

TMC-5F59-427

10Gbps 850nm VCSEL TO-46 metal can with monitor PD

FEATURES:

- Industry TO-46 package with flat window cap for multi-mode fiber communication.
- Packaged with monitoring PD.
- Support up to 10.3125 Gbps data rate operation.
- Isolated pinout between LD and monitor PD.



ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS ⁽¹⁾
Threshold Current	I_{th}		0.8 1.3	1.5 1.85	mA	$T_A=25^{\circ}C$ $T_A=85^{\circ}C$
Slope Efficiency	η	0.14		0.27	mW/mA	$I_F=6mA$
Forward Voltage	V_F	1.5		2.6	V	$I_F=6mA$
Series Resistance	R_S		100		Ω	$I_F=6mA$, $T_A=25^{\circ}C$
Wavelength	λ_P	840	850	860	nm	$I_F=6mA^{(2)}$
Monitor Current	I_M	100		900	μA	$V_R=5V$, $P_{oc}=900\mu W$
PD Dark Current	I_d			20	nA	$V_R=5V$, $T_A=25^{\circ}C$
PD Capacitance	C_M		12		pF	$V_R=3V$

THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{th} Temperature Variation	ΔI_{th}			1.5	mA	$T_A=-10\sim 85^{\circ}C$
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.5		%/ $^{\circ}C$	$T_A=-10\sim 85^{\circ}C$, $I_F=6mA$
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.07		nm/ $^{\circ}C$	$T_A=-10\sim 85^{\circ}C$, $I_F=6mA$

Notes:

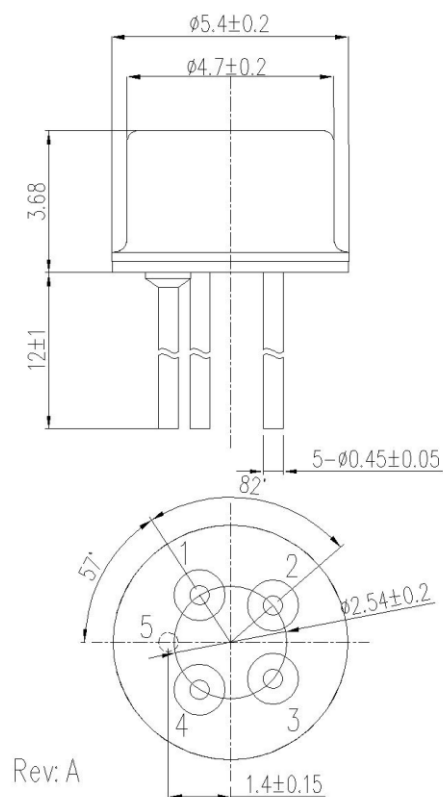
1. All parameters are measured at $I_F=6mA$, $25^{\circ}C$ unless otherwise stated.
2. Minimum and Maximum values are valid over the entire ambient temperature range.

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	100	$^{\circ}C$	
Operating Temperature	-10	85	$^{\circ}C$	
Peak Continuous Forward Current		10	mA	
Laser Reverse Voltage		10	V	

OUTLINE DIMENSIONS:

• Unit: mm

**Pinout:**

Pin Number	TMC-5F59-427
	Function
1	VCSEL Anode
2	PD Cathode
3	PD Anode
4	VCSEL Cathode
5	Case

The VCSEL Laser is a class 1 laser in the safety standard IEC60825-1:2014.

