

UNCONTROLLED DOCUMENT

PIN DESCRIPTIONS

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	PIN	<u>SYMBOL</u>	<u>FUNCTION</u>	DESCRIPTION	1/0	<u>ACTIVE</u>		
	1	GND	GROUND	CONNECT SYSTEM TO GROUND				
	2	IOVCC	INPUT/OUTPUT ASIC Vcc	CONNECT TO ASIC LOGIC CONTROLLER VCC VOLTAGE				
	3	3 VCC SUPPLY VOLTAGE		SUPPLY VOLTAGE FROM 2.0~5.5 VOLTS*				
	4	AGND	ANALOG GROUND	CONNECT TO A "QUIET" GROUND.				
	5	SD	SHUT DOWN	MUST BE DRIVEN EITHER HIGH OR LOW.**				
	6	RXD	RECEIVER DATA OUTPUT	OUTPUT IS LOW PULSE WHEN LIGHT PULSE SEEN.**	0	LOW		
	7	TXD	TRANSMITTER DATA INPUT	HIGH LOGIC ACTIVATE IrED****	1	HIGH		
	8	V_{LEDA}	IrED SUPPLY VOLTAGE	IrED SUPPLY VOLTAGE: 2.0~Vcc+4 VOLTS.****				

- * RECEIVES POWER SUPPLY FROM 2.0~5.5 VOLTS. THIS PIN PROVIDES POWER FOR THE RECEIVER AND TRANSMITTER DRIVE SECTION. POWER NOISE IN THE 100KHz TO 2MHz RANGE MUST HAVE A dv/dt OF LESS THAN 50mV/uS IN RECEIVE MODE.
- ** ASSERTING THIS PIN ABOVE 1.4V CAUSES THE DEVICE TO SHUT DOWN, DISABLING TRANSMITTER AND TRISTATING THE RECEIVER OUTPUT; HOWEVER, IT MUST BE DRIVEN ABOVE Vdd-0.7V FOR SHUTDOWN CURRENT CONSUMPTION TO BE LESS 1ua. POWER UP RECEIVER LATENCY (TIME TO COME TO FULL SENSITIVITY) IS < 100 uS. ENABLING THIS PIN WILL ALSO CLOCK THE TXI INPUT INTO THE TX POWER MODE CONTROL D FLIP FLOP.
- *** NORMALLY HIGH GOES LOW FOR DURATION OF RECEIVE PULSE, OUTPUT IS A CMOS DRIVER PROVIDING RAIL TO RAIL OPERATION. RXD MAY GO LOW CONTINUOUSLY IF THE DC AMBIENT EXCEEDS INPUT CAPACITY. DURING SHUTDOWN RXD OUTPUT TRI-STATES WITH A WEAK (500K) PULL UP.
- **** ASSERTING THIS PIN ABOVE 1.4V TURNS ON TRANSMITTER. THIS INPUT IS GATED BY THE SHUTDOWN FUNCTION AND AC COUPLED. MAXIMUM TRANSMIT PULSE WIDTH IS ~50uS. INPUT HAS 500K PULL DOWN WHICH IS ACTIVE EVEN DURING SHUTDOWN.

***** VLEDA=9.0V MAX IN STANDBY MODE.

LIMITS OF SAFE OPERATION TA = 25°C

SYMBOL	TEST CONDI	ΓΙΟΝ	MIN TY	P MAX	UNIT		
Vcc	ALL STATES		-0.5	7	٧		
IrED (DC)				100	mA		
IrED (IPK)				400	mΑ		
V_{LEDA}	SD=0, TXD=	=IOVcc	-0.5	7	٧		
V_{LEDA}	Vcc=0~7V,	TXD=0	-0.5	9	٧		
RXD	ALL STATES		-0.5	10Vcc+0.	5 V		
TXD	ALL STATES		-0.5	10Vcc+0.	5 V		
SD	ALL STATES		-0.5	IOVcc+0.	5 V		
Tamb		-25°C	TO +85°C		.C		
Tstg		-40°C	TO +100°0		.C		
	Vcc IrED (DC) IrED (I PK) VLEDA RXD TXD SD Tamb	Vcc ALL STATES IrED (DC) IrED (I pK) VLEDA SD=0, TXD= VLEDA Vcc=0~7V, RXD ALL STATES TXD ALL STATES SD ALL STATES Tamb	Vcc ALL STATES IrED (DC) IrED (I PK) VLEDA SD=0, TXD=IOVcc VLEDA Vcc=0~7V, TXD=0 RXD ALL STATES TXD ALL STATES SD ALL STATES Tamb -25°C	Vcc ALL STATES −0.5 IrED (DC) FED (I PK) FED (I PK) VLEDA SD=0, TXD=IOVcc −0.5 VLEDA Vcc=0~7V, TXD=0 −0.5 RXD ALL STATES −0.5 TXD ALL STATES −0.5 SD ALL STATES −0.5 Tamb −25°C T0 +85°C	Vcc ALL STATES −0.5 7 IrED (DC) 100 100 IrED (I PK) 400 400 VLEDA SD=0, TXD=IOVec −0.5 7 VLEDA Vcc=0~7V, TXD=0 −0.5 9 RXD ALL STATES −0.5 IOVcc+0. TXD ALL STATES −0.5 IOVcc+0. SD ALL STATES −0.5 IOVcc+0. Tamb −25°C TO +85°C		

^{*} T<50uS, Ton<20%

PART NUMBER

OED-IRDA3202

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REV.

ELECTRO-OPTICAL CHARA	ACTERISTIC	$CS T_A = 25^{\circ}C$				
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
TRANSCEIVER						
SUPPLY VOLTAGE	Vcc	ALL MODES	2.0		5.5	٧
RECIEVE CURRENT	lcc(Rx)	Vcc=2~5.5v		145		μΑ
TRANSMIT CURRENT	lcc1(Tx)	Vcc=5V		500	600	μA
SHUT DOWN CURRENT	Isd	SD=Vcc~0.6V		0.1	1	uА
XMIT. RECEIVER LATENCY	Ttrl			50	100	uA
SETTING TIME	Tpon			100	150	uS
RECEIVER						
MINIMUM DETECTION THRESHOLD IRRADIANCE	Ee Ee	SIR MODE, Vcc=5\ SIR MODE, Vcc=3\			4 10	uW/cm uW/m²
MAXIMUM DETECTION THRESHOLD IRRADIANCE	Ee Ee	SIR MODE, Vcc=5\ SIR MODE, Vcc=3\		500 1000		uW/cm uW/cm
LOGIC LOW RECEIVER INPUT IRRADIANCE	Ee				0.4	uW/cm uW/m²
OUTPUT VOLTAGE ACTIVE	Vol Vol	Vcc=5V, lol=8mA Vcc=2V, lol=2mA		.22 .17		V V
OUTPUT VOLTAGE NON ACTIVE	Vah Voh	Vcc=5V, lol=8mA Vcc=2V, lol=2mA		4.6 1.7		V V
RXD SHORT CIRCUIT	\	/cc=5V, RXD=0, RXI /cc=2V, RXD=0, RXI)=Vcc)=Vcc	40 8		mA mA
	r/Tf(RXD) r/Tf(RXD)			30 80		nS nS
TRANSMITTER						
IrED OPERATING CURREN	T IrED	LOW POWER MODE Vcc=2~5.0V		32		mA
LOGIC LOW TRANSMITTER INPUT VOLTAGE	Vil		0		1/31000	cc V
LOGIC HIGH TRANSMITTER INPUT VOLTAGE	R Vih		2/3IOVc	С	1/310Va 5.0	cc V
OUTPUT RADIANT INTENSI	TY le le	Vcc=5.0V TXC LOGIC LOW		9	0.04	mW/sr mW/sr
VIEWING ANGLE	θ		30		2	2x theta
PEAK WAVELENGTH			850	870	900	nm
OPTICAL RISE/FALL TIME	Tr/Tf			180	600	ns
OPTICAL OVERSHOOT					25	%

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REV.

INFRARED DATA TRANSCEIVER MODULE.

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RELIABILITY NOTE OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.



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