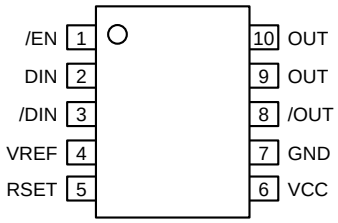
PACKAGE/ORDERING INFORMATION



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/ 75kΩ pulldown resistor. Modulation current goes to zero when deasserted high.
2, 3	DIN, /DIN	Differential 100k PECL compatible input w/ 75kΩ 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 ±10% or V_{CC} = 5.0V ±10%; T_A = –40°C to +85°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} = 25mA			25	mA
I_{OUT_OFF}	Output LOW Current (/EN = 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 ratlng 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 ≥500lfpm 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]

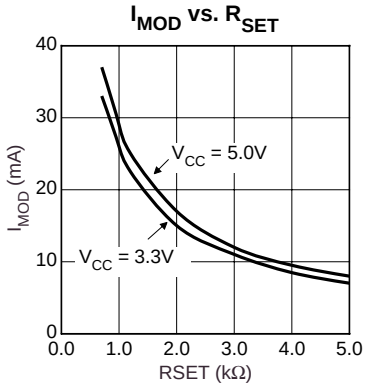
I_{MOD} =10mA; GND = 0V; V_{CC} = 3.3V ±10% or V_{CC} = 5.0V ±10%; T_A = –40°C to +85°C

Symbol	Parameter	Condition	Min	Typ	Max	Units
t_{PHL}, t_{PLH} D	Propagation Delay D_{IN} – OUT	I_{OUT} = 10mA			1000	ps
t_{PHL}, t_{PLH} EN	Propagation Delay /EN – OUT	I_{OUT} = 10mA			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	%

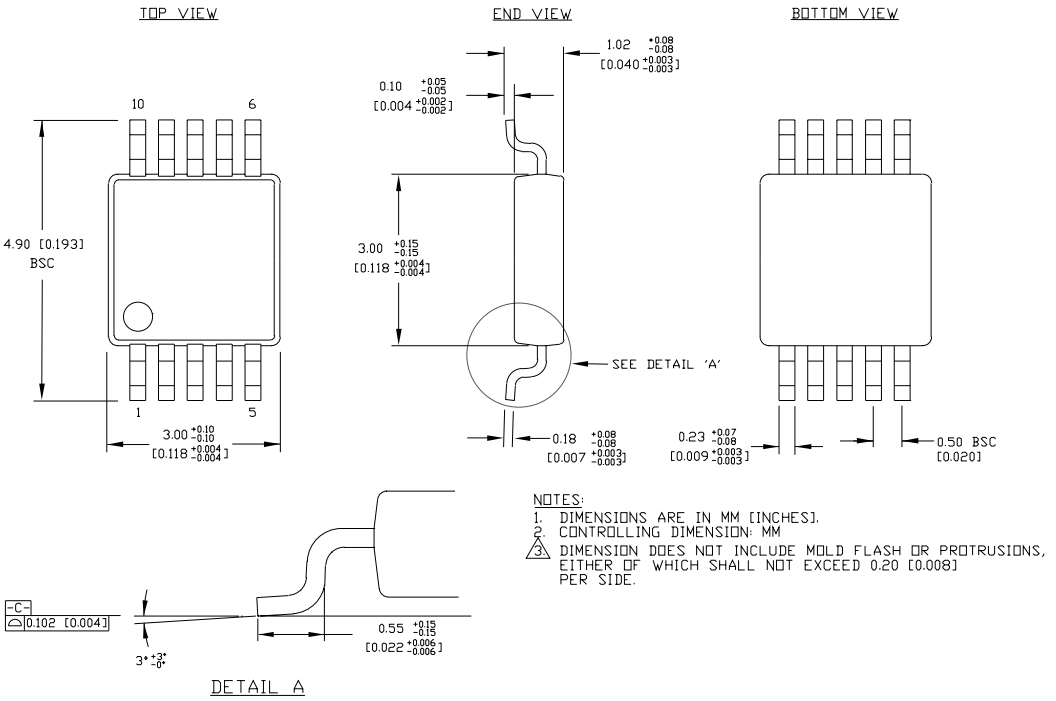
Notes:

8. Specification for packaged product only.
9. R_{EXT} = R_{SER} = 25Ω ±1%; R_{SER} connected directly to V_{CC}.

TYPICAL OPERATING CHARACTERISTICS



10 LEAD MSOP (K10-1)



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