

**FEATURES :**

- 18PIN&22PIN SMD Package
- No-load input current as low as 5mA
- High Efficiency up to 85%
- Unregulated Output Types
- 1.5KVDC & 3KVDC Isolation
- Operating Temperature:-40°C TO +105°C
- Industry Standard Pinout
- Design refer to IEC62368, UL62368, EN62368

YUAN DEAN SCIENTIFIC



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Output Voltage	Output Current	Efficiency	Capacitive Load(μF)	Package Style
	Vdc	mA	%TYP	Max	
13DS1C-05S03N(H3)	3.3	303	74	2400	1
13DS1C-05S05N(H3)	5	200	82	2400	1
13DS1C-05S09N(H3)	9	112	83	1000	1
13DS1C-05S12N(H3)	12	84	83	560	1
13DS1C-05S15N(H3)	15	67	83	560	1
13DS1C-05S24N(H3)	24	42	85	220	1
13DS1C-05D03N(H3)	±3.3	±150	74	±1200	1
13DS1C-05D05N(H3)	±5	±100	82	±1200	1
13DS1C-05D09N(H3)	±9	±56	83	±470	1
13DS1C-05D12N(H3)	±12	±42	83	±220	1
13DS1C-05D15N(H3)	±15	±34	83	±220	1
13DS1C-05D24N(H3)	±24	±21	85	±100	1
13DS1C-05S03N2(H3)	3.3	303	74	2400	2
13DS1C-05S05N2(H3)	5	200	82	2400	2
13DS1C-05S09N2(H3)	9	112	83	1000	2
13DS1C-05S12N2(H3)	12	84	83	560	2
13DS1C-05S15N2(H3)	15	67	83	560	2
13DS1C-05S24N2(H3)	24	67	83	560	2
13DS1C-05D03N2(H3)	±3.3	±150	74	±1200	2
13DS1C-05D05N2(H3)	±5	±100	82	±1200	2
13DS1C-05D09N2(H3)	±9	±56	83	±470	2
13DS1C-05D12N2(H3)	±12	±42	83	±220	2
13DS1C-05D15N2(H3)	±15	±34	83	±220	2
13DS1C-05D24N2(H3)	±24	±21	85	±100	2
13DS1C-05S03N3(H3)	3.3	303	74	2400	3
13DS1C-05S05N3(H3)	5	200	82	2400	3
13DS1C-05S09N3(H3)	9	112	83	1000	3
13DS1C-05S12N3(H3)	12	84	83	560	3
13DS1C-05S15N3(H3)	15	67	83	560	3
13DS1C-05S24N3(H3)	24	42	85	220	3
13DS1C-05D03N3(H3)	±3.3	±150	74	±1200	3
13DS1C-05D05N3(H3)	±5	±100	82	±1200	3
13DS1C-05D09N3(H3)	±9	±56	83	±470	3
13DS1C-05D12N3(H3)	±12	±42	83	±220	3
13DS1C-05D15N3(H3)	±15	±34	83	±220	3
13DS1C-05D24N3(H3)	±24	±21	85	±100	3

DC-DC Converter

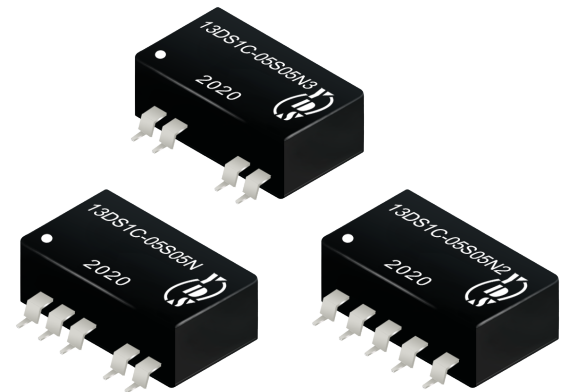
13DS1C SERIES

1Watt

1.5KVDC & 3KVDC Isolated

Single & Dual Output

SMD 18PIN & 22PIN



www.yds.com.tw

**Note :**

No suffix is standard isolation (1.5KVDC) e.g. 13DS1C-05S05N · 13DS1C-05D05N2 \*add suffix "H3" for 3KVDC isolation, e.g. 13DS1C-05S05NH3, 13DS1C-05D12N3H3



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Rev:o 2020/06/15

**Input Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Vo,Io Nom	4.5	5	5.5	Vdc
Filter	Capacitor				

**Output Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	without suffix			1 Sec	
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	3.3V (10% To 100% F.L)		15	20	%
	5V (10% To 100% F.L)		10	15	%
	9V (10% To 100% F.L)		8	10	%
	12V (10% To 100% F.L)		7	10	%
	15V (10% To 100% F.L)		6	10	%
Ripple & Noise	BW=DC To 20MHz @Other Vo		30	75	mVp-p
	BW=DC To 20MHz @24V Vo		50	100	mVp-p

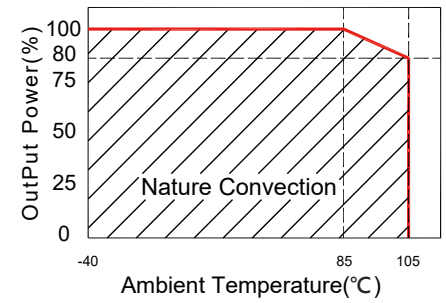
**General Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V		20		pF
Switching Frequency	Full load,nominal input		350		KHz
Operation Temperature		-40		+105	°C
Storage Temperature		-55		+125	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight	Package 1/2/3		1.36		g
Dimensions	Package 1/2/3		15.24X8.0X7.3		mm

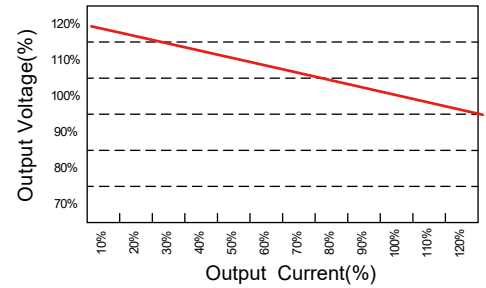
**Electromagnetic Compatibility (EMC)**

EMI	CE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
EMS	ESD	IEC/EN61000-4-2 Air ±8kV , Contact ±4kV perf. Criteria B

**Temperature Derating Graph**



**Tolerance Envelope Graph**

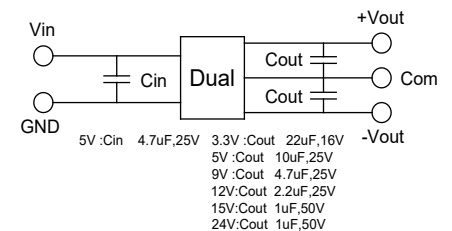
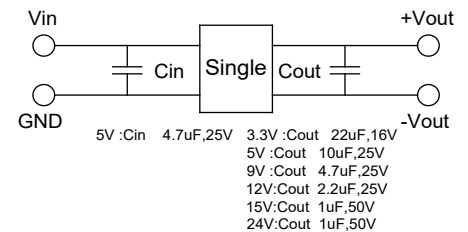


**Part Number**

13DS1C - 05 S 05 N 3 H3  
A B C D E F G

- A:Series
- B:Input Voltage
- C:Single(S)Dual(D)
- D:Output Voltage
- E:Unregulated(N)
- F:Package
- G:Isolation Voltage

**Recommended Test Circuit**



EMC (CLASS B) Compliance Circuit

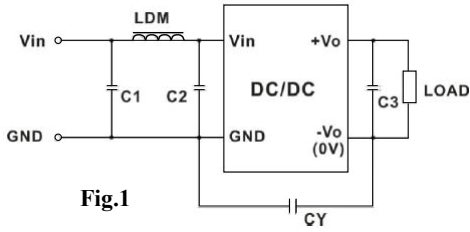


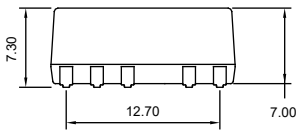
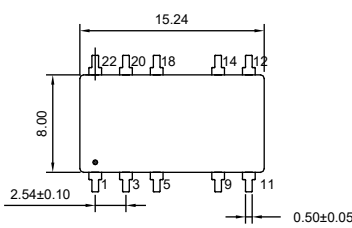
Fig.1

EMC recommended circuit value table

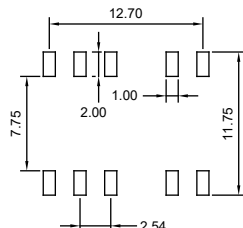
Input voltage 5VDC	Output voltage (VDC)	3.3/5/9	12/15/24
		C1/C2	4.7uF/25V
EMC	CY	—	1nF/4KVDC
	C3	Refer To The Recommended Test Circuit	
	LDM	6.8uH	6.8uH

Markings and dimensions

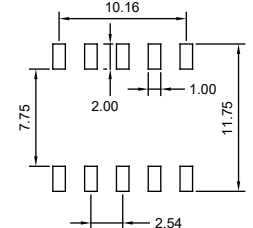
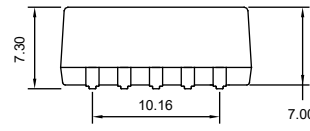
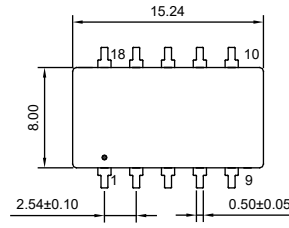
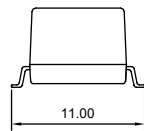
1.



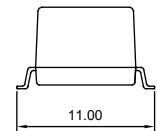
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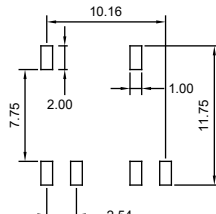
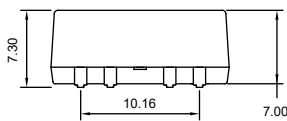
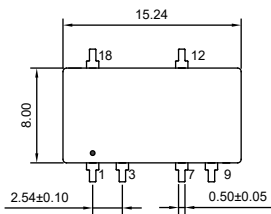
SUGGESTED PAD LAYOUT



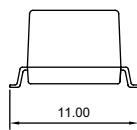
SUGGESTED PAD LAYOUT



3.



SUGGESTED PAD LAYOUT



Unit:mm Unless otherwise specified, all tolerances are ±0.25

PIN Connection

PIN	1	3	5	7	9	10	11	12	14	16	18	20	22
Package 1(Single)	-Vin	+Vin	NC	--	-Vout	--	NC	NC	+Vout	--	NC	NC	NC
Package 1(Dual)	-Vin	+Vin	NC	--	COM	--	-Vout	NC	+Vout	--	NC	NC	NC
Package 2/3(Single)	-Vin	+Vin	NC*	-Vout	-Vout	NC*	--	+Vout	NC*	NC*	NC	--	--
Package 2/3(Dual)	-Vin	+Vin	NC*	COM	-Vout	NC*	--	+Vout	NC*	NC*	NC	--	--

Note : NC\* Means When the Package 2 is NC, When the Package 3 is NO PIN

