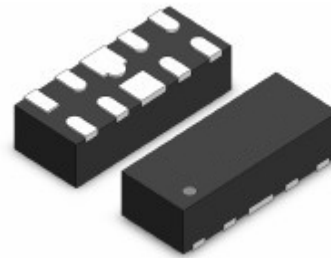


Features

- Ultra low capacitance: 0.3pF typical (I/O to I/O)
- Low clamping voltage
- Working voltage: 5V
- Up to 4 lines protects
- RoHS compliant



IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 8\text{kV}$ contact $\pm 15\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 μs)

DFN2510-10

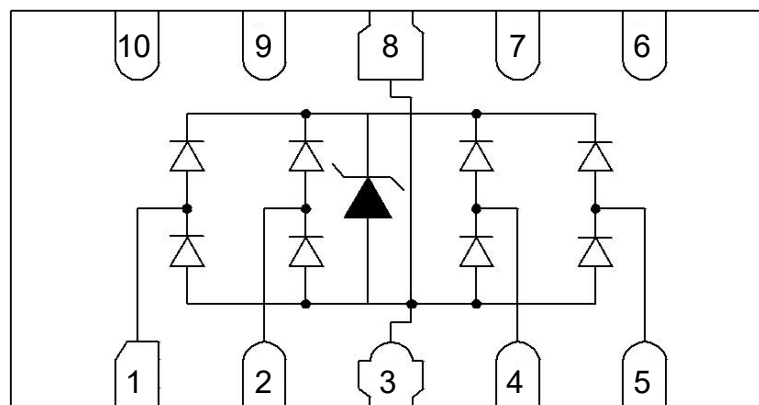
Applications

- HDMI 1.3 & 1.4, USB 2.0 & 3.0 and MDDI Ports
- Monitors and Flat Panel Displays
- Set-Top Box and Digital TV
- Video Graphics Cards
- Digital Video Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports

Mechanical Characteristics

- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Schematic & PIN Configuration



DFN2510-10

Absolute Maximum Rating

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$ waveform)	P_{PP}	50	W
Peak Pulse Current (8/20 μs)	I_{pp}	5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 15 ± 8	kV
Operating Temperature Range	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to + 150	$^{\circ}C$

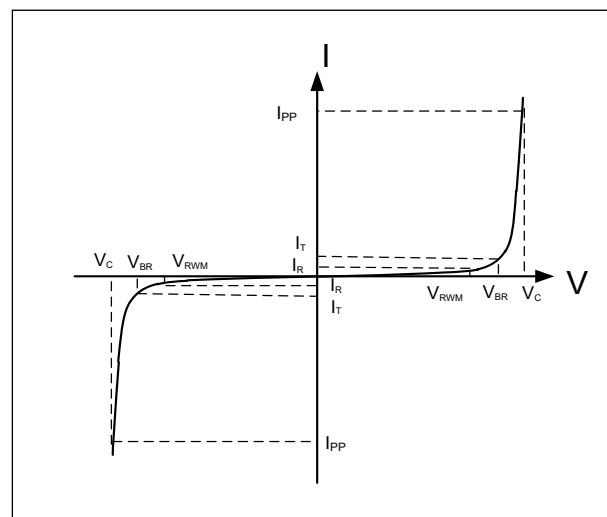
Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				3.3	V
Punch-through Voltage	V_{PT}	$I_T = 2\mu A$, Any I/O Pin to Gnd	3.5			V
Snap-Back Voltage	V_{SB}	$I_T = 50mA$, Any I/O Pin to Gnd	2.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3V$, Any I/O Pin to Gnd			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1A$ (8 x 20 μs pulse), Any I/O Pin to Gnd			6.5	V
Clamping Voltage	V_C	$I_{PP} = 5A$ (8 x 20 μs pulse), Any I/O Pin to Gnd			10	V
Junction Capacitance	C_J	$V_R = 0V$, $f = 1MHz$, Between I/O Pins		0.3	0.4	pF
Junction Capacitance	C_J	$V_R = 0V$, $f = 1MHz$, Any I/O Pin to Gnd			0.8	pF

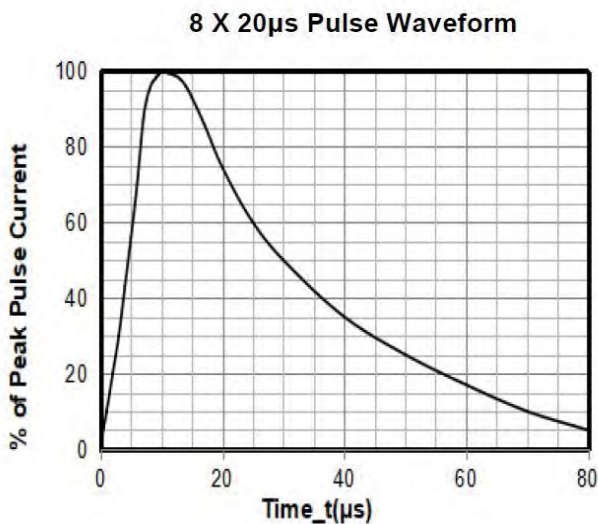
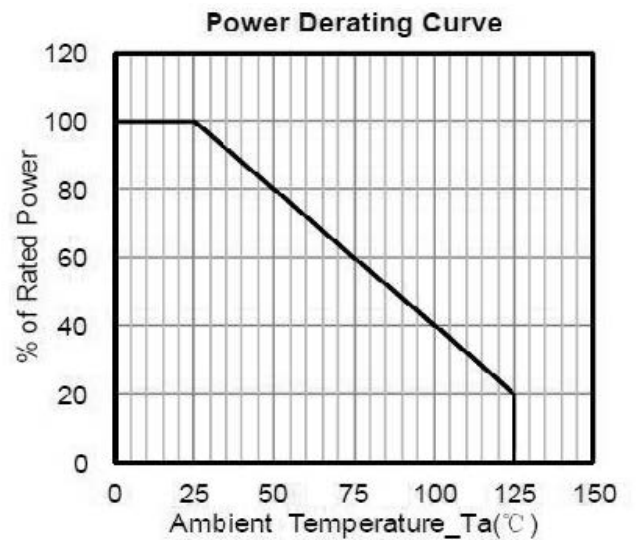
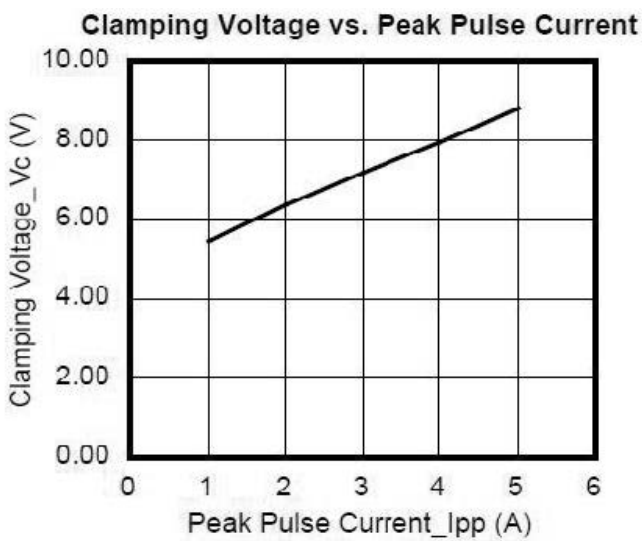
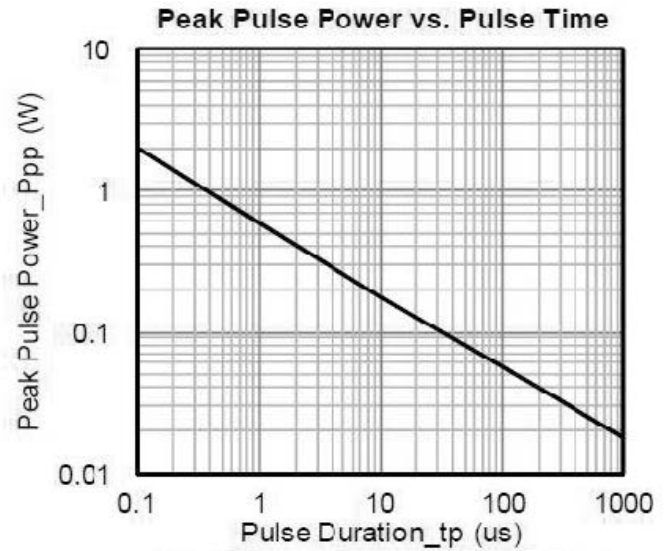
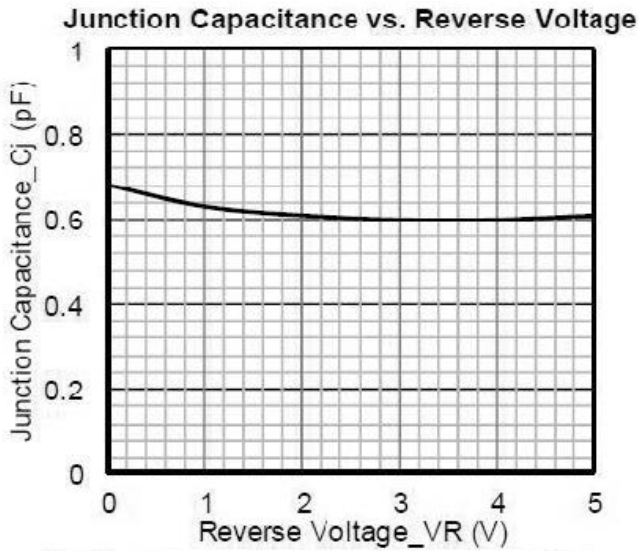
Electrical Parameters (TA = 25 $^{\circ}C$ unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current

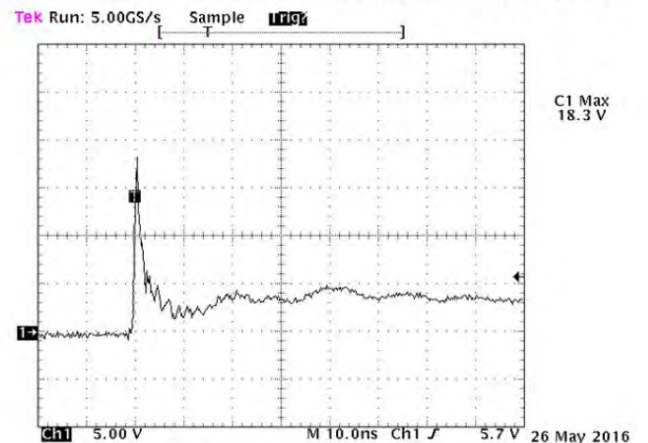
Note: 8/20 μs pulse waveform.



Typical Characteristics



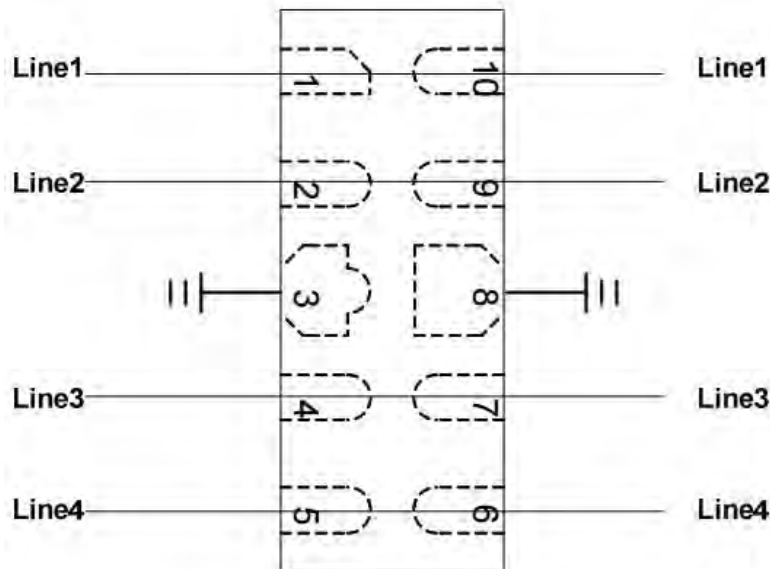
Contact discharge current waveform per IEC61000-4-2



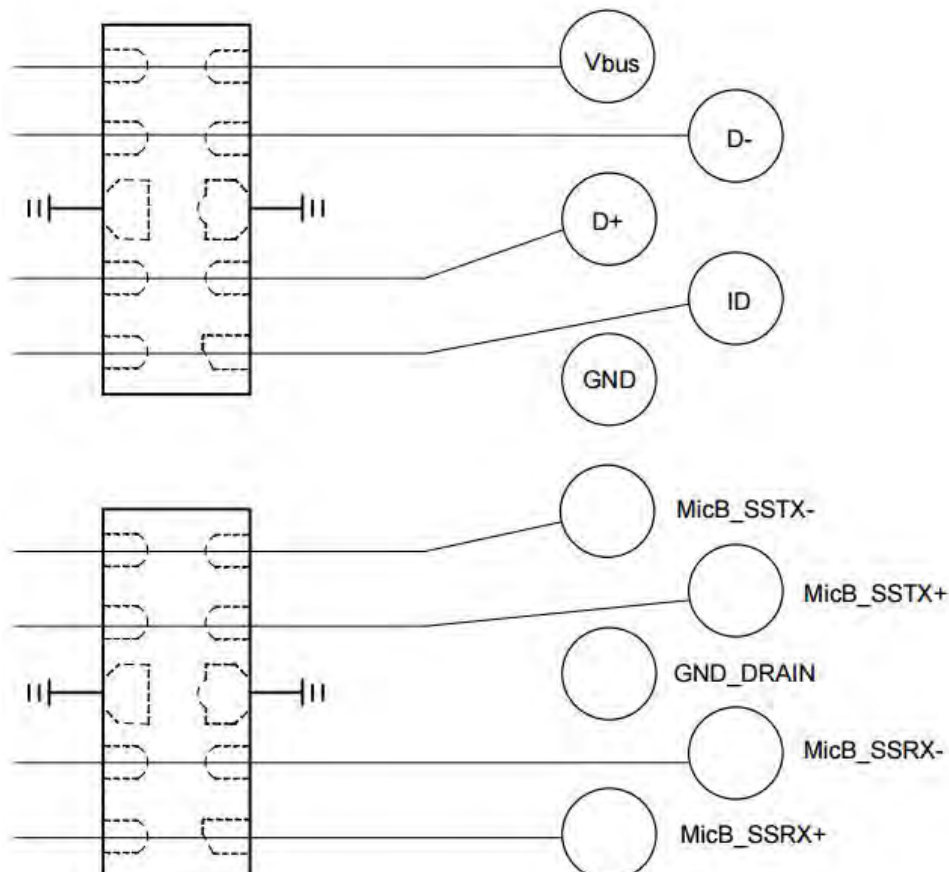
Note: Data is taken with a 10x attenuator

Typical Application

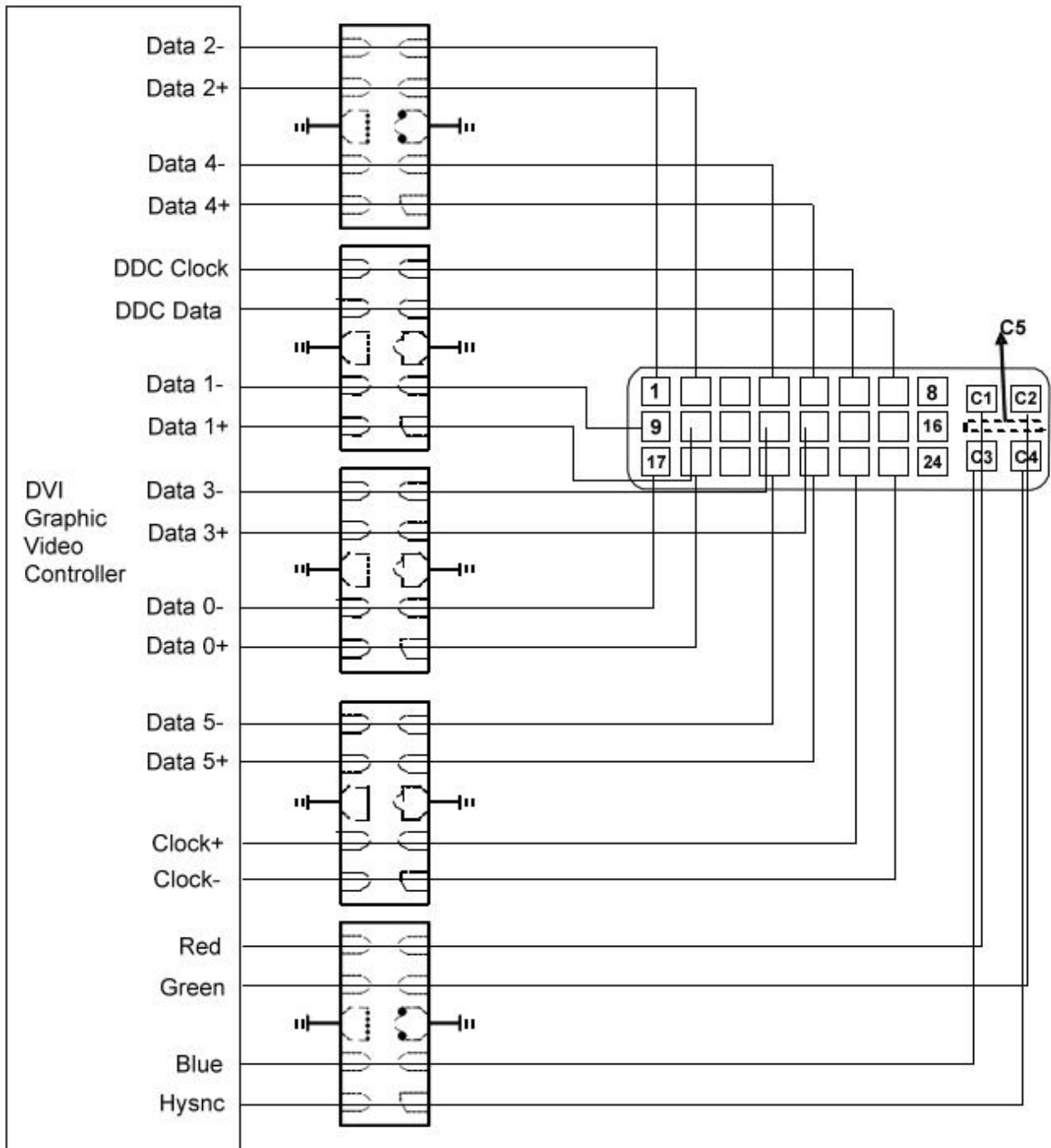
The PTN2510L08S3CA5 is designed for easy PCB layout by allowing the traces to run straight through the device. The PCB traces could be used to connect the pin pairs for each line. For example, line 1 enters at pin 1 and exits at pin 10 and the PCB trace connects Pin 1 and Pin 10 together. Ground is connected at Pin 3 and Pin 8.



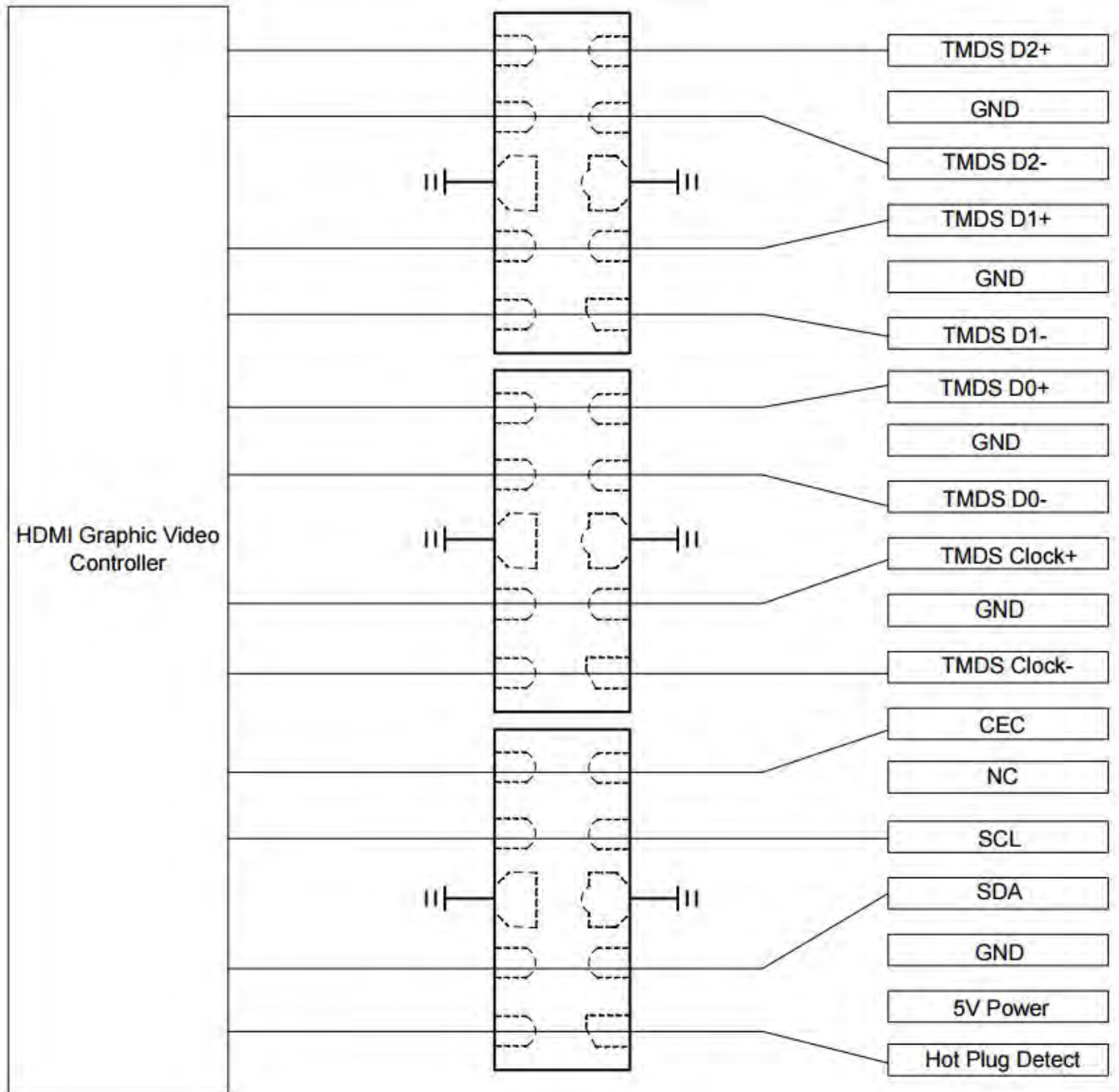
PTN2510L08S3CA5 On USB 3.0 Port Application



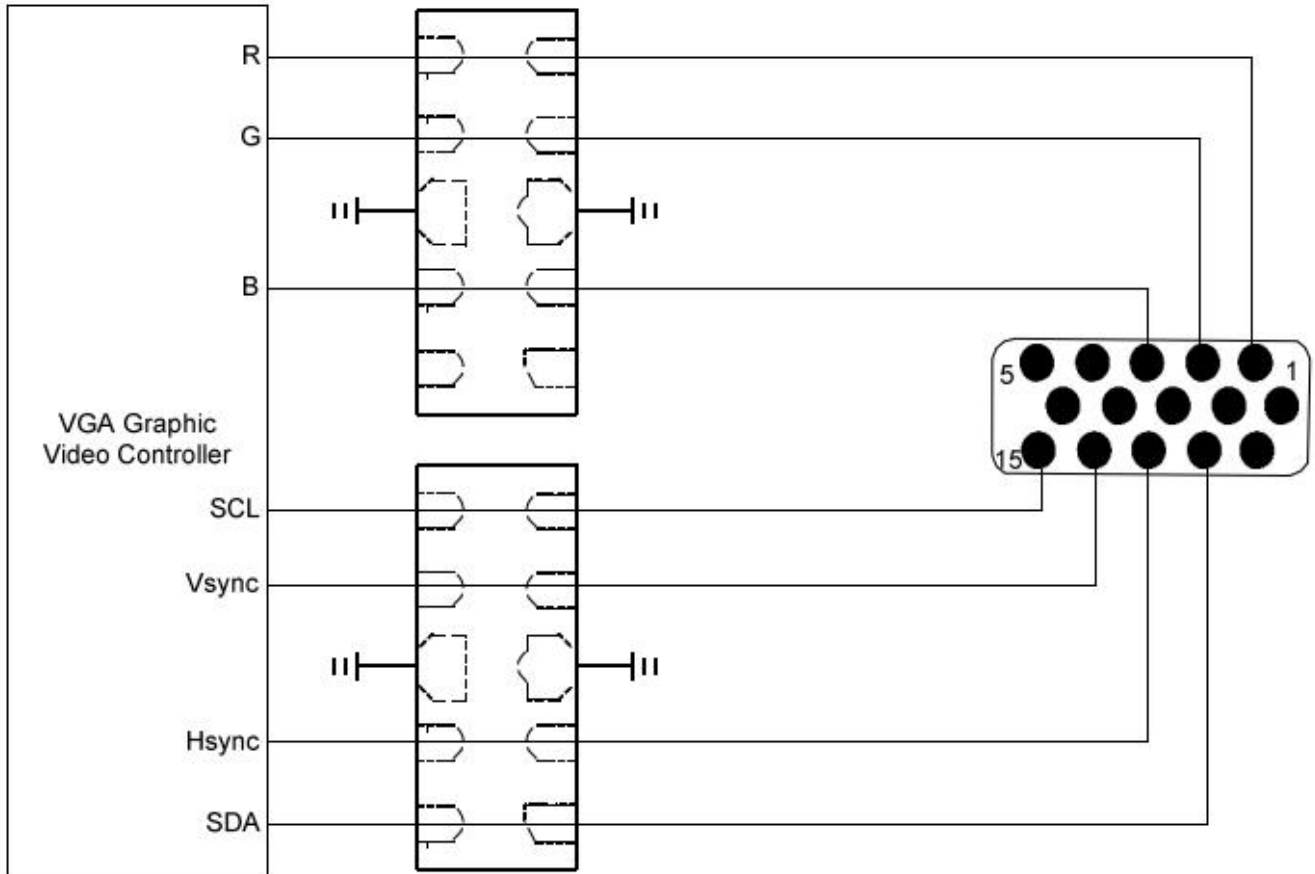
PTN2510L08S3CA5 On DVI Port Application



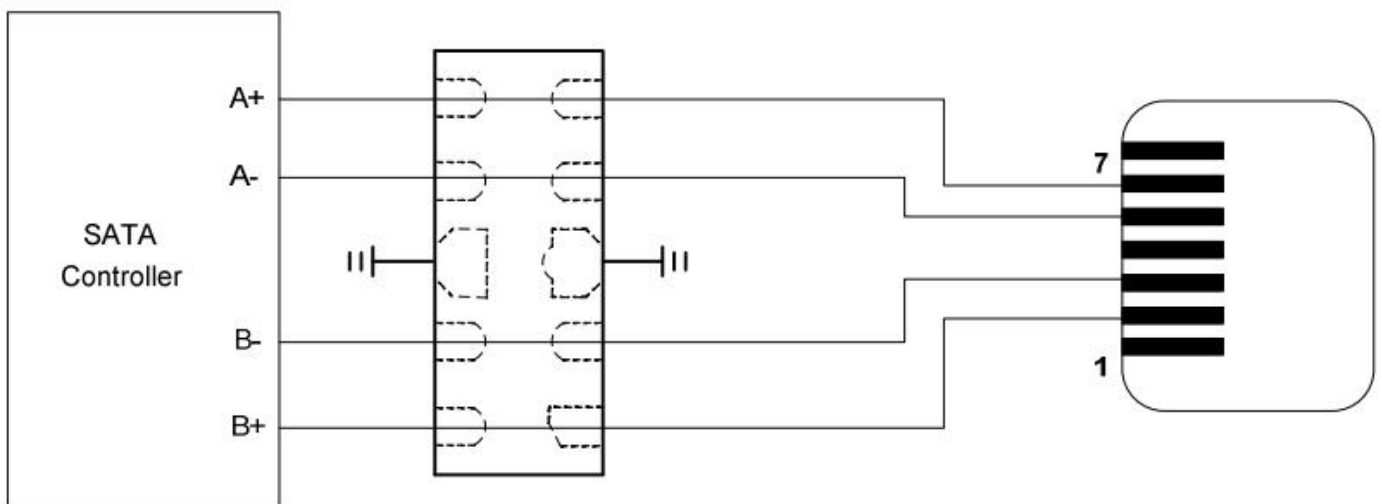
PTN2510L08S3CA5 On HDMI Port Application



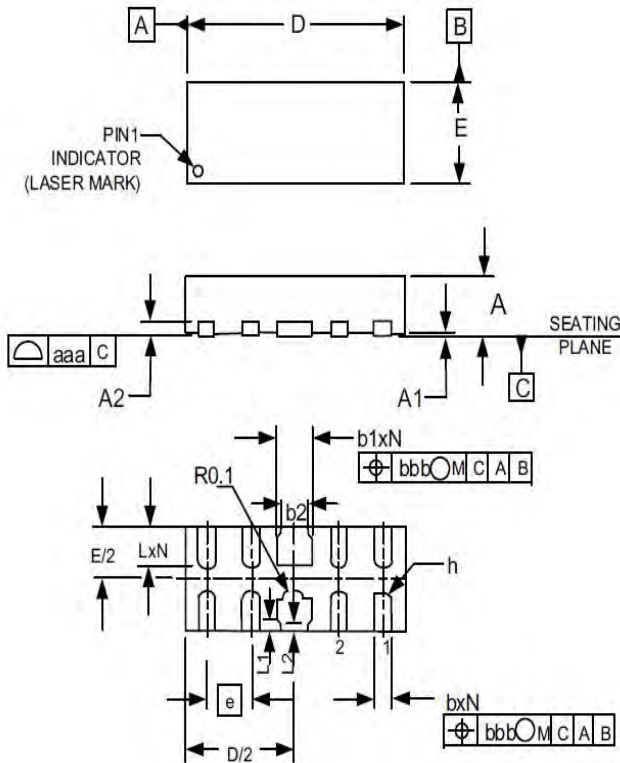
PTN2510L08S3CA5 On VGA Port Application



PTN2510L08S3CA5 On SATA Port Application

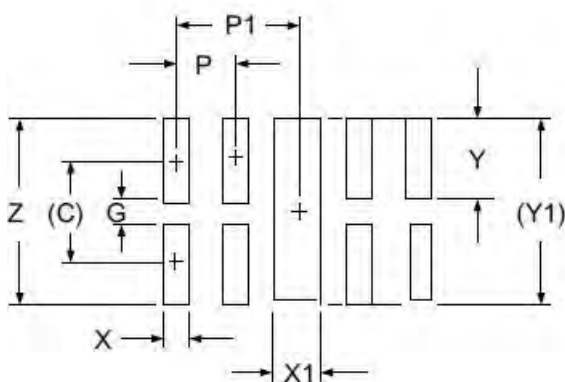


Package Mechanical Data



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.450	0.500	0.550	0.017	0.020	0.022
A1	0.000	0.001	0.002	0.000	0.020	0.050
A2	(0.150)			(0.006)		
b	0.100	0.200	0.250	0.006	0.008	0.010
b1	0.350	0.400	0.450	0.014	0.016	0.018
b2	0.200	0.250	0.450	0.005	0.010	0.018
D	2.450	2.500	2.550	0.096	0.098	0.100
E	0.950	1.000	1.050	0.037	0.039	0.041
e	0.500 BSC			0.020 BSC		
L	0.350	0.400	0.450	0.014	0.016	0.018
L1	0.000	0.075	0.100	0.000	0.003	0.004
L2	0.000	0.050	0.050	0.000	0.002	0.003
h	0.000	0.120	0.150	0.000	0.005	0.006
h	0.070	0.120	0.170	0.003	0.005	0.007
N	8.000			8.000		
aaa	0.080			0.003		
bbb	0.100			0.004		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	(0.875)	(0.034)
G	0.200	0.008
P	0.500	0.020
P1	1.000	0.039
X	0.250	0.010
X1	0.450	0.018
Y	0.675	0.027
Y1	(1.550)	(0.061)
Z	1.550	0.061

Ordering information

Order code	Package	Base qty	Delivery mode
PTN2510L08S3CA5	DFN2510	3k	Tape and reel