Photocoupler

Part Name: LA211

Description

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

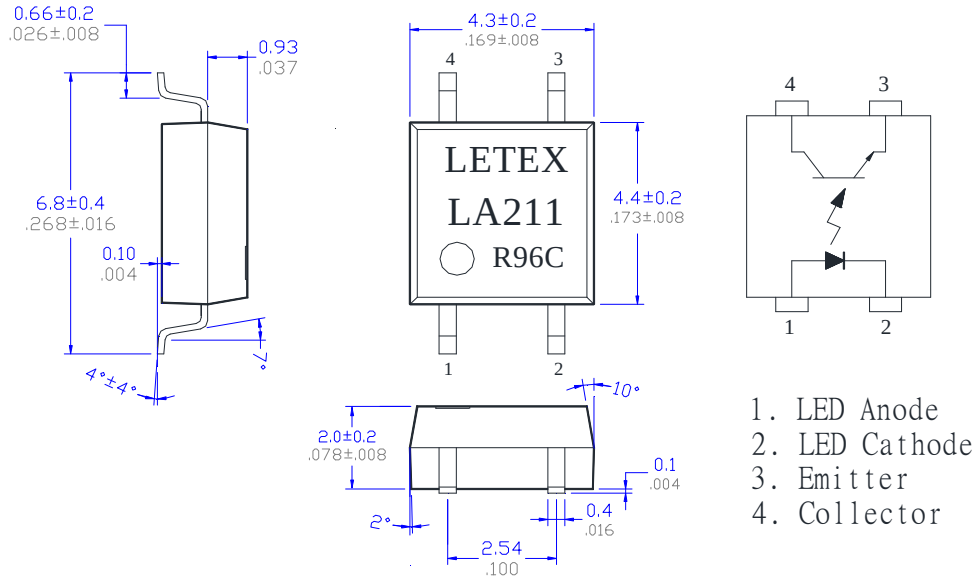
Features

- SOP package 4 Pin type in miniature design
- 80% minimum current transfer ratio
- 2500Vrms Input /Output Isolation

Applications

- Telephones
- Programmable controllers
- System appliances, measuring instruments.
- Signal transmission between circuits of different potentials and impedances.

Outline Dimensions



Part Name: LA211

Absolute Maximum Ratings (Ambient Temperature: 25℃)

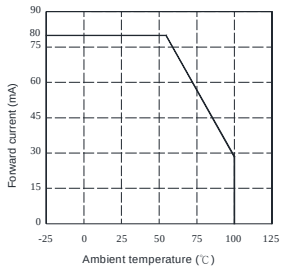
Item		Symbol	Rating	Units	Note
Input	Forward Current	I_F	50	mA	
	Reverse Voltage	V_R	5	V	
	Peak Forward Current	I_{FP}	1	A	
Output	Collector to Emitter Voltage	Vceo	80	V	I_C=1mA, I_B=0
	Emitter to Collector Voltage	Veco	6	V	I_E=100μA, I_B=0
	Collector Current	Ic	50	mA	
	Power Dissipation	Pc	150	mW	
I/O Breakdown Voltage		$V_{I/O}$	2500	Vrms	RH=60%, 1min
Power Dissipation		P_D	200	mW	
Storage Temperature		Tstg	-55 to +125	℃	
Operating Temperature		Topr	-55 to +100	℃	
Soldering Temperature		T_{Sol}	260	℃	10 seconds max.

Electrical Specifications (Ambient Temperature: 25℃)

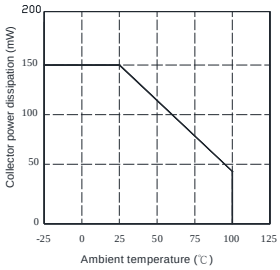
Item		Symbol		MIN.	TYP.	MAX.	Units	Conditions
Input	Forward Voltage	V_F			1.2	1.4	V	I_F=20mA
	Reverse Current	I_R				10	μA	V_R=5V
	Junction Capacitance	Ct			25		pF	V=0, f=1.0MHz
Output	C-E Breakdown Voltage	Vceo		80			V	Ic=0.5mA
	E-C Breakdown Voltage	Veco		5			V	Ie=0.1mA
	Collector Dark Current	Iceo				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, RL=100Ω
	Fall Time	tf				3	μs	

Reference Data

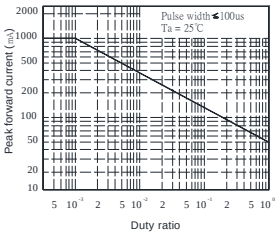
Forward current Vs.
Ambient temperature



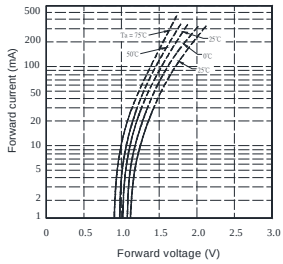
Collector power dissipation Vs.
Ambient temperature



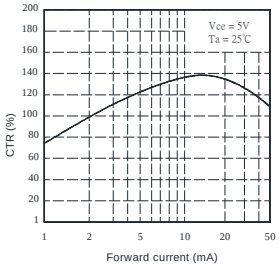
Peak forward current Vs.
Duty ratio



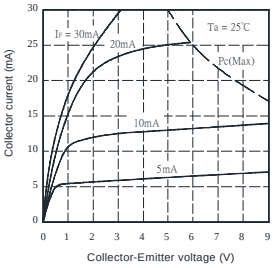
Forward current Vs.
Forward voltage



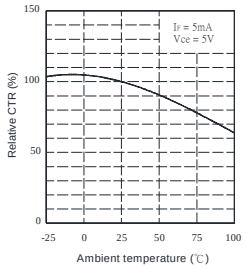
Current transfer ratio Vs.
Forward current



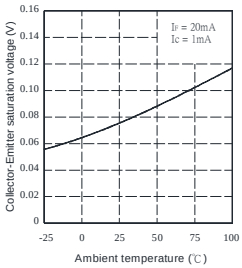
Collector current Vs.
Collector-Emitter voltage



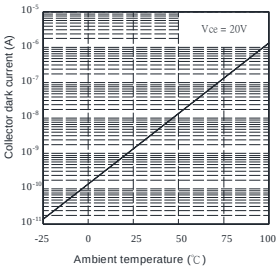
Relative CTR Vs.
Ambient temperature



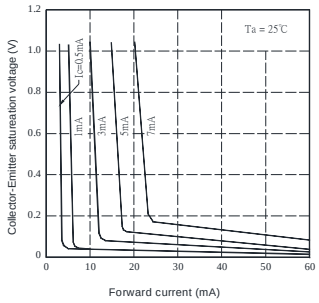
Collector-Emitter saturation voltage Vs.
Ambient temperature



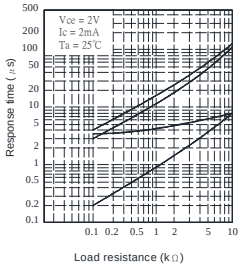
Collector dark current Vs.
Ambient temperature



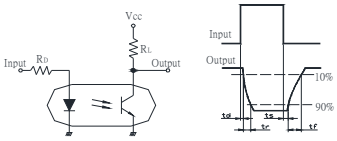
Collector-Emitter saturation voltage Vs.
Forward current



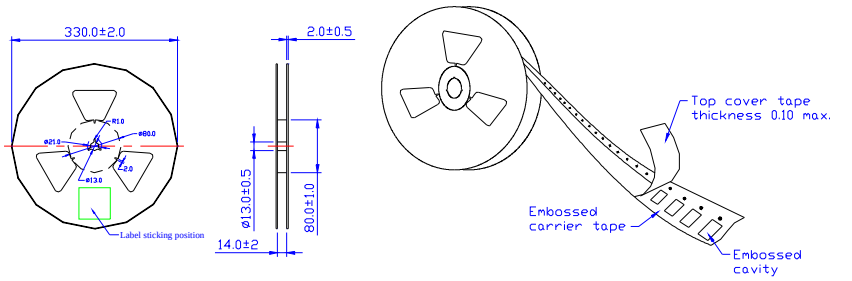
Response time Vs.
Load resistance

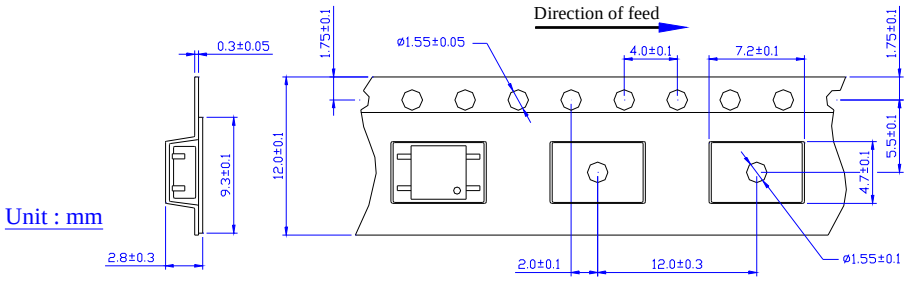


Test circuit for resopnse time



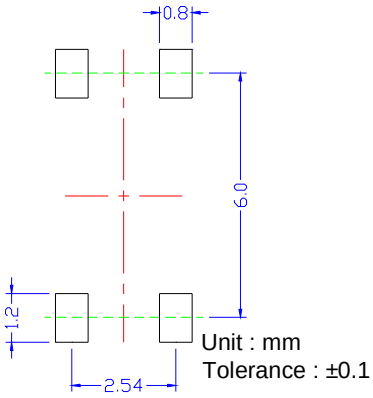
Taping Specifications for Surface Mount Devices





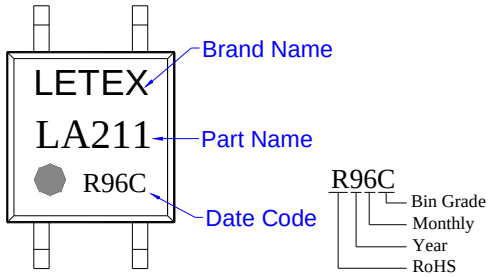
Recommended Mounting Pad

(Top view)



Marking

(Each photo MOS Relay shall be marked with the following information)



Note: 1. There shall be leader of 230 mm minimum which may consist of carrier and or cover tape follower by a minimum of 160 mm of carrier tape sealed with cover tape.

2. There shall be a minimum of 160 mm of empty component pockets sealed with cover tape.

3. Devices are pockets in accordance with EIA standard EIA-481-A and specifications given above.

4. Packaging: 2,000pcs per reel, 2 reel per box, 5 boxes per carton.