10	10	5656	0.4	20	2	5*	2*	10*	100	30	1.5	10	
H11AV2,A	50	10	10	7500	0.4	20	2	5*	2*	10*	100*	70	1.5	10	
TIL117	50	10	10	2500	0.4	10	0.5	5	2	10	100	30	1.4	16	
TIL126	50	10	10	5000	0.4	10	1	2	2	10	100	30	1.4	10	
CNY17-2	63-125	10	5	5000	0.4	10	2.5	5.6*/4.1*		5*	75*	10*	70	1.65	60
MCT275	70-210	10	10	3000(R)	0.4	16	2	4.5*/3.5*	2*	5*	100*	80	1.5	20	
MCT272	75-150	10	10	3000(R)	0.4	16	2	6*/5.5*	2*	5*	100*	30	1.5	20	
4N35	100	10	10	3500	0.3	10	0.5	4*	2*	10*	100*	30	1.5	10	
4N36	100	10	10	2500	0.3	10	0.5	4*	2*	10*	100*	30	1.5	10	
4N37	100	10	10	1500	0.3	10	0.5	4*	2*	10*	100*	30	1.5	10	
H11A5100	100	10	10	5656	0.4	20	2	5*	2*	10*	100*	30	1.5	10	
CNY17-3	100-200	10	5	5000	0.4	10	2.5	5.6*/4.1*		5*	75*	10*	70	1.65	60
H11AV1,A	100-300	10	10	7500	0.4	20	2	5*	2*	10*	100*	70	1.5	10	
MCT273	125-250	10	10	3000(R)	0.4	16	2	7.6*/6.6*	2*	5*	100*	30	1.5	20	
MCT274	225-400	10	10	2500(R)	0.4	16	2	9.1*/7.9*	2*	5*	100*	30	1.5	20	

(R) = RMS (D) = DC \* $t_{on}, t_{off}$

Optoisolators (continued)

Table 39. High Voltage Transistor Output

MOC8204	20	10	10		0.4	10	0.5	5*	2*	10*	100*		400	1.5	10
H11D1	20	10	10	3500	0.4	10	0.5	5*	2*	10*	100*		300	1.5	10
H11D2	20	10	10	2500	0.4	10	0.5	5*	2*	10*	100*		300	1.5	10
H11D3	20	10	10	2500	0.4	10	0.5	5*	2*	10*	100*		200	1.5	10
H11D4	10	10	10	2500	0.4	10	0.5	5*	2*	10*	100*		200	1.5	10
4N38	10	10	10	1500	1	20	4	0.8/7	10	10			80	1.5	10
4N38A	10	10	10	2500	1	20	4	0.8/7	10	10			80	1.5	10
MCT275	70-210	10	10	3000(R)	0.4	16	2	4.5*/3.5*	2*	5*	100*		80	1.5	20

Table 40. Triac Driver Output

Device	Peak Blocking Voltage Min	LED Trigger Current-I <sub>FT</sub> (V <sub>TM</sub> = 3 V) mA Max	Zero Crossing Inhibit Voltage (at rated I <sub>FT</sub> ) Volts Max	V <sub>ISO</sub> Vac Pk	dv/dt V/μs Typ
MOC3009	250	30	—	7500	10
MOC3010	250	15	—	7500	10
MOC3011	250	10	—	7500	10
MOC3012	250	5	—	7500	10
MOC3020	400	30	—	7500	10
MOC3021	400	15	—	7500	10
MOC3022	400	10	—	7500	10
MOC3023	400	5	—	7500	10
MOC3031	250	15	20	7500	100
MOC3032	250	10	20	7500	100
MOC3033	250	5	20	7500	100
MOC3041	400	15	20	7500	100
MOC3042	400	10	20	7500	100
MOC3043	400	5	20	7500	100
MOC3061	600	15	20	7500	1500
MOC3062	600	10	20	7500	1500
MOC3063	600	5	20	7500	1500
MOC3081	800	15	20	7500	1500
MOC3082	800	10	20	7500	1500
MOC3083	800	5	20	7500	1500

Table 41. SCR Output

Device	Peak Blocking Voltage Min	LED Trigger Current-I <sub>FT</sub> (V <sub>AK</sub> = 50 V) mA Max	V <sub>ISO</sub> Vac Pk	dv/dt V/μs Typ
4N39	200	30	1500	500
4N40	400	30	1500	500
H11C1	200	20	3535	500 Min
H11C2	200	20	2500	500 Min
H11C3	200	30	2500	500 Min
H74C1	200	(TTL drive)	2500	
MCS2	200	14(V <sub>AK</sub> = 100 V)	3000 RMS	
MCS2400	400	14(V <sub>AK</sub> = 100 V)	3000 RMS	
MOC3000	400	20	7500	500
MOC3001	400	30	7500	500
MOC3002	250	30	7500	500
MOC3003	250	20	7500	500
MOC3007	200	40	7500	500
H11C4	400	20	3535	500
H11C5	400	20	2500	500
H11C6	400	30	2500	500

Table 42. Schmitt Trigger Output

Device	Threshold Current On mA Max	Threshold Current Off mA Min	I <sub>F(off)</sub> /I <sub>F(on)</sub>		V <sub>CC</sub>		t <sub>r</sub> , t <sub>f</sub> μs Typ	V <sub>ISO</sub> Vac Pk
			Min	Max	Min	Max		
H11L1	1.6	0.3	0.5	0.9	3	15	0.1	3535
H11L2	10	0.3	0.5	0.9	3	15	0.1	3535
MOC5007	1.6	0.3	0.5	0.9	3	15	0.1	
MOC5008	4	0.3	0.5	0.9	3	15	0.1	
MOC5009	10	0.3	0.5	0.9	3	15	0.1	

(R) = RMS (D) = DC \*t<sub>on</sub>, t<sub>off</sub>