Photocoupler

Part Name: LA211

LA211 photocoupler is an optically coupled pair employing a GaAs infrared LED and a silicon NPN phototransistor.

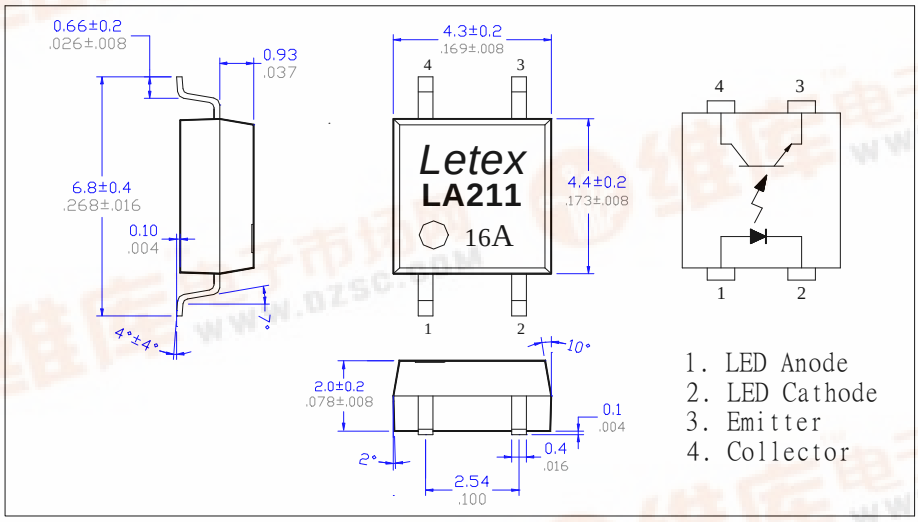
Features

- SOP package 4 Pin type in miniature design
- 80% minimun current transfer ratio
- 1500Vrms Input/Output isolation

Applications

- Computer terminals
- System appliances
- Signal transmission between circuits of different potentials

Dimensions(Unit: mm inch)



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Absolute Maximum Ratings (Ambient Temperature: 25℃)

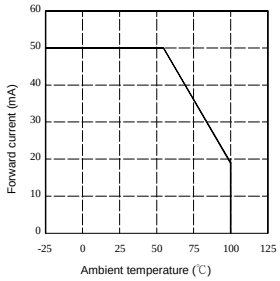
Item		Symbol	Rating	Units	Note
Input	Forward Current	I_F	50	mA	
	Reverse Voltage	V_R	5	V	
	Peak Forward Current	I_{FP}	1	A	
Output	Collector to Emitter Voltage	Vceo	40	V	Ic=1mA, I_B=0
	Emitter to Collector Voltage	Veco	6	V	I_E=100μA, I_B=0
	Collector Current	Ic	50	mA	
	Power Dissipation	Pc	150	mW	
I/O Breakdown Voltage		$V_{I/O}$	1500	Vrms	RH=60%, 1min
Power Dissipation		P_D	200	mW	
Storage Temperature		Tstg	-55 to +125	℃	
Operating Temperature		Top	-55 to +100	℃	
Soldering Temperature		T_{Sol}	260	℃	10 seconds max.

Electrical Specifications (Ambient Temperature: 25℃)

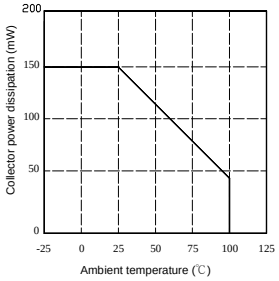
Item		Symbol		MIN.	TYP.	MAX.	Units	Conditions
Input	Forward Voltage	V_F			1.2	1.4	V	I_F=20mA
	Reverse Current	I_R				10	μA	V_R=5V
	Junction Capacitance	Ct			25		pF	V=0, f=1.0MHz
Output	C-E Breakdown Voltage	Vceo		35			V	Ic=0.5mA
	E-C Breakdown Voltage	Veco		5			V	Ie=0.1mA
	Collector Dark Current	Iceo				100	nA	Vce=10V, I_F=0
Coupled	Current Transfer Ratio	CTR		BIN GRADE			%	I_F=5mA, Vce=5V
			A	80		160		
			B	130		260		
			C	200		400		
			D	300		600		
	Collector Saturation Voltage	Vce(sat)				0.4	V	I_F=10mA, Ic=1mA
	Isolation Resistance	$R_{I/O}$		10^9			Ω	V=500V DC
	Isolation Capacitance	$C_{I/O}$			1.0		pF	V=0, f=1.0MHz
	Rise Time	tr				3	μs	Vce=5V, Ic=2mA,
	Fall Time	tf				3	μs	RL=100Ω

Photocoupler
Reference Data

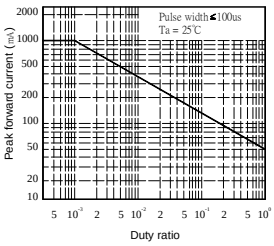
Forward current Vs.
Ambient temperature



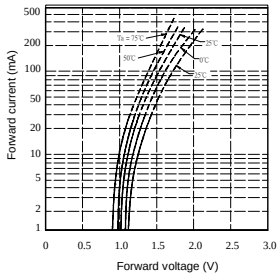
Collector power dissipation Vs.
Ambient temperature



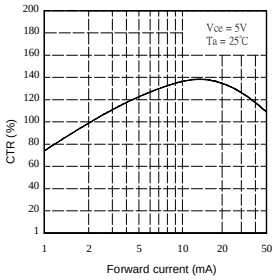
Peak forward current Vs.
Duty ratio



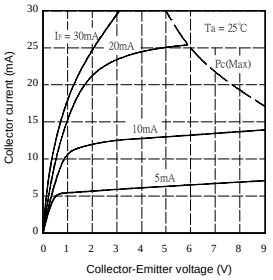
Forward current Vs.
Forward voltage



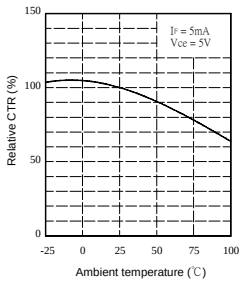
Current transfer ratio Vs.
Forward current



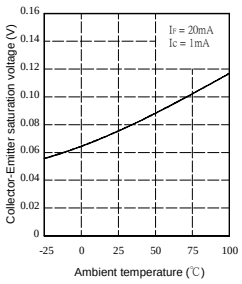
Collector current Vs.
Collector-Emitter voltage



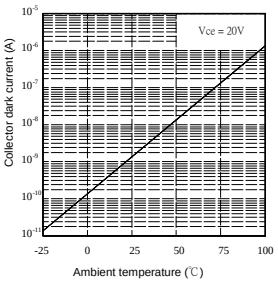
Relative CTR Vs.
Ambient temperature



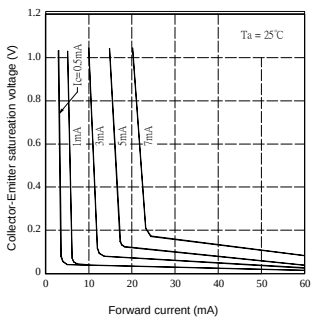
Collector-Emitter saturation voltage Vs.
Ambient temperature



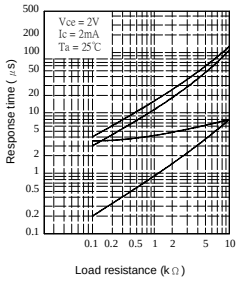
Collector dark current Vs.
Ambient temperature



Collector-Emitter saturation voltage Vs.
Forward current



Response time Vs.
Load resistance



Test circuit for resopnse time