

H11B815

DESCRIPTION

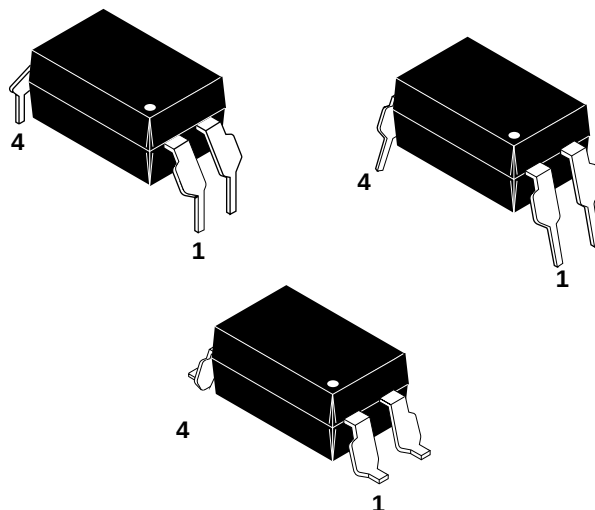
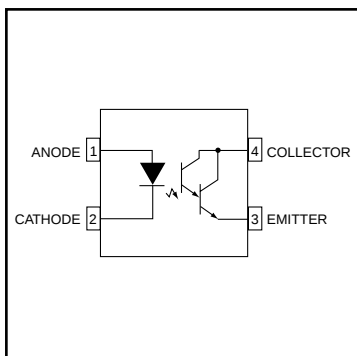
The H11B815 consists of a gallium arsenide infrared emitting diode driving a silicon Darlington phototransistor in a 4-pin dual in-line package.

FEATURES

- Compact 4-pin package
- Current Transfer Ratio: 600% minimum (at $I_F = 1$ mA)
- High isolation voltage between input and output (5300 VRMS)
- UL recognized (File # E90700)

APPLICATIONS

- Power Supply Monitors
- Relay Contact Monitor
- Telephone/Telegraph Line Receiver
- Twisted Pair Line Receiver
- Digital Logic/Digital Logic



ABSOLUTE MAXIMUM RATINGS (No derating required up to 85°C)

Parameter	Symbol	Value	Units
TOTAL DEVICE			
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _{OPR}	-55 to +100	°C
Lead Solder Temperature	T _{SOL}	260 for 10 sec	°C
Total Device Power Dissipation @ T _A = 25°C	P _D	250	mW
EMITTER			
DC/Average Forward Input Current	I _F	80	mA
Reverse Input Voltage	V _R	6	V
Forward Current - Peak (1μs pulse, 300pps)	I _{F(pk)}	1	A
LED Power Dissipation @ T _A = 25°C	P _D	140	mW
Derate above 25°C		1.33	mW/°C
DETECTOR			
Collector-Emitter Voltage	V _{CEO}	35	V
Emitter-Collector Voltage	V _{ECO}	6	V
Continuous Collector Current	I _C	200	mA
Detector Power Dissipation @ T _A = 25°C	P _D	200	mW
Derate above 25°C		2.0	mW/°C

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise specified.)

INDIVIDUAL COMPONENT CHARACTERISTICS

Parameter	Test Conditions	Symbol	Min	Typ**	Max	Unit
EMITTER						
Input Forward Voltage	($I_F = 20\text{ mA}$)	V_F		1.2	1.50	V
Reverse Leakage Current	($V_R = 6.0\text{ V}$)	I_R		0.001	10	μA
DETECTOR						
Collector-Emitter Breakdown Voltage	($I_C = 1.0\text{ mA}$, $I_F = 0$)	BV_{CEO}	35	60		V
Emitter-Collector Breakdown Voltage	($I_E = 100\text{ }\mu\text{A}$, $I_F = 0$)	BV_{ECO}	6	8		V
Collector-Emitter Dark Current	($V_{CE} = 10\text{ V}$, $I_F = 0$)	I_{CEO}		0.005	1	μA
Capacitance	($V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$)	C_{CE}		8		pF

TRANSFER CHARACTERISTICS

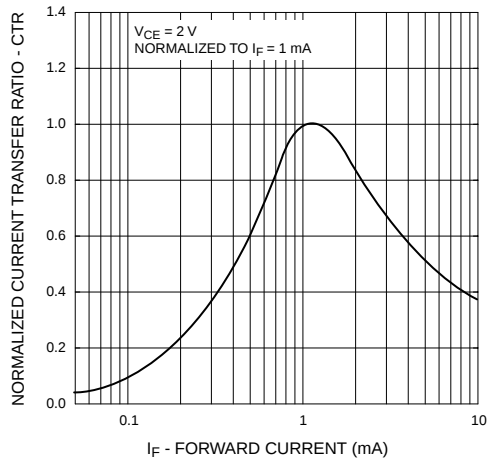
DC Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Current Transfer Ratio, Collector-Emitter	($I_F = 1\text{ mA}$, $V_{CE} = 2\text{ V}$)	CTR	600		7,500	%
Saturation Voltage	($I_F = 20\text{ mA}$, $I_C = 5\text{ mA}$)	$V_{CE(sat)}$		0.8	1.0	V
Rise Time (non saturated)	($I_C = 10\text{ mA}$, $V_{CE} = 2\text{ V}$, $R_L = 100\Omega$)	t_r			300	μs
Fall Time (non saturated)	($I_C = 10\text{ mA}$, $V_{CE} = 2\text{ V}$, $R_L = 100\Omega$)	t_f			250	μs

ISOLATION CHARACTERISTICS

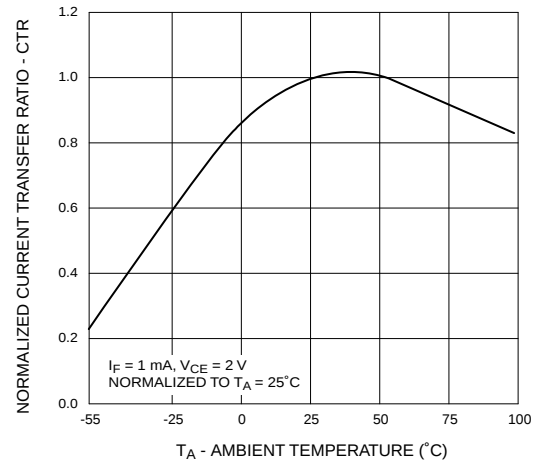
Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Input-Output Isolation Voltage	($I_{I-O} \leq 1\text{ }\mu\text{A}$, 1 min.)	V_{ISO}	5300			Vac(rms)
Isolation Resistance	($V_{I-O} = 500\text{ VDC}$)	R_{ISO}	10^{11}			Ω
Isolation Capacitance	($V_{I-O} = \emptyset$, $f = 1\text{ MHz}$)	C_{ISO}		0.5		pf

** All typicals at $T_A = 25^\circ\text{C}$

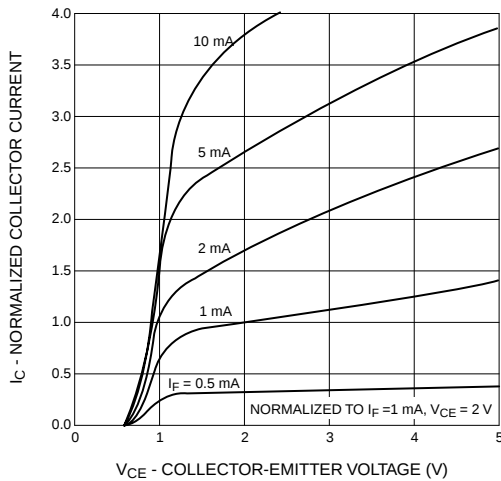
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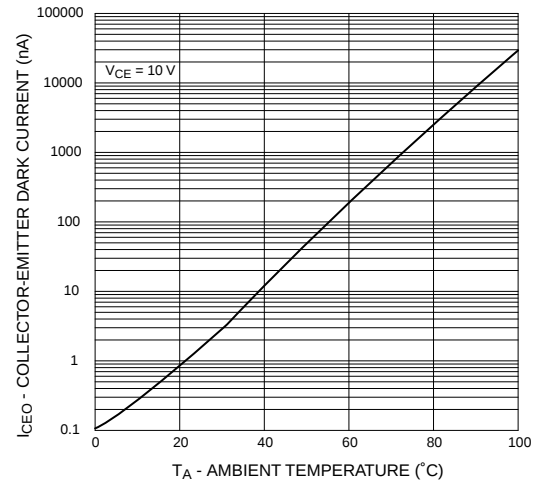
**Normalized Current Transfer Ratio
vs. Forward Current**



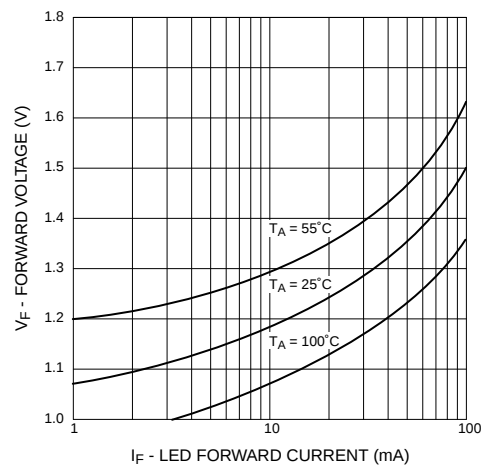
**Normalized Current Transfer Ratio
vs. Ambient Temperature**



**Normalized Collector Current
vs. Collector Emitter Voltage**

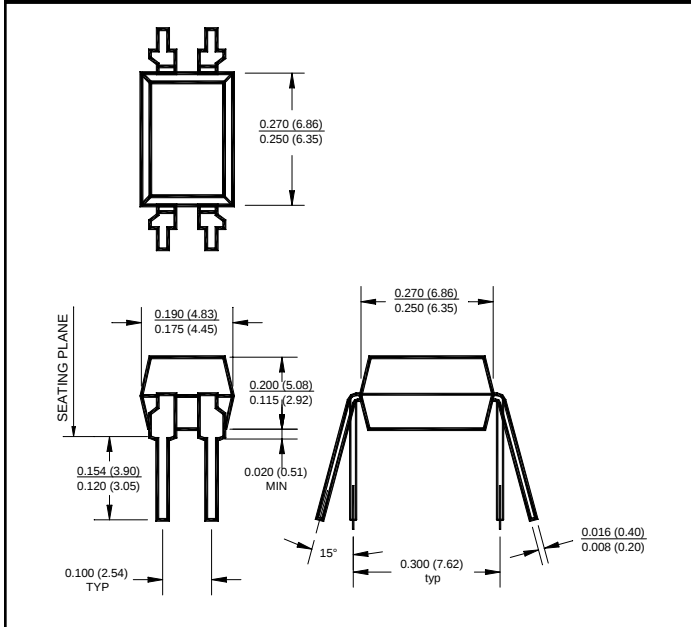


**Collector-Emitter Dark Current
vs. Ambient Temperature**

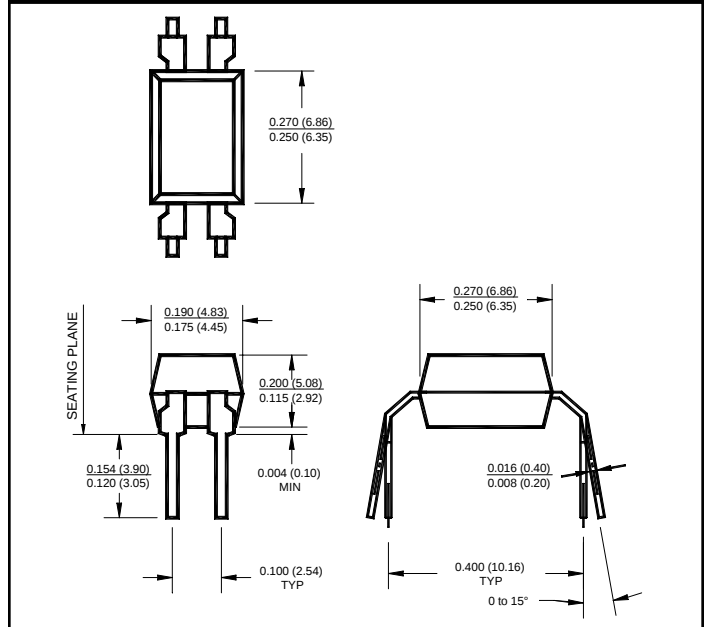


LED Forward Voltage vs. Forward Current

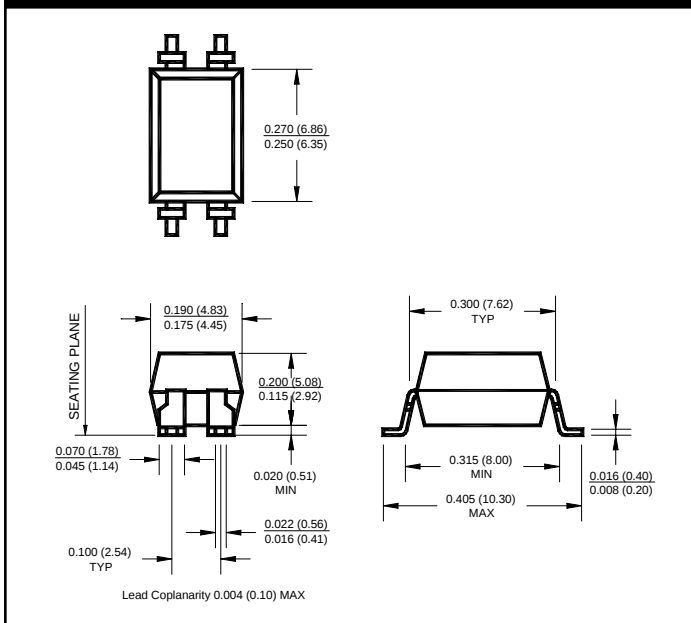
Package Dimensions (Through Hole)



Package Dimensions (0.4"Lead Spacing)



Package Dimensions (0.4"Lead Spacing)



NOTE

All dimensions are in inches (millimeters)

Call QT Optoelectronics for more information or the phone number of your nearest distributor.

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