



Micro Commercial Components



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ESDLC3603P3

Features

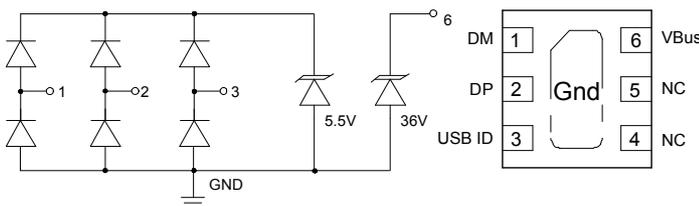
- Low Capacitance 0.4pF typical(I/O to I/O)
- Low operating Voltage: 5.0 V
- Low clamping voltage
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

- Junction Temperature: -55°C to +125°C
- Storage Temperature: -55°C to +150°C

Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Contact Air	V_{ESD}	± 20 ± 25	KV

Internal Structure



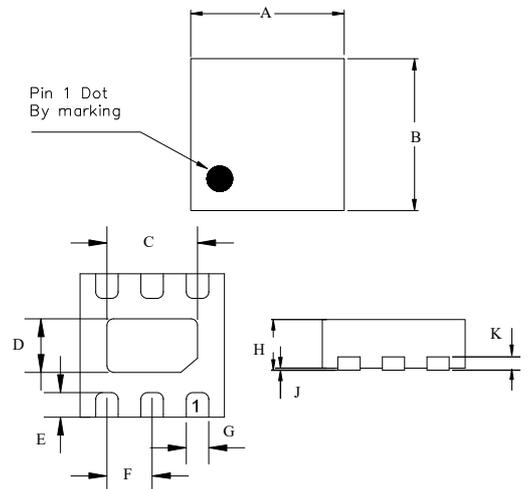
Circuit Diagram

Pin Schematic

Marking: 3654P/3603

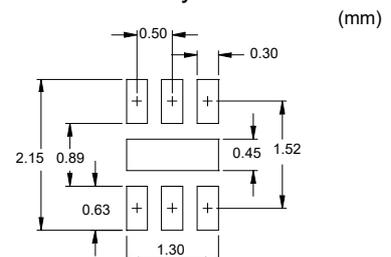
ESD Protection Device

DFN1616-6



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.061	0.065	1.55	1.65	
B	0.061	0.065	1.55	1.65	
C	0.035	0.041	0.90	1.05	
D	0.020	0.026	0.50	0.65	
E	0.008	0.012	0.20	0.30	
F	0.020 REF.		0.50 REF.		
G	0.008	0.026	0.20	0.30	
H	0.020	0.024	0.50	0.60	
J	0.000	0.002	0.00	0.05	
K	0.006 REF.		0.15 REF.		

Suggested Solder Pad Layout



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Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
DP, DM, USB ID (Pins 1, 2, 3)			
Peak Pulse Power (8/20 μs)	Ppk	100	W
Peak Pulse Current (8/20 μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^\circ\text{C}$
VBus (Pin 6)			
Peak Pulse Power (8/20 μs)	Ppk	300	W
Peak Pulse Current (8/20 μs)	I _{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
DP, DM, USB ID TVS						
Reverse Working Voltage	V _{RWM}			5.5	V	Any I/O to ground
Breakdown Voltage	V _{BR}	6.5			V	I _T = 1mA, any I/O to ground
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5.5V, any I/O to ground
Clamping Voltage	V _C			10	V	I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			20	V	I _{PP} = 5A (8 x 20 μs pulse), any I/O pin to ground
Junction Capacitance	C _J			0.5	pF	V _R = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C _J			0.8	pF	V _R = 0V, f = 1MHz, any I/O pin to ground

Note: I/O Pins are 1, 2, 3

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Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
VBus TVS						
Reverse Working Voltage	V_{RWM}			36	V	Pin 6 to ground
Breakdown Voltage	V_{BR}	38		45	V	$I_T = 1\text{mA}$, pin 6 to ground
Reverse Leakage Current	I_R			0.2	μA	$V_{RWM} = 36\text{V}$, pin 6 to ground
Clamping Voltage	V_C			50	V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse), pin 6 to ground
Clamping Voltage	V_C			75	V	$I_{PP} = 4\text{A}$ (8 x 20 μs pulse), pin 6 to ground
Junction Capacitance	C_J			100	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$, pin 6 to ground



Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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