

APPLICATIONS

- ▶ USB2.0,USB3.0,Ethernet
- ▶ HDMI2.0,Displayport 1.3,eSATA
- ▶ Unified Display Interface
- ▶ Digital Visual Interface
- ▶ High Speed Serial Interface

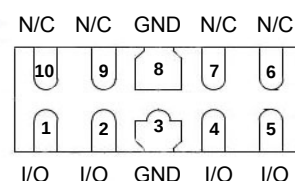
IECCOMPATIBILITY

- ▶ IEC61000-4-2 (ESD) $\pm 20\text{kV}$ (air), $\pm 15\text{kV}$ (contact)
- ▶ IEC61000-4-5 (Lightning) $5.5\text{A}(8/20\mu\text{s})$

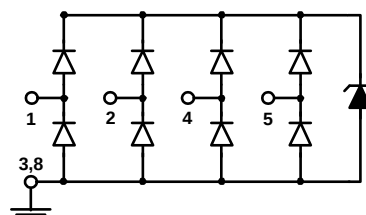
FEATURES

- ▶ 50.0 Watts Peak Pulse Power per Line ($t_p=8/20\mu\text{s}$)
- ▶ Protects Four I/O lines
- ▶ Operating Voltage: 5V
- ▶ Ultra Low Capacitance: 0.5pF typical (I/O to GND)

DFN2510-10L



PIN CONFIGURATION



Order information

Model	Marking	Package	shipping
ESD5Z005SR	A5S	DFN2510-10L	3000/Tape&Reel

Absolute maximum rating@25°C			
Rating	Symbol	Value	Unit
Peak Pulse Power ($t_P = 8/20\mu\text{s}$)	Ppp	66	W
Lead Solder Temperature –Maximum (10 Seconds)	TL	260	°C
Operating Junction Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical characteristic(T=25°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				5.0	V
Reverse leakage current	I_R I/O to GND	$V_{RWM}=5.0V$			0.5	uA
Reveres breakdown voltage	V_{BR} I/O to GND	$I_T=1mA$	6.0			V
Forward Voltage	V_F GND to I/O	$I_T=10.0mA$		0.7	1.2	V
Clamping voltage	V_C I/O to GND	$I_{PP}=1A(8/20us)$		7.0		V
		$I_{pp}= 5.5A(8/20us)$		12.0		V
Junction capacitance	C_J I/O to GND	$V_R=0V$ f=1MHz		0.5	0.6	pF
Junction capacitance	C_J I/O to I/O	$V_R=0V$ f=1MHz		0.25	0.3	pF

Electrical characteristic(T=25°C, unless otherwise specified)
Electrical performance curve
 V_{RWM} Reverse stand-off voltage

 I_R Reverse leakage current

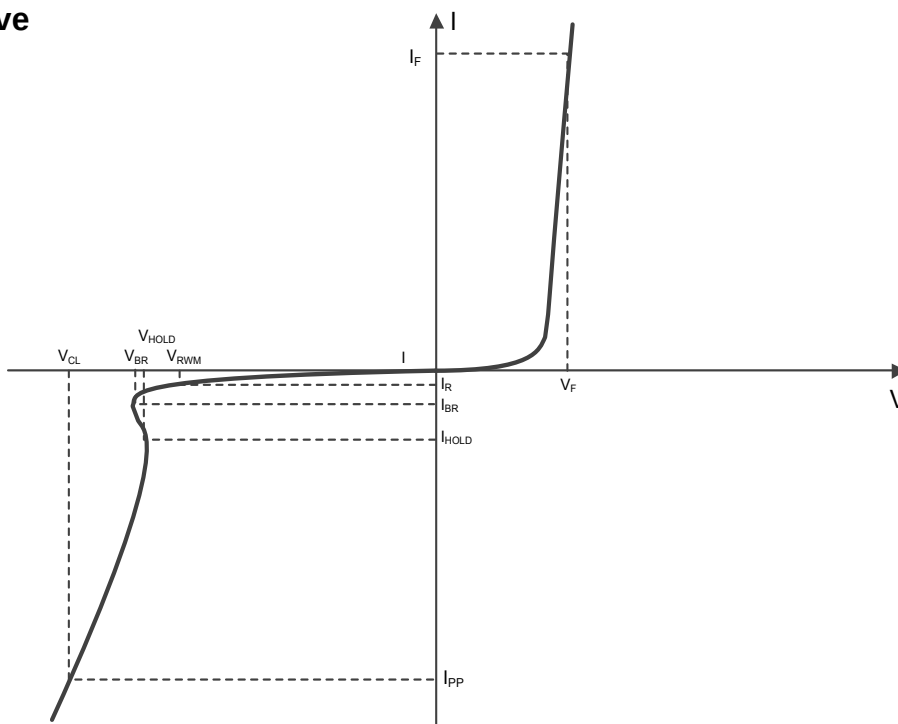
 V_{CL} Clamping voltage

 I_{PP} Peak pulse current

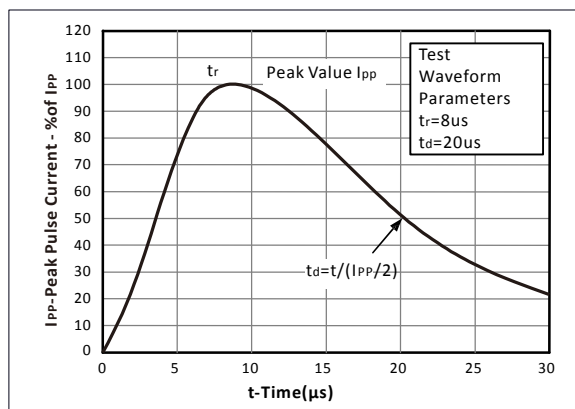
 V_{BR} Reverse breakdown voltage

 I_{BR} Reverse breakdown current

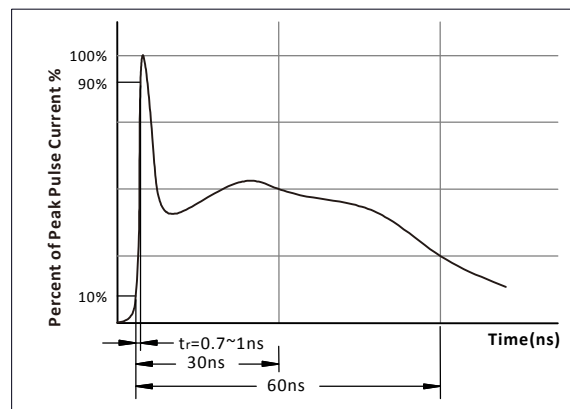
 V_{HOLD} Reverse holding voltage

 I_{HOLD} Reverse holding current

Uni -Directional TVS

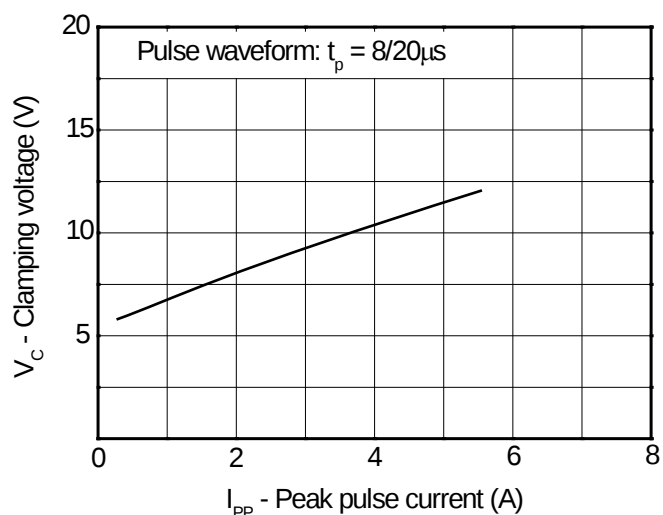
Typical characteristics ($T_A=25^\circ\text{C}$, unless otherwise noted)



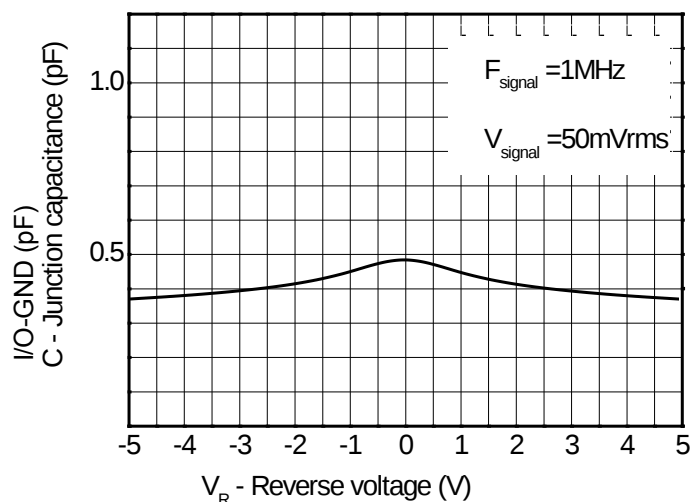
8/20 μs Pulse Waveform



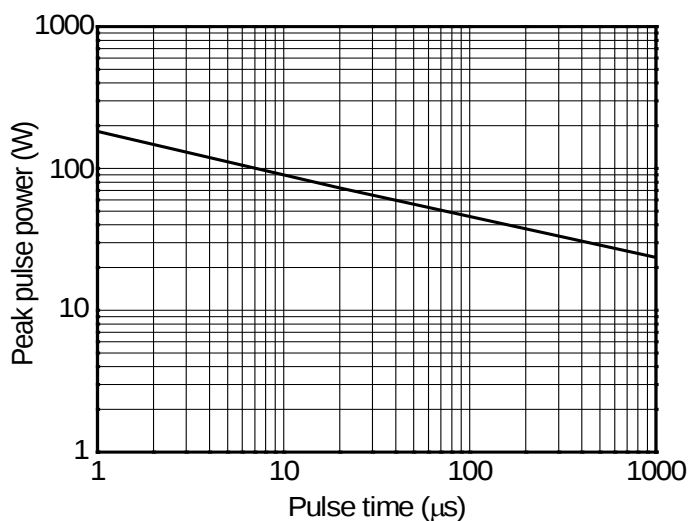
ESD Pulse Waveform (according to IEC 61000 4 2)



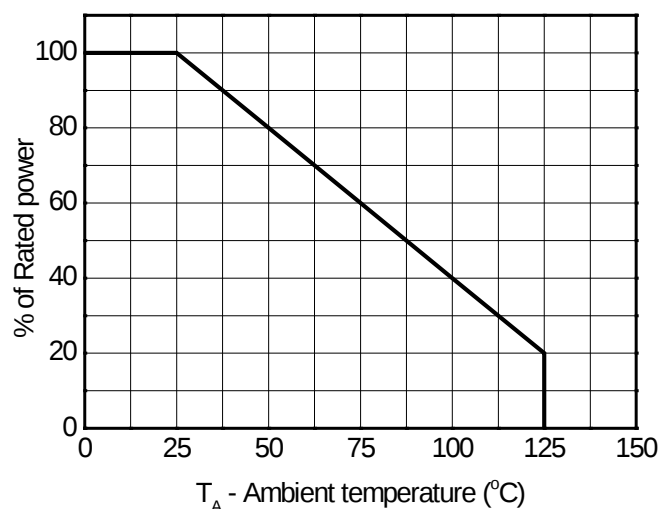
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

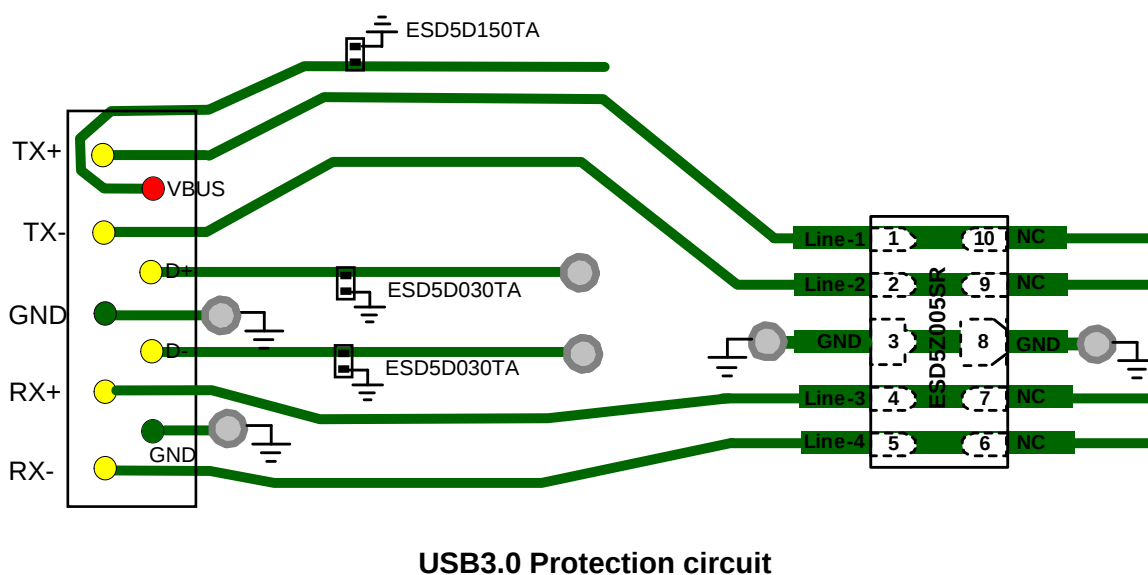
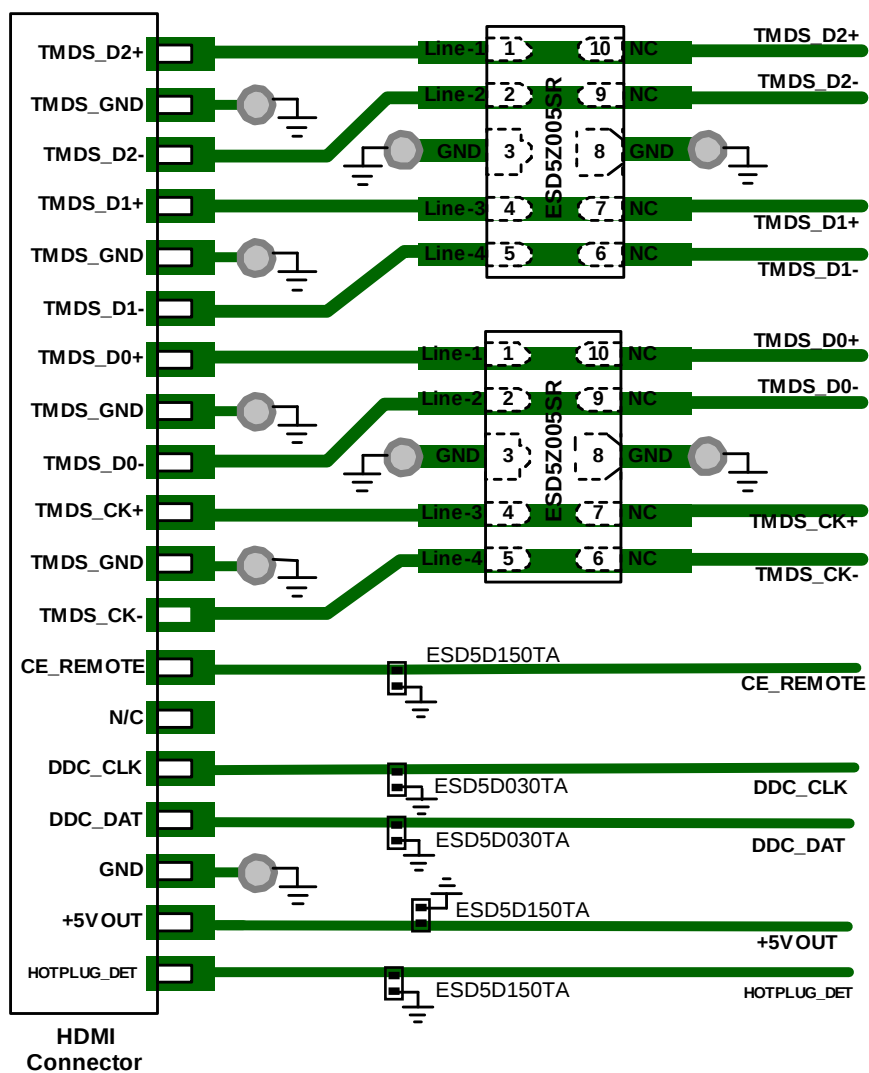


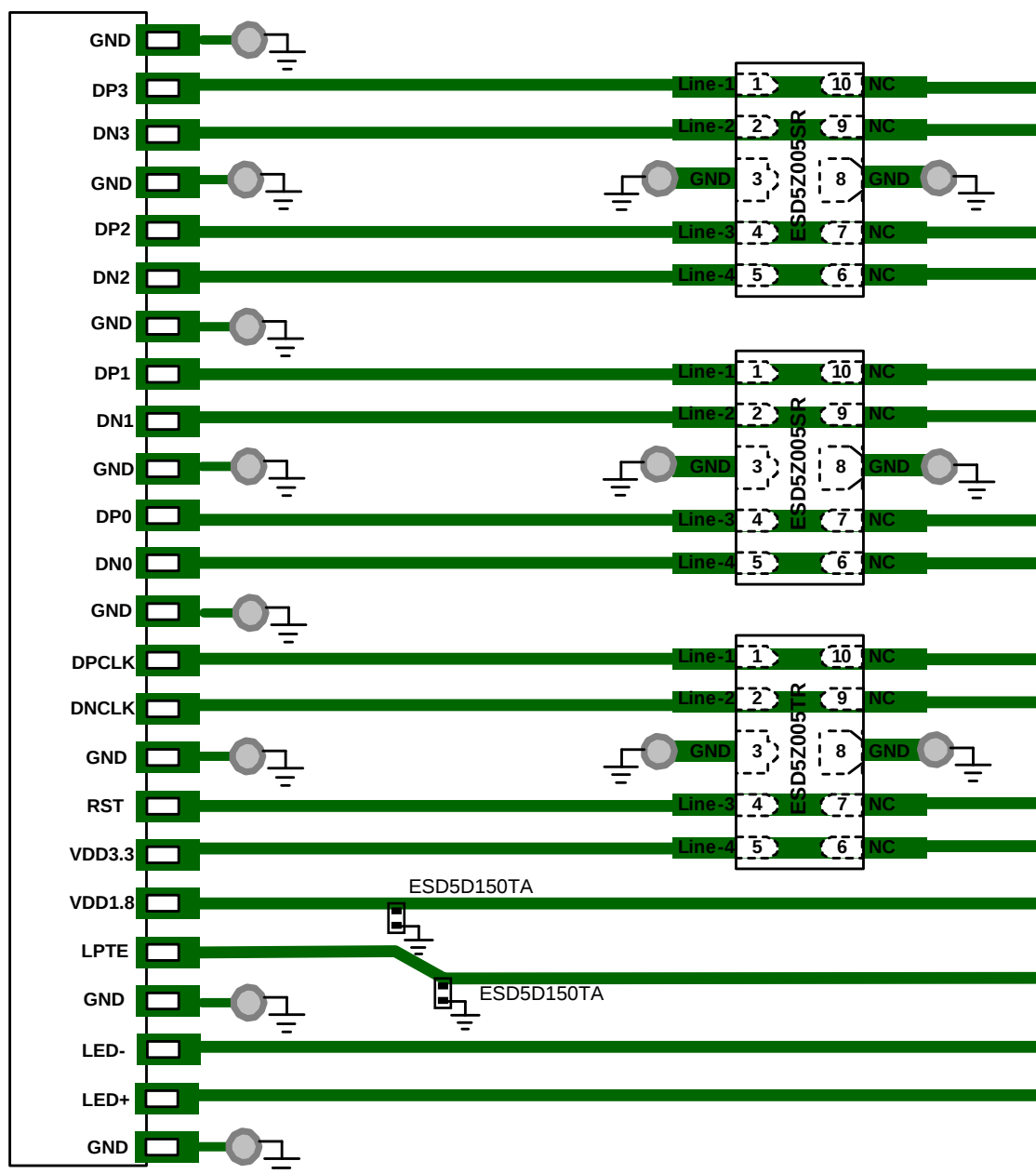
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

APPLICATION INFORMATION

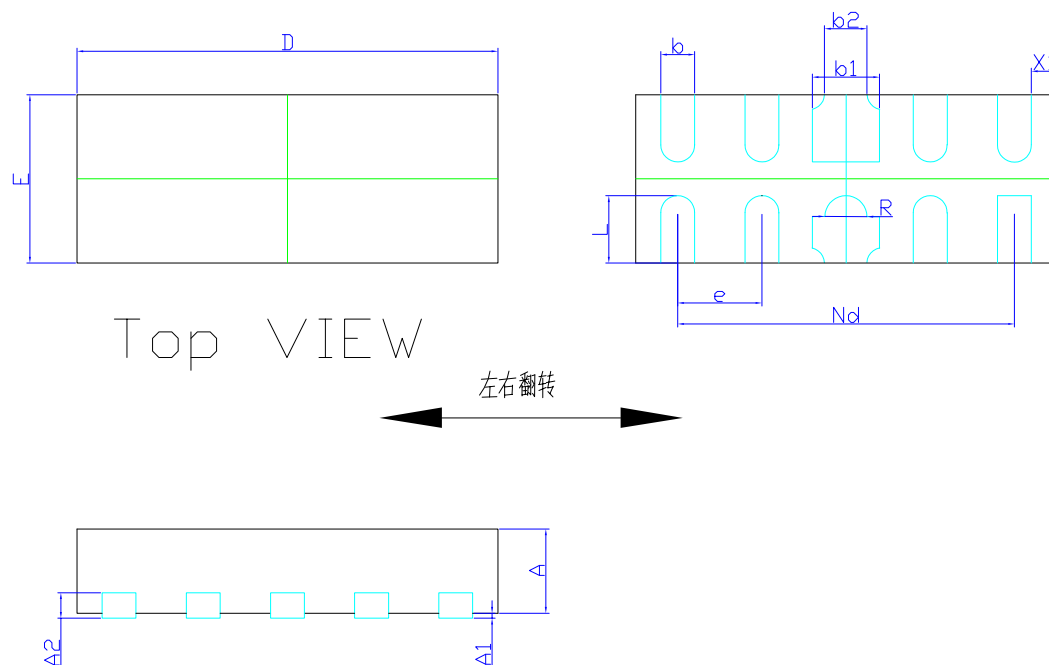




MIPI Protection circuit

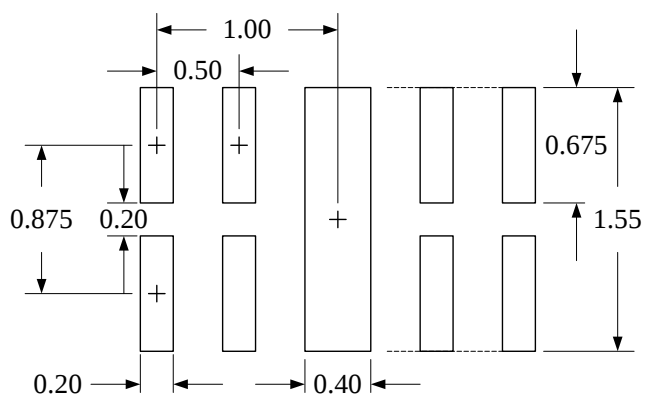
Package outline dimensions

DFN2510-10L

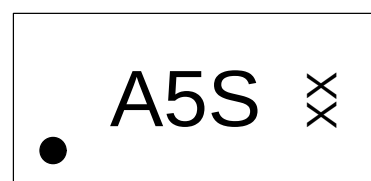


DIM	Millimeters	
	Min	Max
A	0.50	0.60
A1	0.00	0.05
A2	0.15REF	
b	0.15	0.25
b1	0.35	0.45
b2	0.20REF	
D	2.45	2.55
E	0.95	1.05
L	0.33	0.43
e	0.50BSC	
Nd	2.00BSC	
X1	0.22	0.28

PCB Layout Pattern



Marking Codes



Note

- (1) "A5S" is device code, fixed,
- (2) "XX" is date code.