

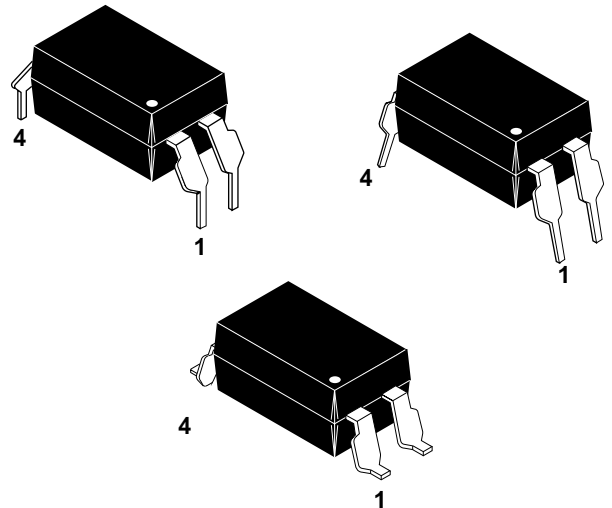
H11B815

DESCRIPTION

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

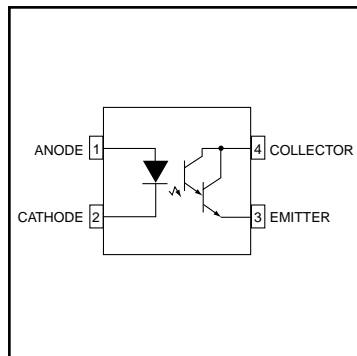
FEATURES

- 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 @ $T_A = 25^\circ\text{C}$	P_D	250	mW
EMITTER			
DC/Average Forward Input Current	I_F	80	mA
Reverse Input Voltage	V_R	6	V
Forward Current - Peak (1 μs pulse, 300pps)	$I_{F(pk)}$	1	A
LED Power Dissipation @ $T_A = 25^\circ\text{C}$	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 @ $T_A = 25^\circ\text{C}$	P_D	200	mW
Derate above 25°C		2.0	mW/°C

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ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise specified.)

INDIVIDUAL COMPONENT CHARACTERISTICS

Parameter	Test Conditions	Symbol	Min	Typ**	Max	Unit
EMITTER						
Input Forward Voltage	(I _F = 20 mA)	V _F		1.2	1.50	V
Reverse Leakage Current	(V _R = 6.0 V)	I _R		0.001	10	μA
DETECTOR						
Collector-Emitter Breakdown Voltage	(I _C = 1.0 mA, I _F = 0)	BV _{CEO}	35	60		V
Emitter-Collector Breakdown Voltage	(I _E = 100 μA, I _F = 0)	BV _{ECO}	6	8		V
Collector-Emitter Dark Current	(V _{CE} = 10 V, I _F = 0)	I _{CEO}		0.005	1	μA
Capacitance	(V _{CE} = 0 V, f = 1 MHz)	C _{CE}		8		pF

TRANSFER CHARACTERISTICS

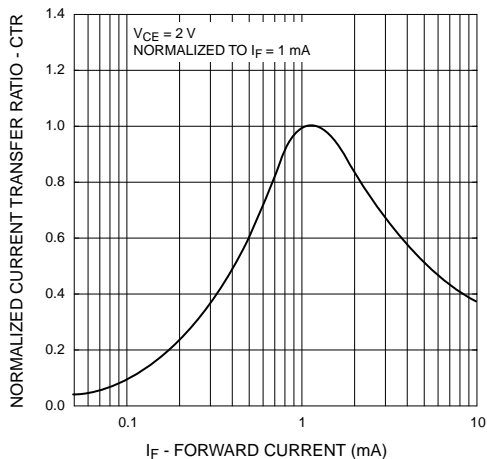
DC Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Current Transfer Ratio, Collector-Emitter	(I _F = 1 mA, V _{CE} = 2 V)	CTR	600		7,500	%
Saturation Voltage	(I _F = 20 mA, I _C = 5 mA)	V _{CE(sat)}		0.8	1.0	V
Rise Time (non saturated)	(I _C = 10 mA, V _{CE} = 2 V, R _L = 100Ω)	t _r			300	μs
Fall Time (non saturated)	(I _C = 10 mA, V _{CE} = 2 V, R _L = 100Ω)	t _f			250	μs

ISOLATION CHARACTERISTICS

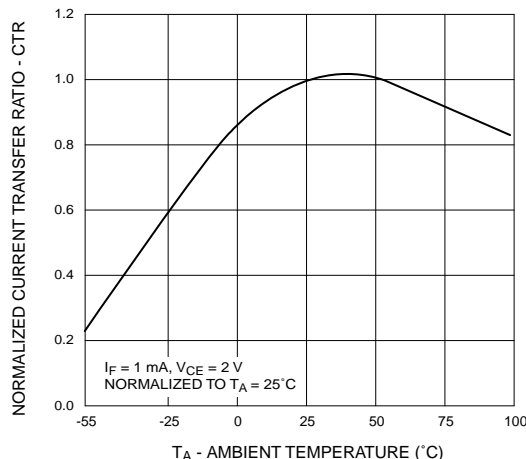
Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Input-Output Isolation Voltage	(I _{I-O} ≤ 1 μA, 1 min.)	V _{ISO}	5300			Vac(rms)
Isolation Resistance	(V _{I-O} = 500 VDC)	R _{ISO}	10 ¹¹			Ω
Isolation Capacitance	(V _{I-O} = ∅, f = 1 MHz)	C _{ISO}		0.5		pf

** All typicals at T_A = 25°C

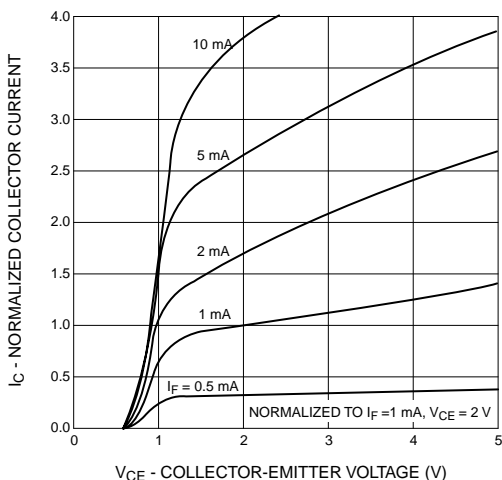
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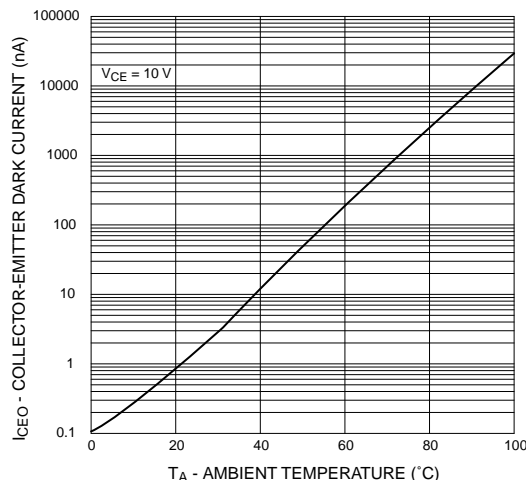
Normalized Current Transfer Ratio vs. Forward Current



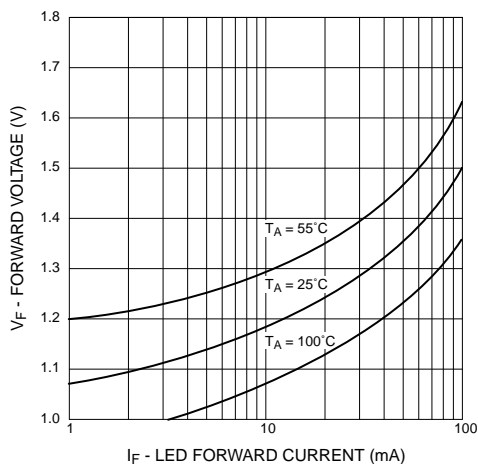
Normalized Current Transfer Ratio vs. Ambient Temperature



Normalized Collector Current vs. Collector-Emitter Voltage



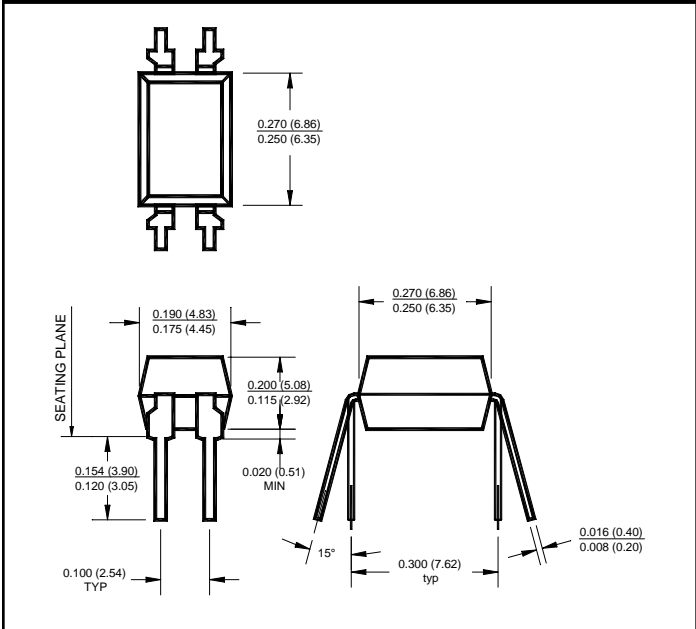
Collector-Emitter Dark Current vs. Ambient Temperature



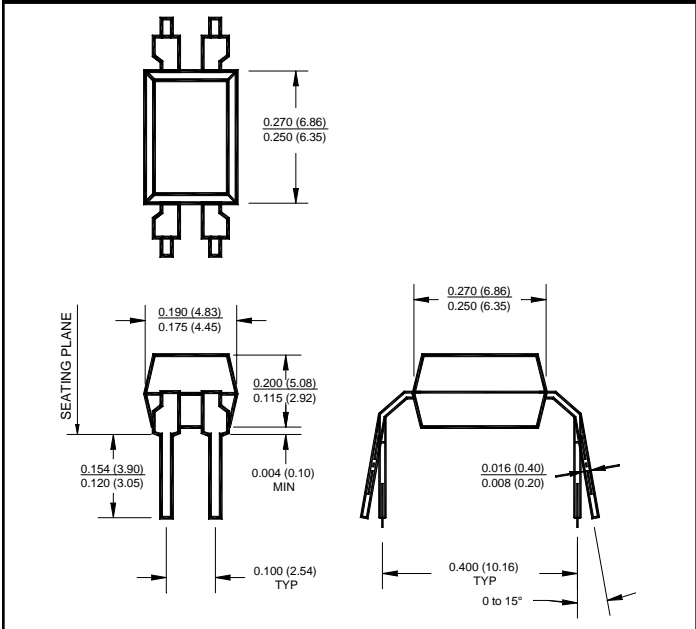
LED Forward Voltage vs. Forward Current

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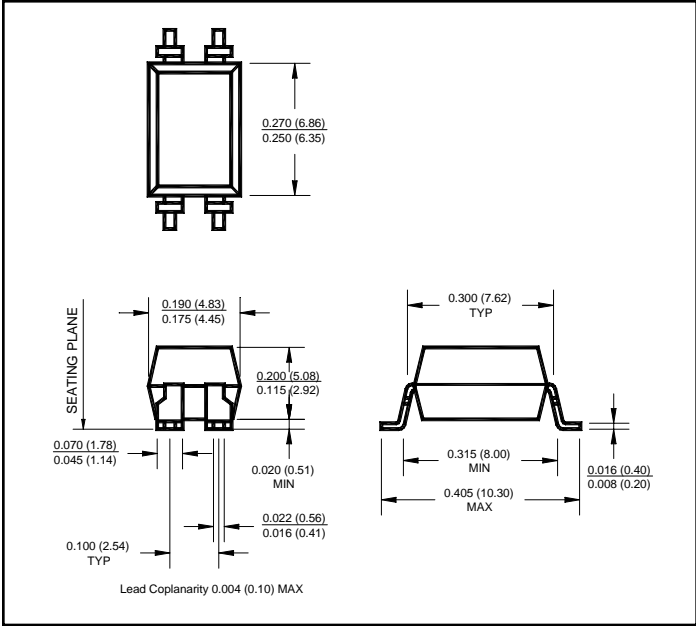
Package Dimensions (Through Hole)



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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