



### ◆ Application

- Ethernet, Fibre Channel, SONET/SDH line cards, T1/E1, T3/E3 line cards
- Pb free product

### ◆ Options

- TAPE & REEL

### ◆ Standard Specification

(Nominal frequency referenced to frequency at 25°C ±2°C)

Logic Family		HCMOS														
Frequency Stability		+/-10ppm , +/-15ppm , +/-25ppm , +/-50ppm , +/-100ppm														
Operating Temp. Range		-20°C ~ +70°C , -40°C ~ +85°C , -40°C ~ +125°C														
Storage Temp. Range		-55°C ~ +125°C														
High Level ("1")		+90% V <sub>DD</sub> Min														
Low Level ("0")		+10% V <sub>DD</sub> Max														
Symmetry		40% ~ 60% (@ +50% V <sub>DD</sub> Level)														
Jitter		1.544 ~ 80.000MHz						80.0001 MHz ~ 125.0000 MHz								
		5ps RMS (1-sigma) max 1.5ps RMS (1-sigma) max, phase jitter in 10KHz ~ 20MHz Freq. Band 50ps peak-to-peak max						3ps RMS (1-sigma) max 1ps RMS (1-sigma) max, phase jitter in 10KHz ~ 20MHz Freq. Band 30ps peak-to-peak max								
7 X 5 PKG.	M575xH			M375xH			M275xH			M175xH						
Frequency Range(MHz)	1.000 ~ 50.000	50.000+ ~ 70.000	70.000+ ~ 106.25	1.000 ~ 35.328	35.328+ ~ 50.000	50.000+ ~ 125.000	1.544 ~ 32.000	32.000+ ~ 50.000	50.000+ ~ 125.000	1.544 ~ 36.000	36.000+ ~ 50.000	50.000+ ~ 70.000				
Input Voltage	+ 5.0 Vdc ± 10%			+ 3.3 Vdc ± 10%			+ 2.5 Vdc ± 5%			+ 1.8 Vdc ± 5%						
Input Current	30mA Max	50mA Max	65mA Max	15mA Max	25mA Max	40mA Max	15mA Max	25mA Max	35mA Max	4mA Max	7mA Max	10mA Max				
Rise & Fall Time	10nS Max	6nS Max		10nS Max	5nS Max		10nS Max	7nS Max	3nS Max	4nS Max	2.5nS Max					
Output Load	50pF	30pF	15pF	15pF			15pF			15pF						
5 X 3.2 PKG.	M553xH				M353xH				M253xH				M153xH			
Frequency Range	1.544 ~ 32.000	32.000+ ~ 50.000	50.000+ ~ 70.000	70.000+ ~ 125.000	1.8432 ~ 40.000	40.000+ ~ 60.000	60.000+ ~ 80.000	80.000+ ~ 125.000	1.8432 ~ 32.000	32.000+ ~ 50.000	50.000+ ~ 70.000	70.000+ ~ 125.000	1.8432 ~ 36.000	36.000+ ~ 50.000	50.000+ ~ 70.000	70.000+ ~ 125.000
Input Voltage	+ 5.0 Vdc ± 10%				+ 3.3 Vdc ± 10%				+ 2.5 Vdc ± 5%				+ 1.8 Vdc ± 5%			
Input Current	27mA Max	50mA Max	65mA Max		15mA Max	25mA Max	40mA Max	55mA Max	15mA Max	25mA Max	35mA Max		15mA Max	25mA Max	35mA Max	
Rise & Fall Time	8nS Max	5nS Max	3nS Max		7nS Max	5nS Max	3nS Max		10nS Max	7nS Max	3nS Max		10nS Max	7nS Max	3nS Max	
Output Load	50pF	30pF	15pF		15pF				15pF				15pF			
3.2 X 2.5 PKG.	M532xH			M332xH			M232xH			M132xH						
Frequency Range	1.8432 ~ 50.000	50.000+ ~ 80.000		1.8432 ~ 50.000	50.000+ ~ 80.000		1.8432 ~ 50.000	50.000+ ~ 80.000	1.8432 ~ 50.000	50.000+ ~ 80.000		1.8432 ~ 50.000	50.000+ ~ 80.000			
Input Voltage	+ 5.0 Vdc ± 10%			+ 3.3 Vdc ± 10%			+ 2.5 Vdc ± 5%			+ 1.8 Vdc ± 5%						
Input Current	20mA Max	35mA Max		10mA Max	18mA Max		8mA Max	15mA Max	8mA Max	15mA Max		8mA Max	15mA Max			
Rise & Fall Time	5nS Max			5nS Max			5nS Max			5nS Max						
Output Load	15pF			15pF			15pF			15pF						

### ◆ Parts Number Guide

Classification	Description									
Example	M	5	7	5	0	H	C	E	--	20.000000 MHz (Frequency)
Logo	M									MDX-KONY
Supply Voltage		5								5.0Volt
		3								3.3Volt
		2								2.5Volt
		1								1.8Volt
Package size			7	5						7 X 5mm
			5	3						5 X 3.2mm
			3	2						3.2 X 2.5mm
Temperature Range					0					-20 ~ +70C
					2					-40 ~ + 85C
					4					-40 ~ +125C
Logic & Duty						G				HCMOS, 45~55%
						H				HCMOS, 40~60%
Frequency Stability							AA			+/-15ppm
							A			+/-25ppm
							B			+/-50ppm
							C			+/-100ppm
							S			+/-10ppm
N/C or Tri-state								( )		Standard Logic
								E		Tri-state

Ref 2011-05a - All specifications are sujet to change without notice



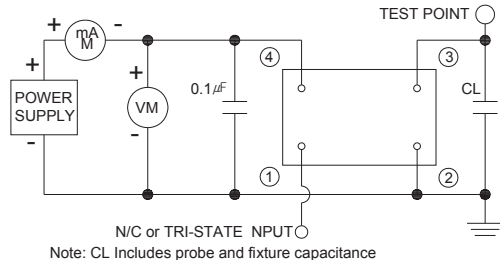
### ◆ Dimension(mm)

	7 X 5 PKG.	5 X 3.2 PKG.	3.2 X 2.5 PKG.
Package Dimension	<p>Top view: #1, #2, #3, #4, 5.2MAX, 7.2MAX Side view: 1.32MAX Pin view: #1, #2, #3, #4, 1.4, 1.1, 2.6, 5.08</p>	<p>Top view: #1, #2, #3, #4, 5.0, 3.2 Side view: 1.3MAX Pin view: #1, #2, #3, #4, 1.2, 0.9, 1.2, 2.54</p>	<p>Top view: #1, #2, #3, #4, 2.5±0.20, 3.2±0.20 Side view: 1.2max. Pin view: #1, #2, #3, #4, 1.0, 0.75, 1.2</p>
Recommended Land Pattern	<p>2.0, 1.8, 4.2, 5.08</p>	<p>1.5, 1.7, 2.2, 2.54</p>	<p>1.2, 1.5, 1.6, 2.1</p>

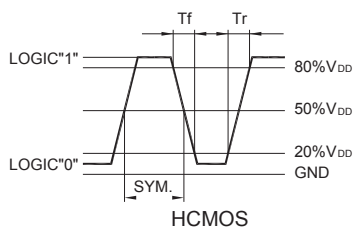
### ◆ Pin Connection

Pin No.	Pin Functions
#1	Tri-State or N/C
#2	GND
#3	Output
#4	Vdc

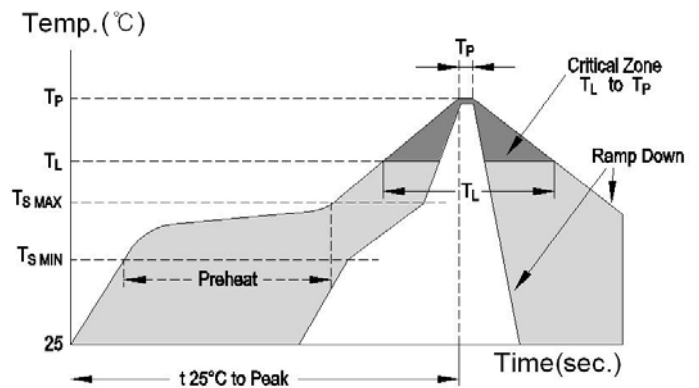
### ◆ Test Circuit



### ◆ Output Waveform



### ◆ IR/Convection Reflow Profile



Ramp-up rate ( $T_{S_{MAX}}$ to $T_P$ )	3°C / second MAX
Preheat temperature ( $T_{S_{MIN}}$ to $T_{S_{MAX}}$ )	150 to 180°C
Preheat time	60 to 120 seconds
Time above temperature ( $T_L$ )	217°C , 60 second
Peak temperature ( $T_P$ )	260°C MAX , 10sec MAX
Ramp-down rate	4°C / sec MAX
Time 25°C to peak temperature	6 minutes MAX

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