

HOA1884

Transmissive Sensor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
IR EMITTER						
Forward Voltage	V_F			1.6	V	$I_F=20$ mA
Reverse Leakage Current	I_R			10	μ A	$V_R=3$ V
DETECTOR						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$				V	$I_C=100$ μ A
HOA1884-011, -012		30				
HOA1884-013		15				
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	$I_E=100$ μ A
Collector Dark Current	I_{CEO}				nA	$V_{CE}=10$ V
HOA1884-011, -012				100		$I_F=0$
HOA1884-013				250		
COUPLED CHARACTERISTICS						
On-State Collector Current	$I_{C(ON)}$				mA	$V_{CE}=5$ V
HOA1884-011		0.3				$I_F=20$ mA
HOA1884-012		1.8				
HOA1884-013		4.0				
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$				V	$I_F=20$ mA
HOA1884-011				0.4		$I_C=40$ μ A
HOA1884-012				0.4		$I_C=230$ μ A
HOA1884-013				1.1		$I_C=500$ μ A
Rise And Fall Time	t_r, t_f				μ s	$V_{CC}=5$ V, $I_C=1$ mA
HOA1884-011, -012			15			$R_L=1000$ Ω
HOA1884-013			75			$R_L=100$ Ω

ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted)

Operating Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Soldering Temperature (5 sec)	240°C

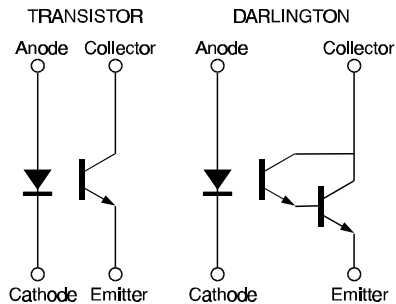
IR EMITTER

Power Dissipation	100 mW ⁽¹⁾
Reverse Voltage	3 V
Continuous Forward Current	50 mA

DETECTOR

	TRANS.	DARLINGTON
Collector-Emitter Voltage	30 V	15 V
Emitter-Collector Voltage	5 V	5 V
Power Dissipation	100 mW ⁽¹⁾	100 mW ⁽¹⁾
Collector DC Current	30 mA	30 mA

SCHEMATIC



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Fig. 1 IRED Forward Bias Characteristics

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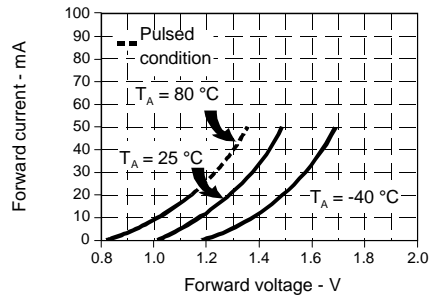


Fig. 2 Non-Saturated Switching Time vs Load Resistance

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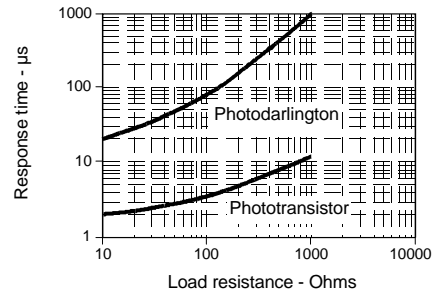


Fig. 3 Dark Current vs Temperature

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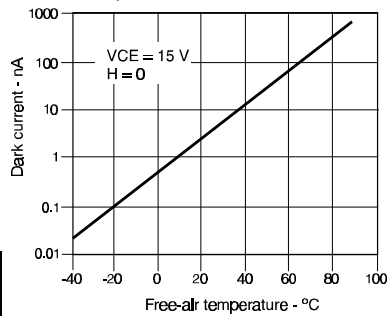
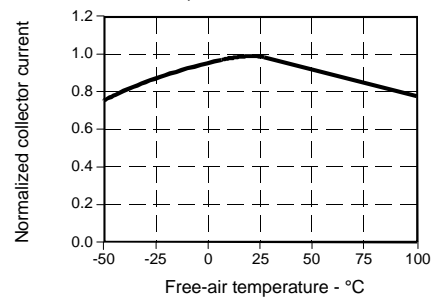


Fig. 4 Collector Current vs Ambient Temperature

gra_095.ds4



All Performance Curves Show Typical Values

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