



**DEFCON 16 Circuit Board Badge**  
**Bill-of-Materials**  
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**Note: Do Not Populate C4, J2, J3**

Item	Quantity	Reference	Manufacturer	Manuf. Part #	Distributor	Distrib. Part #	Description
1	1	BT1	Keystone	1029	Digi-Key	1029K-ND	Battery holder for CR/123A
2	2	C1,C8	Kemet	T491A106M016AT	Mouser	80-T491A106M016	10uF tantalum capacitor, 16V, 20%, size A
3	1	C2	Kemet	T491A476M006AT	Mouser	80-T491A476M006	47uF tantalum capacitor, 6.3V, 20%, size A
4	5	C3,C6,C9,C10,C11	Kemet	C0603C104K4RACTU	Digi-Key	399-1096-2-ND	0.1uF bypass capacitor, 16V, X7R, 0603
5	2	C5,C7	Kemet	C0603C150J5GACTU	Digi-Key	399-1051-2-ND	15pF ceramic capacitor, NP0, 50V, 0603
6	8	D1-D8	Avago	HSMH-C192	FAI	HSMH-C192	LED, Red, 0603, 1.8Vf, 17mcd @ 20mA (leftover from DC15)
7	1	D9	Osram	SFH4650-Z	Digi-Key	475-2569-2-ND	LED, Infrared, 850nm, +/-20 degree angle, 16mW @ 100mA, SMD
8	1	J1	3M	SD-RSMT-2-MQ-WF	Digi-Key	3M5646TR-ND	SecureDigital memory socket/connector, push-push, R/A, SMD
9	1	Q1	Fairchild	MMBT4401	Digi-Key	MMBT4401FSTR-ND	Transistor, general purpose, NPN, 40V, 600mA, SOT23-3
10	8	R1-R8	Rohm	MCR03EZPJ681	Digi-Key	RHM680GTR-ND	680 ohm, 5%, 1/10W, 0603
11	2	R9,R12	Panasonic	ERJ-3GEYJ101V	Digi-Key	P100GTR-ND	100 ohm, 5%, 1/10W, 0603
12	1	R10	Panasonic	ERJ-3GEYJ470V	Digi-Key	P47GTR-ND	47 ohm, 5%, 1/10W, 0603
13	1	R11	Rohm	MCR03EZPJ221	Digi-Key	RHM220GTR-ND	220 ohm, 5%, 1/10W, 0603
14	2	R13,R14	Rohm	MCR03EZPJ104	Digi-Key	RHM100KGTR-ND	100k, 5%, 1/10W, 0603
15	1	R15	Panasonic	ERJ-3GEYJ103V	Digi-Key	P10KGTR-ND	10k, 5%, 1/10W, 0603
16	1	R16	Panasonic	ERJ-3GEYJ154V	Digi-Key	P150KGTR-ND	150k, 5%, 1/10W, 0603
17	1	R17	Panasonic	ERJ-3GEYJ105V	Digi-Key	P1.0MGTR-ND	1.0M, 5%, 1/10W, 0603
18	2	R18,R19	Yageo	RC0603FR-0733RL	Digi-Key	311-33.0HRTR-ND	33 ohm, 1%, 1/10W, 0603
19	1	SW1	C&K	KSC341JLFS	Digi-Key	401-1770-2-ND	SPST tactile momentary switch, 300gf, 6.2mm x 6.2mm, SMD
20	1	U1	Freescale	MC9S08JM60CLH	FAI	MC9S08JM60CLH	Microcontroller, LQFP64
21	1	U2	Sharp	GP1US301XP	Digi-Key	425-2527-2-ND	Receiver Module, Infrared (IR), 38kHz, 2.4V-5.5V, SMD
22	1	Y1	NDK	NX3225SA-12.000000MHZ	Digi-Key	644-1047-2-ND	Crystal, 12MHz, 8pF, SMD
23	1	PCB	e-Teknet	DC16 1.0	N/A	N/A	PCB (includes assembly and testing)