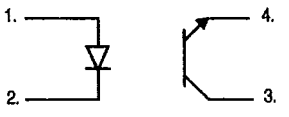
Characteristic		I_C ON				I_C OFF		t ON	t OFF	$V_{CE(SAT)}$			$V_{F(LED)}$		BV CEO	BV ECO	I_C	Sensor Aperture		Output
Test Conditions		V_{CE}, I_F As Shown, R_L = 0				V_{CE} As Shown, H = 0		I_F = 20mA, R_L = 1k Ω		I_C, I_F As Shown			I_F As Shown		I_C=1mA, I_F=0, H=0	I_C=100μA, I_F=0, H=0				
Units		mA			V	nA	V	μS		V (SAT)	mA	mA	V	mA	V		mA	IN.		
	HEI	MIN	TYP	I_F	V_{CE}	MAX	V_{CE}	(t_d+t_r) TYP	$(t_{st}+t_f)$ TYP	MAX	I_C	I_F	MAX	I_F	MIN	MIN	MAX			
PKG1	H21A1	1.0	2.4	20	5	100	25	25	25	.4	1.8	30	1.7	60	30	6	100	.039 dia.	1	Tran.
	H21A2	2	3.8	20	5	100	25	25	25	.4	1.8	20	1.7	60	30	6	100	.039 dia.	1	Tran.
	200	1.9	4.9	30	5	100	25	25	25	.4	1.8	30	1.6	30	30	6	100	.039 dia.	1	Tran.
	201	1.9	3.7	30	5	100	25	25	25	.4	1.8	30	1.6	30	30	6	100	.039 dia.	2	Tran.
	870A	.5	.770	20	10	100	10	25	25	.4	.400	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	871A	1.0	1.35	10	5	100	10	25	25	.4	.800	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	875A	.5	1.0	20	10	100	10	25	25	.4	.400	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	876A	1.0	1.48	10	5	100	10	25	25	.4	.800	10	1.7	20	30	5	100	.040 x .040	1	Tran.
	813S3	.075		20	10	100	10	25	25	.4	.04	20	1.7	20	30	5	100	.003 x .040	1	Tran.
	813S5	.250		20	10	100	10	25	25	.4	.125	20	1.7	20	30	5	50	.005 x .040	1	Tran.
	813S7	.350		20	10	100	10	25	25	.4	.175	20	1.7	20	30	5	50	.007 x .040	1	Tran.
	400	7.5	16	10	1.5	100	25	45	400	1.0	1.8	10	1.7	60	30	7	100	.039 dia.	3	Darl.
	401	7.5	14	10	1.5	100	25	45	400	1.0	1.8	10	1.7	60	30	7	100	.039 dia.	4	Darl.
	H21B1	7.5	22	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.
	H21B2	14	31	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.
SLOT.125	H21B3	25	40	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.
PKG2	H22A1	1.0	2.4	20	5	100	25	25	25	.4	1.8	30	1.7	60	30	6	100	.039 dia.	1	Tran.
	H22A2	2	3.8	20	5	100	25	25	25	.4	1.8	20	1.7	60	30	6	100	.039 dia.	1	Tran.
	100	1.9	4.9	30	5	100	25	25	25	.4	1.8	30	1.7	30	30	6	100	.039 dia.	1	Tran.
	101	1.9	3.7	30	5	100	25	25	25	.4	1.8	30	1.7	30	30	6	100	.039 dia.	2	Tran.
	870B	.5	.770	20	10	100	10	25	25	.4	.400	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	871B	1.0	1.35	10	5	100	10	25	25	.4	.800	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	875B	.5	1.0	20	10	100	10	25	25	.4	.400	10	1.7	20	30	5	100	.010 x .040	1	Tran.
	876B	1.0	1.48	10	5	100	10	25	25	.4	.800	10	1.7	20	30	5	100	.040 x .040	1	Tran.
	300	7.5	16	10	1.5	100	25	45	400	1.0	1.8	10	1.7	60	30	7	100	.039 dia.	3	Darl.
	301	7.5	14	10	1.5	100	25	45	400	1.0	1.8	10	1.7	60	30	7	100	.039 dia.	4	Darl.
	H22B1	7.5	22	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.
	H22B2	14	31	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.
SLOT.125	H22B3	25	40	10	1.5	100	25	45	400	1.0	1.8	60	1.7	60	30	7	100	.039 dia.	3	Darl.

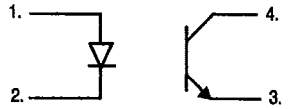
DISCONTINUED

TERMS AND SYMBOLS

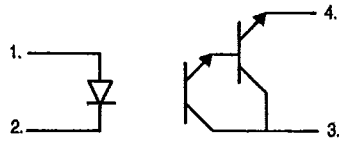
I_C ON	Light Current
I_C OFF	Dark Current
t_{ON}	Turn on Time
t_{OFF}	Turn off Time
BV_{CEO}	Breakdown Collector Emitter Voltage
BV_{ECO}	Breakdown Emitter Collector Voltage
$I_{L\ MAX}$	Maximum Light Current
V_{CC}	Operating Supply Voltage
I_{CCL}	Low Level Supply Current
I_{CCH}	High Level Supply Current
V_{OL}	Low Level Output Voltage
V_{OH}	High Level Output Voltage
$I_{F(+)}$	LED Positive-going Threshold Current
I_{OS}	Short Circuit Output Current
t_r/t_f	time rise, time fall
t_{PLH}	Propagation Time Low-High
t_{PHL}	Propagation Time High—Low
I_{CEO}	Collector Dark Current
$V_{CE\ (SAT)}$	Collector Emitter Saturation Voltage
V_F	Forward Voltage (Diode)
I_R	Reverse Current (Diode)
Hysterisis	I_{FLH}/I_{FHL} I_{FHL}/I_{FLH}



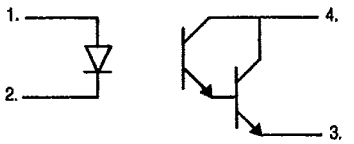
Schematic 1



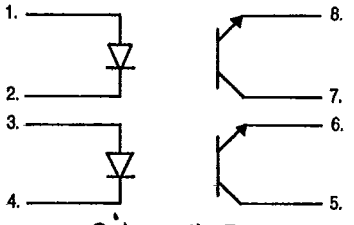
Schematic 2



Schematic 3

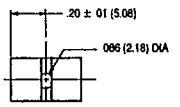


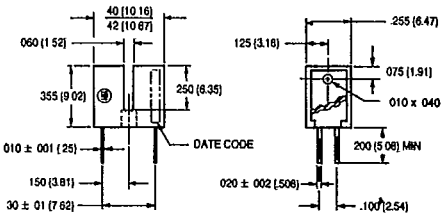
Schematic 4



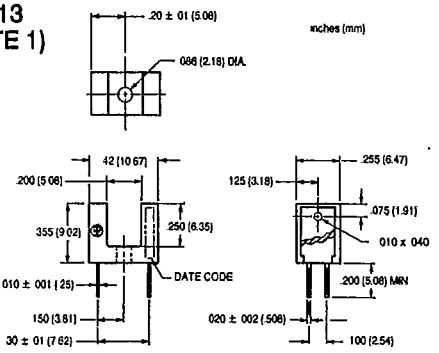
Schematic 5

PKG12
(NOTE 1)

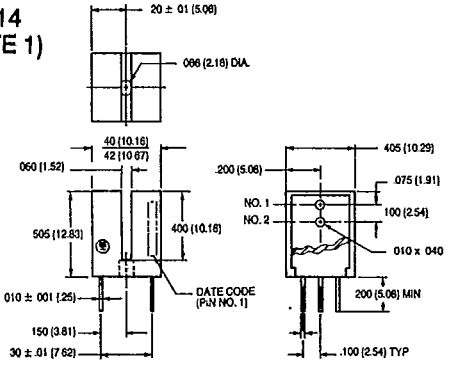




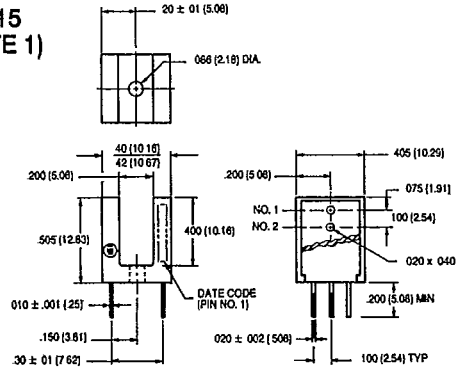
PKG13
(NOTE 1)



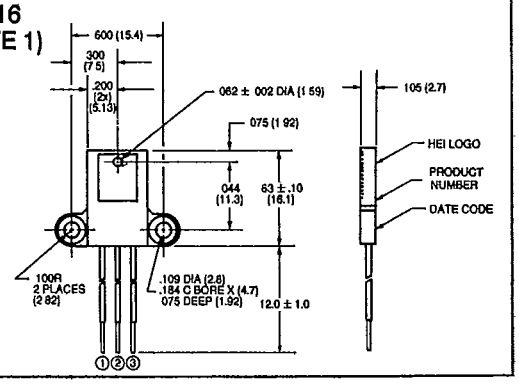
PKG14
(NOTE 1)



PKG15
(NOTE 1)



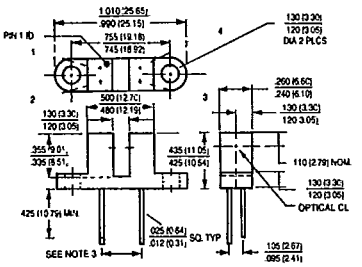
PKG16
(NOTE 1)



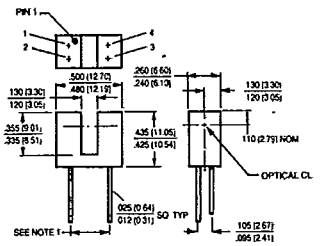
Dimensions: Inches (mm's)

NOTE 1: Housings made of opaque polycarbonate, provides complete protection from ambient light interference.

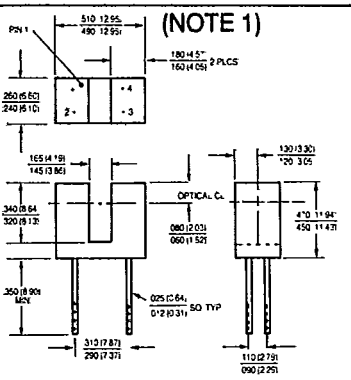
PKG1
(NOTE 1)



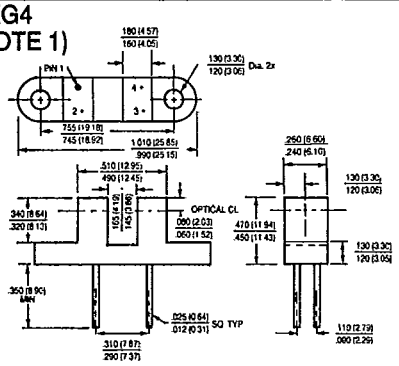
PKG2
(NOTE 1)



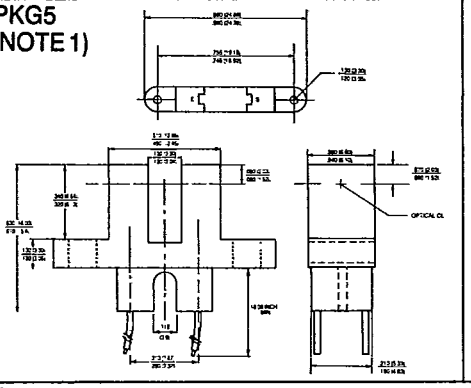
PKG3 (NOTE 1)



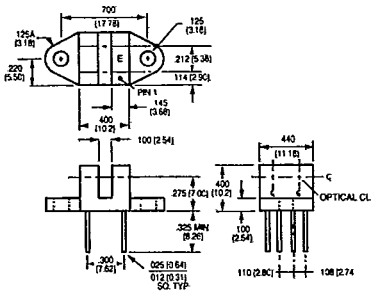
PKG4
(NOTE 1)



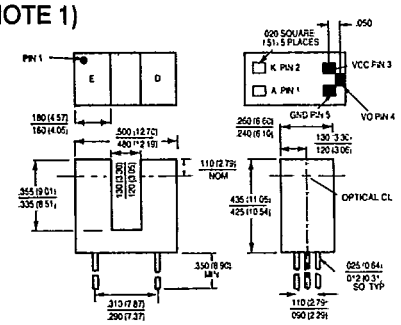
PKG5
(NOTE 1)



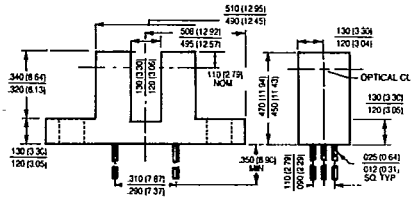
PKG6
(NOTE 1)

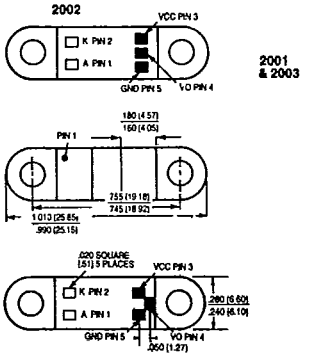


PKG7
(NOTE 1)

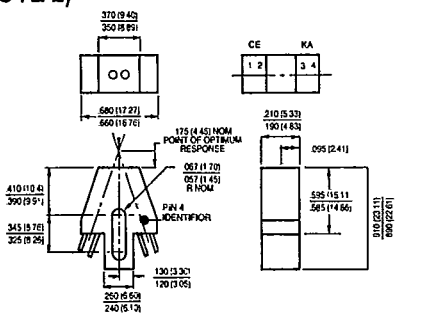


PKG8
(NOTE 1)

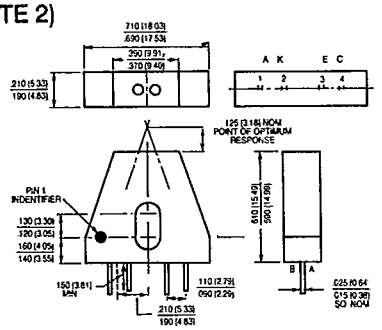




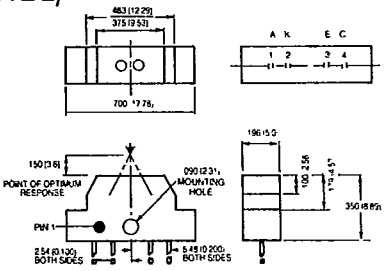
PKG9
(NOTE 2)



PKG10
(NOTE 2)



PKG11
(NOTE 2)



Dimensions: inches (mm's)
NOTE 1: Housing made of IR Transparent Polysulphone, reduces interference from dirt and dust accumulation.
NOTE 2: Housing made of Opaque Polycarbonate, provides complete protection from ambient light interference.

NOTE 3

LEAD SPACING		
HEI 100/101/200/201 870/871/H21A/H22A	.320 .290	(8.13) (7.37)
HEI 813/875/876	.230 .210	(5.84) (5.33)

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