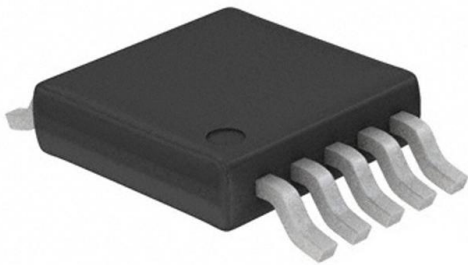


SY88822VKC Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	SY88822VKC-DG
Manufacturer	Microchip Technology
Manufacturer Product Number	SY88822VKC
Description	IC LASER DRV 155MBPS 5.5V 10MSOP
Detailed Description	Laser Driver IC 155Mbps 1 Channel 3V ~ 3.6V, 4.5V ~ 5.5V 10-MSOP

This model SY88822VKC is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

SY88822VKC

Series:

-

Type:

Laser Diode Driver (Fiber Optic)

Number of Channels:

1

Current - Supply:

25 mA

Operating Temperature:

-40°C ~ 85°C

Supplier Device Package:

10-MSOP

Base Product Number:

SY88822

Manufacturer:

Microchip Technology

Product Status:

Discontinued at Digi-Key

Data Rate:

155Mbps

Voltage - Supply:

3V ~ 3.6V, 4.5V ~ 5.5V

Current - Modulation:

30mA

Package / Case:

10-TFSOP, 10-MSOP (0.118", 3.00mm Width)

Mounting Type:

Surface Mount

Environmental & Export classification

RoHS Status:

RoHS non-compliant

REACH Status:

REACH Unaffected

HTSUS:

8542.33.0001

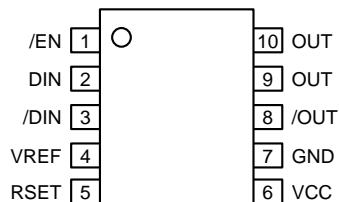
Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

PACKAGE/ORDERING INFORMATION



**10-Pin MSOP
(K10-1)**

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY88822VKC	K10-1	Commercial	822V	Sn-Pb
SY88822VKCTR ⁽¹⁾	K10-1	Commercial	822V	Sn-Pb
SY88822VKG	K10-1	Industrial	822V with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY88822VKGTR ⁽¹⁾	K10-1	Industrial	822V with Pb-Free bar-line indicator	Pb-Free NiPdAu

Note:

1. Tape and Reel.

PIN DESCRIPTION

Pin Number	Pin Name	Pin Function
1	/EN	100k PECL compatible input w/ 75k Ω pulldown resistor. Modulation current goes to zero when deasserted high.
2, 3	DIN, /DIN	Differential 100k PECL compatible input w/ 75k Ω pulldown resistors.
4	VREF	Voltage reference for use with R _{SET} .
5	RSET	An external resistor from here to V _{REF} sets the reference current for I _{OUT} .
6	VCC	Positive power supply.
7	GND	Device ground.
8, 9, 10	/OUT, OUT	Differential open collector current outputs.

TRUTH TABLE⁽¹⁾

D	/D	/EN	OUT (Note 2)	/OUT
L	H	L	H	L
H	L	L	L	H
X	X	H	H	L

Notes:

1. L = LOW, H = HIGH, X = don't care.
2. H = I_{OUT} = 0mA.

Absolute Maximum Ratings⁽¹⁾

Power Supply Voltage (V_{CC})	0V to +7.0V
Input Voltage (V_{IN})	0V to V_{CC}
Output Current (I_{OUT})	30mA
Power Dissipation (P_D)	250mW
Lead Temperature (soldering, 20 sec.)	+260°C
Storage Temperature Range (T_S)	-55°C to +125°C

Operating Ratings^(2, 3, 4)

Supply Voltage (V_{IN})	+3.0V to +3.6V or +4.5V to +5.5V
Ambient Temperature (T_A), Note 5	-40°C to +85°C
Junction Temperature (T_J), Note 5	-40°C to 100°C
Resistor to Dissipate Power (R_{EXT})	10Ω to 50Ω
Laser Diode Serial Resistor (R_{SER})	0Ω to 50Ω
Resistor to Adjust Current (R_{SET}), Note 6	700Ω to 20,000Ω
Package Thermal Resistance	
MSOP	
(θ_{JA}) Still-Air	113°C/W
(ψ_{JB}) Still-Air	74°C/W

DC ELECTRICAL CHARACTERISTICS⁽⁷⁾

GND = 0V; $V_{CC} = 3.3V \pm 10\%$ or $V_{CC} = 5.0V \pm 10\%$; $T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$

Symbol	Parameter	Condition	Min	Typ	Max	Units
V_{IH}	Input HIGH Voltage (D_{IN} , $/D_{IN}$, $/EN$)		$V_{CC}-1.165$		$V_{CC}-0.880$	V
V_{IL}	Input LOW Voltage (D_{IN} , $/D_{IN}$, $/EN$)		$V_{CC}-1.810$		$V_{CC}-1.475$	V
V_{REF}	Reference Voltage		1.7	2.0	2.3	V
I_{IL}	Input LOW Current (D_{IN} , $/D_{IN}$, $/EN$)	$V_I = V_{IL(min)}$	0.5			μA
I_{IH}	Input HIGH Current (D_{IN} , $/D_{IN}$, $/EN$)				100	μA
I_{CC}	Supply Current	$I_{MOD} = 25\text{mA}$			25	mA
I_{OUT_OFF}	Output LOW Current ($/EN = \text{HIGH}$)			450	1000	μA
I_{OUT}	Modulation Current				30	mA
A_{RSET}	I_{OUT}/I_{RSET}		30	38	44	—
V_{OUT}	Voltage at OUT, $/OUT$		$V_{CC}-1.4$		V_{CC}	V
C_{OUT}	Capacitance on OUT, $/OUT$			2.5		pF

Notes:

1. Permanent device damage may occur if absolute maximum ratings are exceeded. This is a stress rating only and functional operation is not implied at conditions other than those detailed in the operational sections of this data sheet. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.
2. The data sheet limits are not guaranteed if the device is operated beyond the operating ratings.
3. The device is guaranteed to meet the DC specifications, shown in the table above, after thermal equilibrium has been established. The device is tested in a socket such that transverse airflow of $\geq 500\text{fpm}$ is maintained.
4. The voltage drop across R_{EXT} and R_{SER} plus Laser Diode must not be greater than 1.4V.
5. Commercial devices are guaranteed from 0°C to +85°C ambient temperature.
6. R_{SET} minimum 430Ω.
7. Specification for packaged product only.

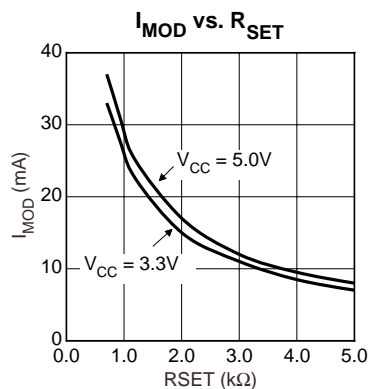
AC ELECTRICAL CHARACTERISTICS(8, 9)

$I_{MOD} = 10\text{mA}$; $GND = 0\text{V}$; $V_{CC} = 3.3\text{V} \pm 10\%$ or $V_{CC} = 5.0\text{V} \pm 10\%$; $T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$

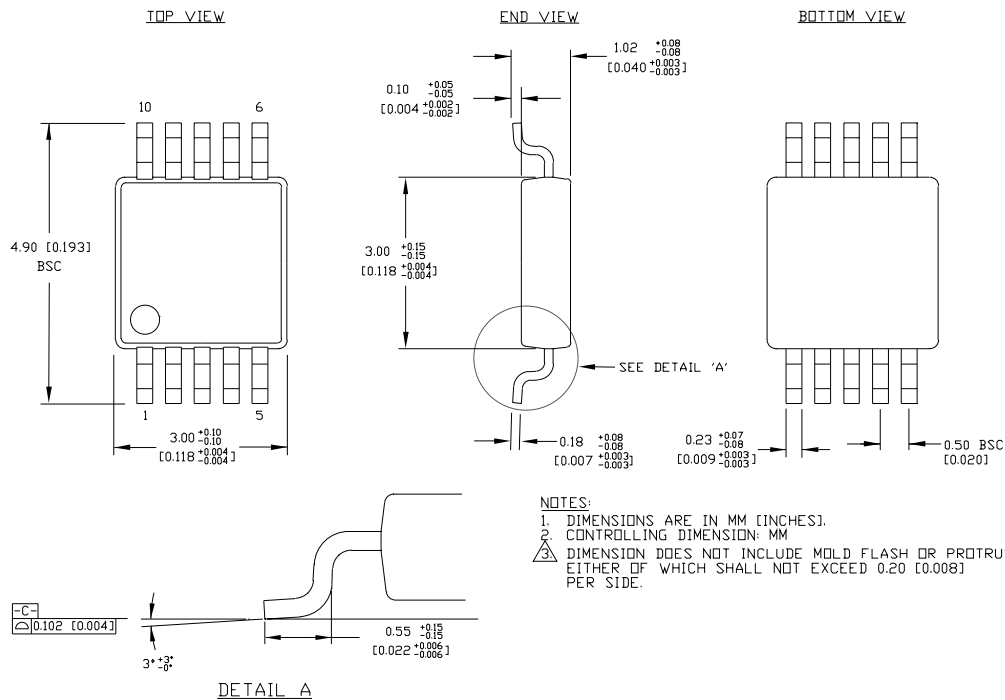
Symbol	Parameter	Condition	Min	Typ	Max	Units
t_{PHL} , t_{PLH} D	Propagation Delay D _{IN} – OUT	$I_{OUT} = 10\text{mA}$			1000	ps
t_{PHL} , t_{PLH} EN	Propagation Delay /EN – OUT	$I_{OUT} = 10\text{mA}$			1000	ps
t_r , t_f	Rise/Fall Time (20% to 80%)				1000	ps
I_{OR}	Output Current Ringing	$I_{OUT} = 5$ to 30mA			10	%

Notes:

8. Specification for packaged product only.
 9. $R_{EXT} = R_{SER} = 25\Omega \pm 1\%$; R_{SER} connected directly to V_{CC} .

TYPICAL OPERATING CHARACTERISTICS

10 LEAD MSOP (K10-1)



Rev. 00

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