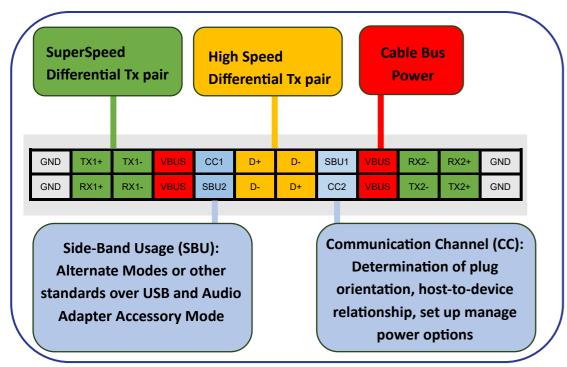
USB ESD Protection in HUB/Docking



USB Type-C Connector Layout

MAGNIAS

Recommended ESD Protection

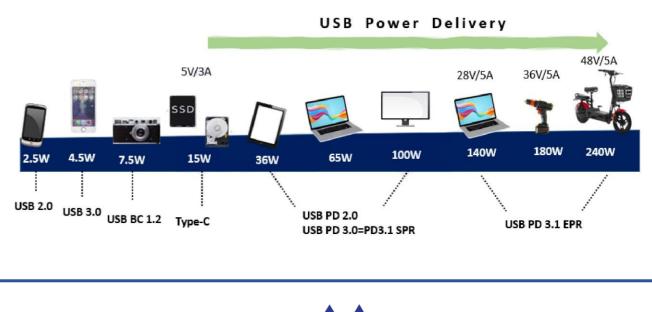
PIN	Product Name	Application	Package	V _{RWM} MAX (V)	V _{BR} ^{MIN} (V)	V _{CLAMP} (V)	C _J ^{TYP} (pF)	ESD ^c (kV)	Ipp ^{8/20,2Ω} (A)	Status
Tx, Rx, D+/D-	PZ0102A-F2	USB 4.0	DFN0603-2L (0.6 x 0.3 x 0.3)	1	1.35	5.5	0.2	±15	6.5	Active
	PZ0302Y-F2	USB 3.2		3.3	5	5.8	0.2	±20	9	
	PZ0502Y-F2			5	5.5	6	0.2	±20	9	
CC, SBU	PS0510C-F2	All USB		5	6.2	7.3	10	±19	7	
VBUS	PS0591Y-F2	USB PD		5	6	9.5	1	±30	11	
	PT0588J-F6		DFN1610-2L (1.6 x 1.0 x 0.5)	5	6	10	800	±30	110	
	PT1284Y-F6			12	13	15	380	±30	45	
	PT2082J-F6			22	23	24	210	±30	50	

up to USB 4.0 (40Gbps) Type-C **Magnias' ESD Features:**

- > Ultra-Low Capacitance, for highest signal integrity down to 0.15 pF
- > Low clamping voltage, Ensuring Advanced Protection down to 0.1 Ω (R_{DYN})
- > Enhanced Durability, against ESD up to 30 kV & Surge up to 50 A at 8/20µs
- > Qualified protection against:
 - IEC 61000-4-2, Electrostatic discharge immunity test

 - IEC 61000-4-5, Disruptive surges can appear on power and data lines
- Various Packaging, from discrete solution to multiple line solution

USB PD (Power Delivery):



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Small Outline Solutions Supporting

o IEC 61000-4-4, Immunity test based on electrical fast transient (EFT) / burst transients

