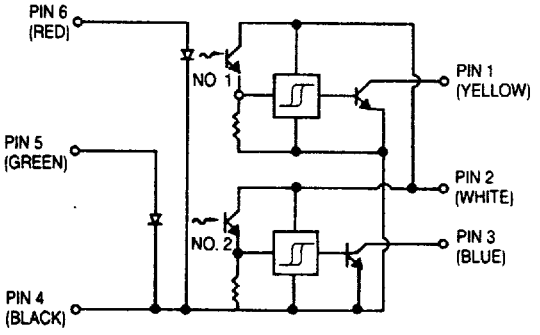
Characteristic		$I_{C\ ON}$				$I_{C\ OFF}$		t ON	t OFF	$V_{CE\ (SAT)}$		$V_{F\ (LED)}$		BV_{CEO}	BV_{ECO}	I_C	$I_{F\ (LED)}$		Output
Test Conditions		V_{CE}, I_F As Shown, R_L = 0				V_{CE} As Shown, I_F = 0		I_F = 20mA, R_L = 1k Ω		I_C As Shown, I_F = 35mA		I_F As Shown		I_C=1mA, I_F=0, H=0	I_C=100μA, I_F=0, H=0				
Units		mA			V	nA	V	μS		$V_{(SAT)}$	mA	V	mA	V		mA	mA		
	HEI	MIN	TYP	I_F	V_{CE}	MAX	V_{CE}	(t_d+t_r) TYP	$(t_{st}+t_f)$ TYP	MAX	I_C	MAX	I_F	MIN	MIN	MAX	MAX		
PKG12	10501	.5	1.0	30	5	100	5	200	300	.4	.5	1.5	40	20	5	15	50	12	Tran.
	*10503	.5	1.0	30	5	100	5	200	300	.4	.5	1.5	40	20	5	15	50	12	Tran.
	10509	1.5	2.0	30	5	100	5	350	350	1.0	.5	1.5	40	20	5	30	50	13	Darl.
	*10511	1.0	2.0	30	5	100	5	350	350	1.0	.5	1.5	40	20	5	30	50	13	Darl.
	10513	3.0	4.5	30	5	100	5	20	120	.1	.5	1.5	40	25	5	100	50	14	Amp.
SLOT.060	*10515	3.0	4.5	30	5	100	5	20	120	.1	.5	1.5	40	25	5	100	50	14	Amp.
PKG13	10502	.5	1.0	30	5	100	5	200	300	.4	.5	1.5	40	20	5	15	50	12	Tran.
	*10504	.5	1.0	30	5	100	5	200	300	.4	.5	1.5	40	20	5	15	50	12	Tran.
	10510	1.0	2.0	30	5	100	5	100	250	1.0	.5	1.5	40	20	5	30	50	13	Darl.
	*10512	1.0	2.0	30	5	100	5	100	200	1.0	.5	1.5	40	20	5	30	50	13	Darl.
	10514	3.0	4.5	30	5	100	5	15	150	.1	.5	1.5	40	25	5	100	50	14	Amp.
SLOT.200	*10516	3.0	4.5	30	5	100	5	15	150	.1	.5	1.5	40	25	5	100	50	14	Amp.
PKG14	10517		N1	2.0	5	N2	5	10	50	.1	.5	1.5	40	30	5	50	50	15	Schmitt Trigger
	*10519		N1	2.0	5	N2	5	10	50	.1	.5	1.5	40	30	5	50	50	15	Schmitt Trigger
	10529			3.0	5	100	5	20	120	.1	.5	1.5	40	25	5	50	50	16	Dual Amp.
	*10531			3.0	5	100	5	20	120	.1	.5	1.5	40	25	5	50	50	16	Dual Amp.
SLOT.060	*10535		N1	2.0	5	N2	5	10	50	.1	.5	1.5	40	30	5	50	50	17	Dual Schmitt
PKG15	10518		N1	3.0	5	N2	5	15	40	.1	.5	1.5	40	30	5	50	50	15	Schmitt Trigger
	*10520		N1	3.0	5	N2	5	15	40	.1	.5	1.5	40	30	5	50	50	15	Schmitt Trigger
	10530			3.0	5	100	5	15	150	.1	.5	1.5	40	25	5	50	50	16	Dual Amp.
	*10532			3.0	5	100	5	15	150	.1	.5	1.5	40	25	5	50	50	16	Dual Amp.
SLOT.200	*10536		N1	3.0	5	N2	5	15	40	.1	.5	1.5	40	30	5	50	50	17	Dual Schmitt
PKG16	10701	1.0 / .5	2.5 / 1.0	30	5	100	5	20 / 150	250 / 250	.5	.5	1.5	40	25	5	15	50	12	Tran. N3
	10702	2 / 2	4.5 / 3.0	30	5	100	5	25 / 250	350 / 300	1.0	.5	1.5	40	20	5	30	50	13	Darl. N3
	10703	4.5 / 2	4.5 / 4.5	30	5	100	5	10 / 40	80 / 80	.1	.5	1.5	40	25	5	100	50	14	Amp. N3
	10704	N1	2.0 / 3.0		5	N2	5	50 / 50	25 / 35	.1	.5	1.5	40	30	5	50	50	15	Schmitt Trigger N3
	10710											1.55	50						LED

.060 Gap Switch, Led and Sensor Aperture = .010 x .040"
.200 Gap Switch, Led and Sensor Aperture = .020 x .040"

* 12 inch 28 AWG wires custom lengths available



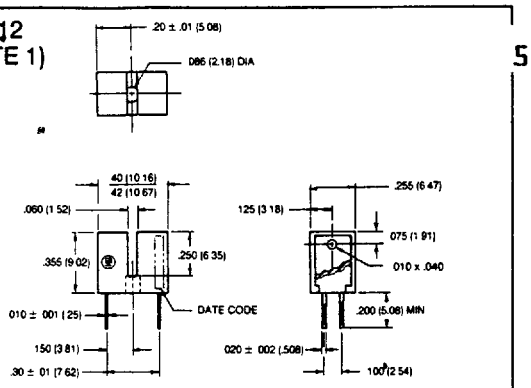
Schematic 17

NOTE—Current limiting and pull-up resistors may be added internally.
Faster switching speeds available
Devices can be supplied with tubing and connectors
N1 Schmitt trigger MAX switch threshold ($I_{F(LED)}$) mA
N2 Schmitt trigger quiescent current = 1.2mA TYP.
N3 10710 was used as the light source I_F = 30mA V_{CE} = 5V

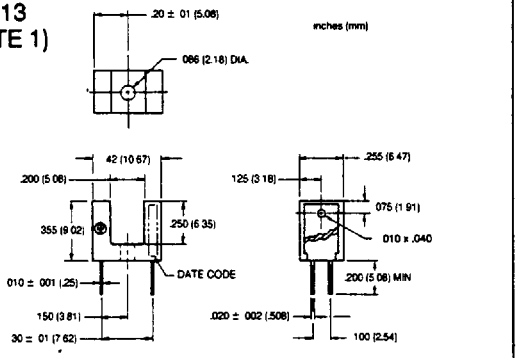
ENVIRONMENTAL SPECIFICATIONS
Operating Temperature 0—70°C
Storage Temperature -40—+80°C

Consult factory for power dissipation specification

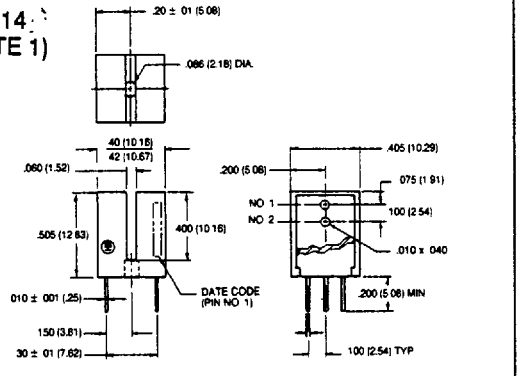
PKG12
(NOTE 1)



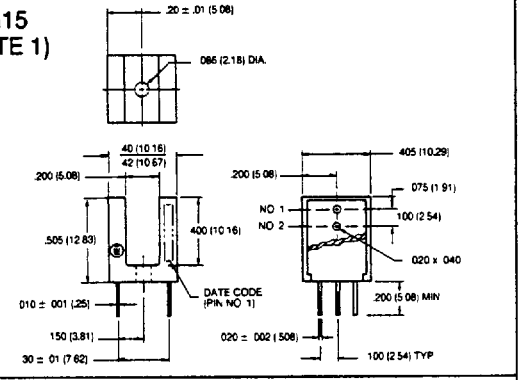
PKG13
(NOTE 1)



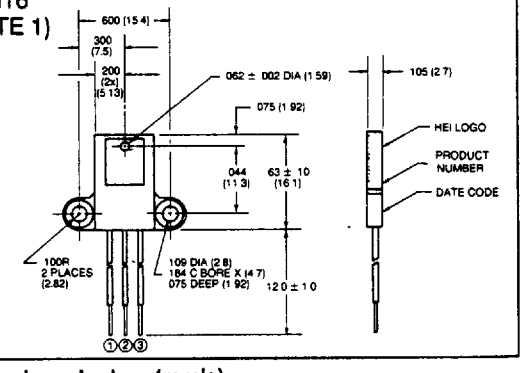
PKG14
(NOTE 1)



PKG15
(NOTE 1)



PKG16
(NOTE 1)



Dimensions: Inches (mm's)

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