

860 MHz Optical Receiver Integrated Circuit

FEATURES

- ◆Excellent linearity
- ◆Excellent distortion performance
- ◆Low input noise
- ◆High output level

Pin	Description
1	monitor current
2	Common
3	Common
4	+VB1 of the PIN diode
5	+VB2 of the amplifier
7	Common
8	Common
9	Output

DESCRIPTION

The supply voltage of KC847B0 is 24VDC .The module is in a package interchangeable for SOT115T(see Fig.1), has a FC/APC or SC/APC Connector, with a single mode optical input suitable for 1100 to 1650nm wavelengths , a terminal to monitor the photo diode current and an electrical output having a characteristic impedance of 75Ω . Optical power receiving at -8 ~ +2dBm , RF output is 88dBuV/Ch(@0dBm input) .

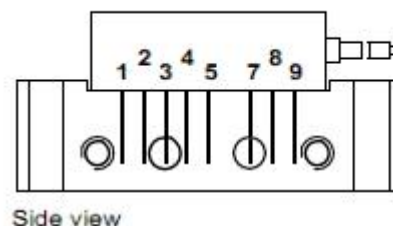
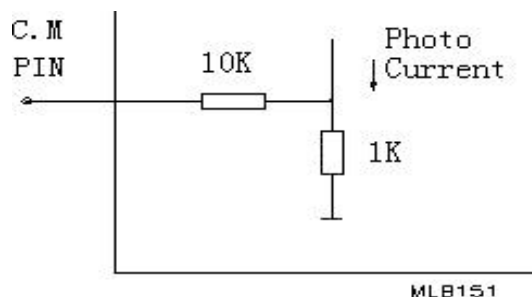


Fig.1 Simplified outline.

HANDLING

Fiberglass optical coupling :
 maximum tensile strength= 5 N ;
 minimum bending radius=35mm.

PHOTODIODE CURRENT MONITOR PIN



CURRENT MONITOR PIN

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LIMITING VALUES

In accordance With the Absolute Maximum Rating System

SYMBOL	PARAMETER	CONDITION	MIN	MAX	UNITS
P_{in}	Input Optical Power			3	mw
T_{stg}	Storage temperature		-40	+85	°C
T_c	Operating temperature		-20	+85	°C
ESD	ESD sensitivity	Human body model; R=1.5KΩ;C=100pF	500		V

CHARACTERISTICS

T_{mb}=25°C, Z_s=Z_L=75 Ω

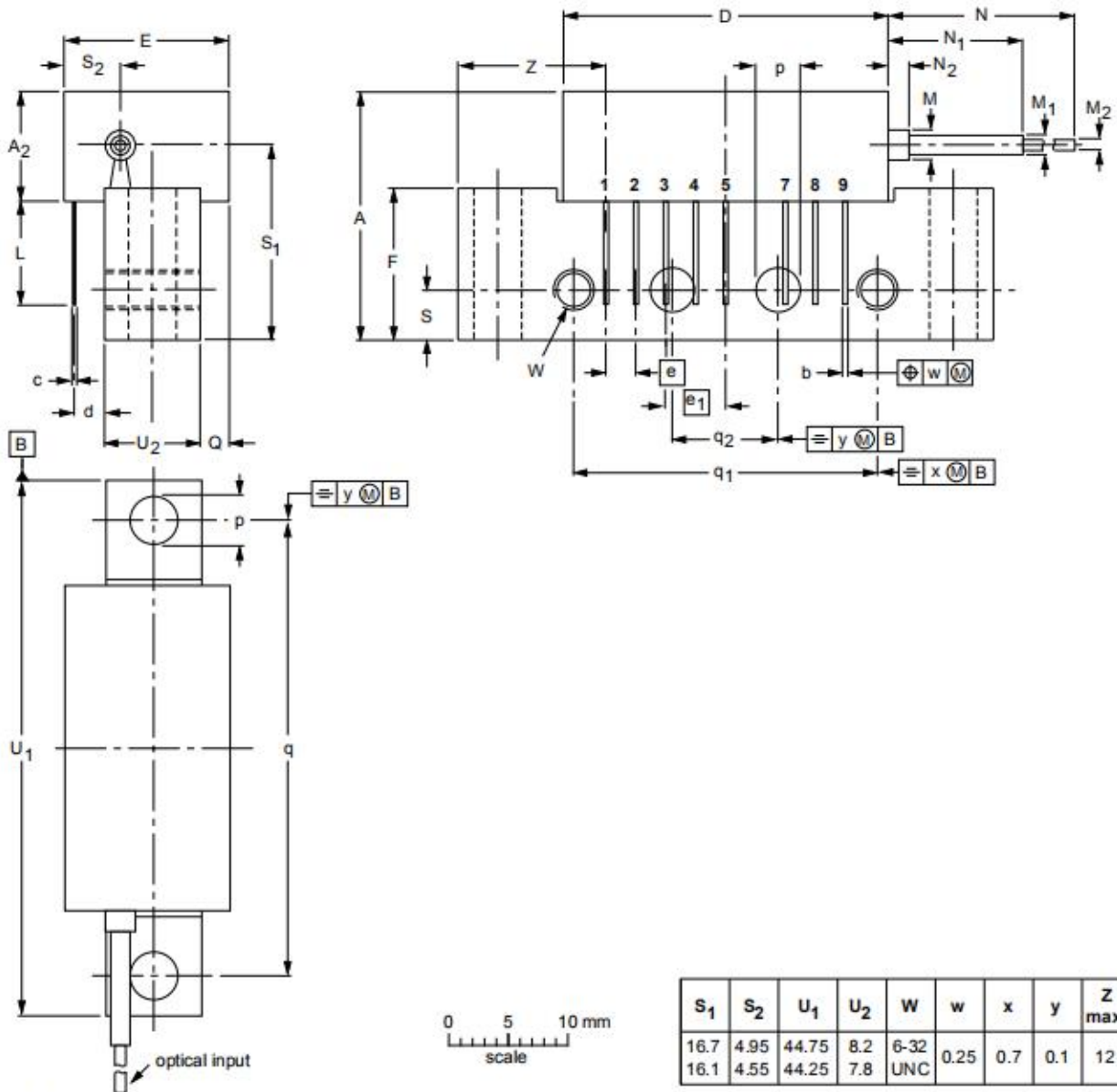
SYMBOL	PARAMETER	UNIT	MIN.	TYP.	MAX.	CONDITIONS
f	Frequency range	MHz	40		860	
S_λ	Spectral sensitivity	A/W	0.85			λ=1310±20nm
		A/W	0.9			λ=1550±20nm
λ	Optical wavelength	nm	1100		1650	
V_{cm}	Voltage of C.M Pin	mV	850			λ=1310nm , 0dBm input
V_o	Output Level	dBμV		88		Optical power receiving at 0dBm, m=3.7%, Reference value @543.25MHz
FL	Flatness of frequency response	dB	-	-	±0.75	f=40 to 860 MHz
CTB	Composite Triple Beat	dB	-	-70	-	60 channels flat, m=3.7%;
CSO	Composite Second Order distortion	dB	-	-66	-	measured at 543.25MHz; Optical power receiving at 0dBm
C/N	Carrier to Noise Ratio	dB	-	51	-	Optical power receiving at 0dBm
S₂₂	Output Return losses	dB	-	-	-12	f=40 to 860 MHz
	Optical input return losses	dB	-	-	-45	
I_{tot}	Total Current Consumption	V _{B2} /mA	160	175	190	V _{B1} /V _{B2} =24V
I_{bias}	diode bias current at pin 4 (DC)	V _{B1} /mA	-	-	25	

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PACKAGE OUTLINE

Rectangular single-ended package; aluminum flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 8 gold-plated in-line leads.
Optical input with connector.

SOT115T



DIMENSIONS (mm are the original dimensions)

UNIT	A _{max.}	A _{2max.}	b	c	D _{max.}	d _{max.}	E _{max.}	e	e ₁	F	L _{min.}	M	M ₁	M ₂	N _{min.}	N ₁	N ₂	p	Q _{max.}	q	q ₁	q ₂	S
mm	20.8	9.5	0.51 0.38	0.25	27.2	2.54	13.75	2.54	5.08	12.7	8.8	2.5	1.6	0.9	1000	10.7 0.0	5 0	4.15 3.85	2.4	38.1	25.4	10.2	4.2

UNIT:mm