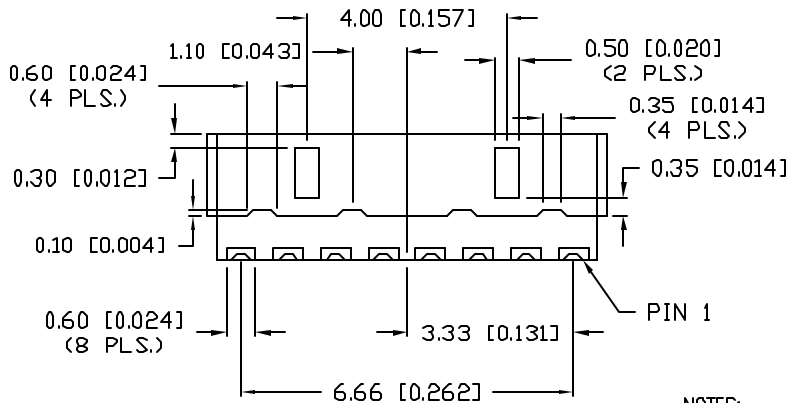
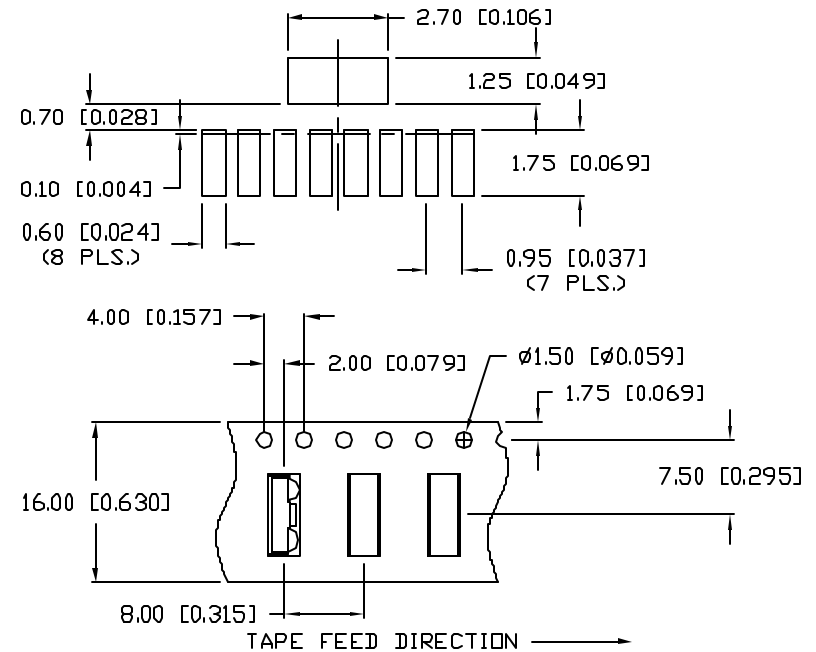


RECOMMENDED SOLDERPAD LAYOUT



NOTES:

1. 2,500 PIECES PER REEL.

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.038), XX=±0.5 (±0.020), XXX=±0.25 (±0.010), XXXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030), MIN=+0.00 DECIMAL PRECISION MAX.=+0.00 DECIMAL PRECISION

UNCONTROLLED DOCUMENT

REV.

PART NUMBER

OED-IRDA8235

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INFRARED DATA TRANSCEIVER MODULE.

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.

DRAWN BY:

GT

CHECKED BY:

APPROVED BY:

DATE: 8.16.01

PAGE: 1 OF 3

SCALE: N/A

PIN DESCRIPTIONS

PIN	SYMBOL	FUNCTION	DESCRIPTION	I/O	ACTIVE
1	GND	GROUND	CONNECT SYSTEM TO GROUND		
2	NC	NO CONNECT			
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	VLEDA	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 < 100uS. 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

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
SUPPLY VOLTAGE	Vcc	ALL STATES	-0.5		7	V
STEADY CURRENT	IrED (DC)				100	mA
PEAK PULSE CURRENT*	IrED (PK)				400	mA
IrED SUPPLY VOLTAGE	VLEDA	SD=0, TXD=Vcc	-0.5		Vcc+4	V
	VLEDA	Vcc=0~7V, TXD=0	-0.5		9	V
RECEIVER DATA OUTPUT	RXD	ALL STATES	-0.5		Vcc+0.5	V
TRANSMITTER DATA INPUT	TXD	ALL STATES	-0.5		Vcc+0.5	V
SHUT DOWN	SD	ALL STATES	-0.5		Vcc+0.5	V
OPERATING TEMP.	Tamb		-25°C TO +85°C			°C
STORAGE TEMP.	Tstg		-40°C TO +85°C			°C

\* T<50uS, Ton<20%

ELECTRO-OPTICAL CHARACTERISTICS TA=25°C


PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
<b>TRANSCIEVER</b>						
SUPPLY VOLTAGE	Vcc	ALL MODES	2.0		5.5	V
RECEIVE CURRENT	Icc(Rx)	Vcc=2~5.5v		145		uA
TRANSMIT CURRENT	Icc(Tx)	Vcc=5V		12		mA
SHUT DOWN CURRENT	I <sub>sd</sub>	SD=Vcc=2~5.5V		0.01	1	uA
XMIT. RECEIVER LATENCY	T <sub>rl</sub>			50	100	uA
SETTING TIME	T <sub>pdn</sub>			100	150	uS
<b>RECEIVER</b>						
MINIMUM DETECTION THRESHOLD IRRADIANCE	E <sub>e</sub>	SIR MODE, Vcc=5V			4	uW/cm <sup>2</sup>
	E <sub>e</sub>	SIR MODE, Vcc=3V			10	uW/m <sup>2</sup>
MAXIMUM DETECTION THRESHOLD IRRADIANCE	E <sub>e</sub>	SIR MODE, Vcc=5V		500		uW/cm <sup>2</sup>
	E <sub>e</sub>	SIR MODE, Vcc=3V		1000		uW/cm <sup>2</sup>
LOGIC LOW RECEIVER INPUT IRRADIANCE	E <sub>e</sub>				0.4	uW/cm <sup>2</sup>
OUTPUT VOLTAGE ACTIVE	V <sub>ol</sub>	Vcc=5V, I <sub>ol</sub> =8mA		.22		V
	V <sub>ol</sub>	Vcc=2V, I <sub>ol</sub> =2mA		.17		V
OUTPUT VOLTAGE NON ACTIVE	V <sub>oh</sub>	Vcc=5V, I <sub>ol</sub> =8mA		4.6		V
	V <sub>oh</sub>	Vcc=2V, I <sub>ol</sub> =2mA		1.7		V
RXD SHORT CIRCUIT		Vcc=5V, RXD=0, RXD=Vcc		40		mA
		Vcc=2V, RXD=0, RXD=Vcc		8		mA
RISE/FALL TIME-RXD	T <sub>r</sub> /T <sub>f</sub> (RXD)	Vcc=5V, C=15pF		30		nS
	T <sub>r</sub> /T <sub>f</sub> (RXD)	Vcc=2V, C=15pF		63		nS
<b>TRANSMITTER</b>						
IrED OPERATING CURRENT	IrED	LOW POWER MODE Vcc=2~5.0V		30	45	mA
LOGIC LOW TRANSMITTER INPUT VOLTAGE	V <sub>il</sub>		0		0.8	V
LOGIC HIGH TRANSMITTER INPUT VOLTAGE	V <sub>ih</sub>		2.0		Vcc+ 5.0	V
OUTPUT RADIANT INTENSITY	I <sub>e</sub>	Vcc=5.0V TXC LOGIC LOW		50	500	mW/sr
	I <sub>e</sub>				0.04	mW/sr
VIEWING ANGLE	θ		30		2x theta	
PEAK WAVELENGTH			850	870	900	nm
OPTICAL RISE/FALL TIME	T <sub>r</sub> /T <sub>f</sub>		200	600		ns
OPTICAL OVERSHOOT					25	%

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