

**SANYO**

No. 4936

**STK73908****Self-Excitation Type Feedback Control (World Spec.) Switching Regulator (210W Output)****Overview**

The STK73908 incorporates on-chip all the power switching, amplifier, overcurrent protection and driver circuits required in a self-excitation type feedback control off-line switching regulator. As a result, it can be used in the design of switching power supplies with minimal number of external components. Furthermore, the adoption of MOSFET power switching elements supports a higher oscillator frequency than that possible with bipolar transistors. This allows smaller pulse transformers and capacitors to be used, making it possible to construct miniature power supply systems.

**Applications**

- CRT/CTV power supplies
- Office automation equipment power supplies

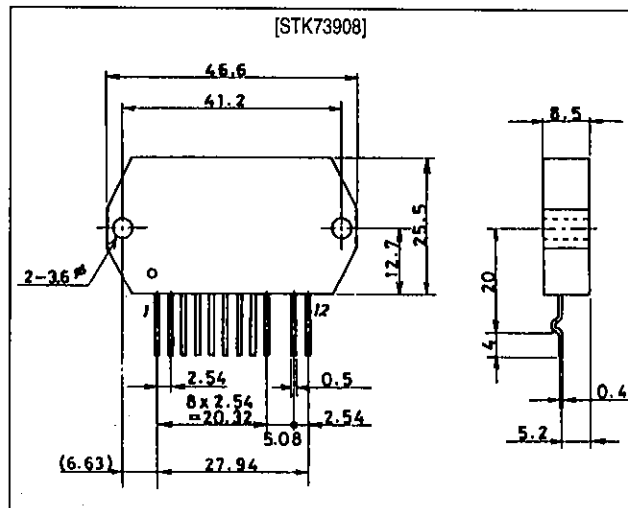
**Features**

- Power MOSFET devices
- Feedback control for high output voltage precision
- Driver circuit on-chip
- Overcurrent protection circuit on-chip
- Pin compatible with all other devices in the same series of devices with 110 to 280W power ratings
- Higher oscillator frequency allows the use of smaller pulse transformers
- IMST substrate acts as an electromagnetic shield, making low-noise designs possible

**Package Dimensions**

unit: mm

4121



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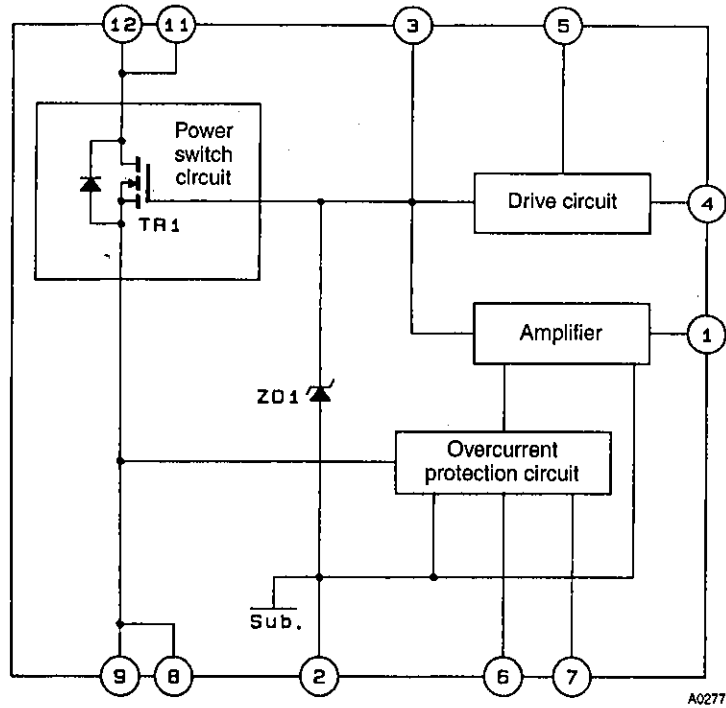
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**Block Diagram**



The back surface of the IC is not an insulator, and is effectively at pin 2 potential.

**Pin Functions**

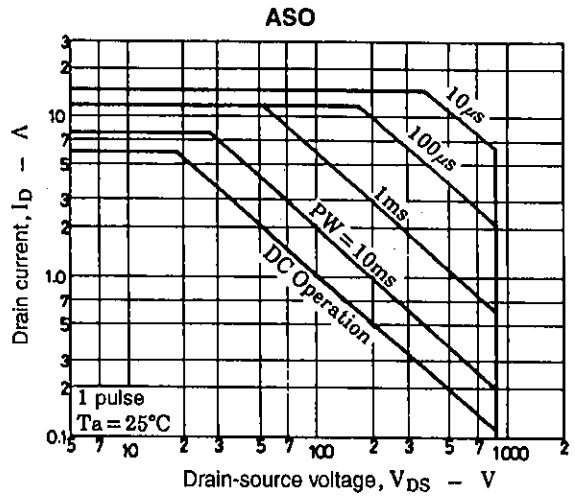
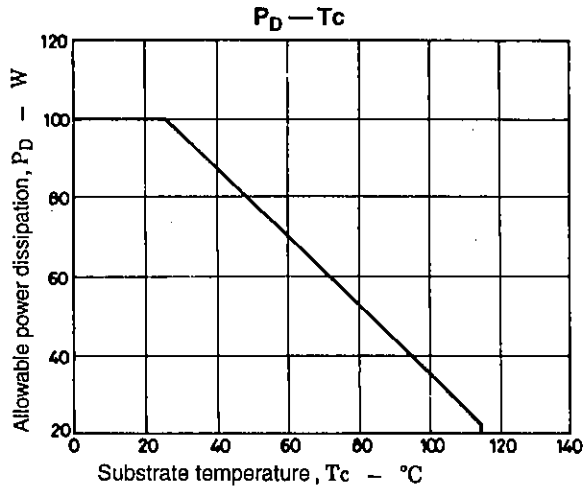
Number	Function
1	Amplifier circuit control
2	Ground
3	TR1 gate
4	Drive voltage input
5	Starting voltage input
6	OCP setting level input
7	OCP input-voltage dependency detection input
8	TR1 source
9	
11	TR1 drain
12	

**Specifications**

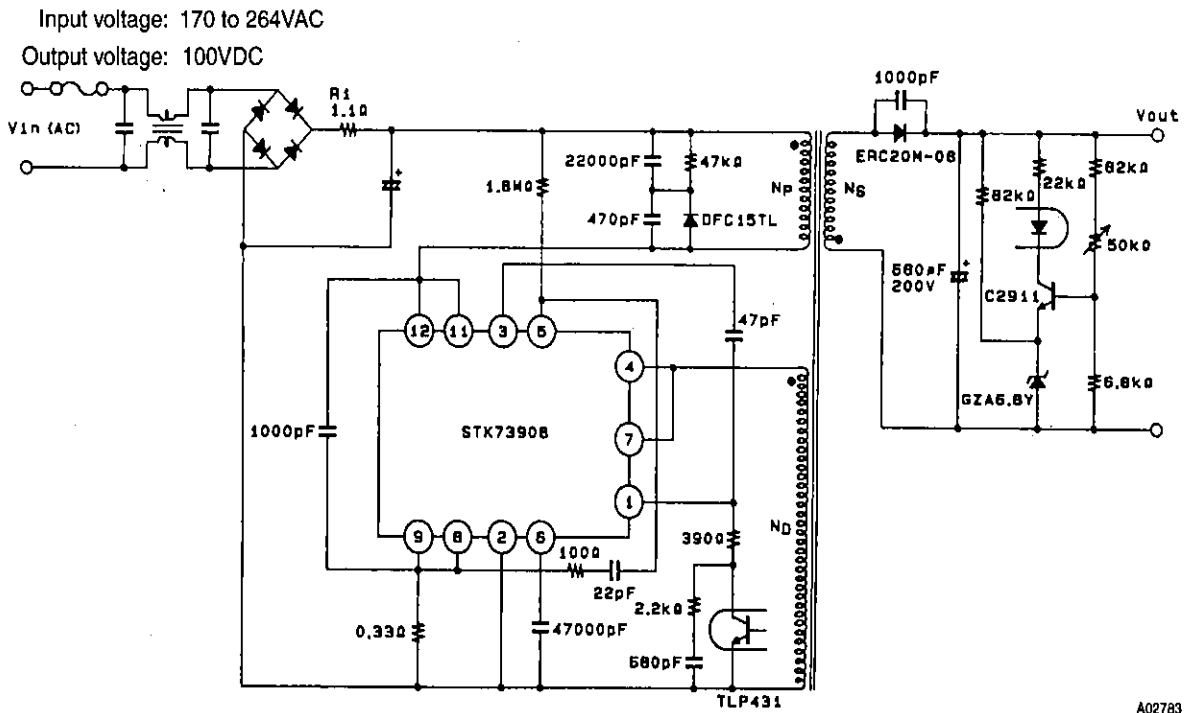
**Maximum Ratings** at  $T_a = 25^\circ\text{C}$ ,  $T_c = 25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Conditions	Ratings	Unit
Operating substrate temperature	$T_c \text{ max}$	Recommended value is $105^\circ\text{C}$ .	115	$^\circ\text{C}$
AC input voltage	$V_{AC}$	Specified test circuit	280	Vrms
Operating temperature	$T_{opg}$		-10 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-30 to +115	$^\circ\text{C}$
Maximum output power	$W_o \text{ max}$	Specified test circuit, $V_o = 115\text{V}$	210	W



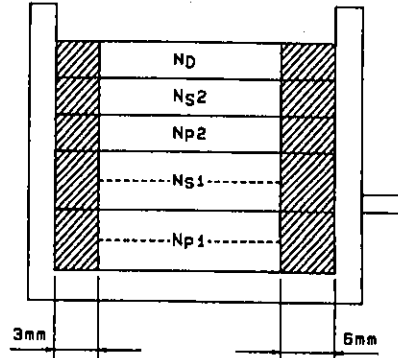
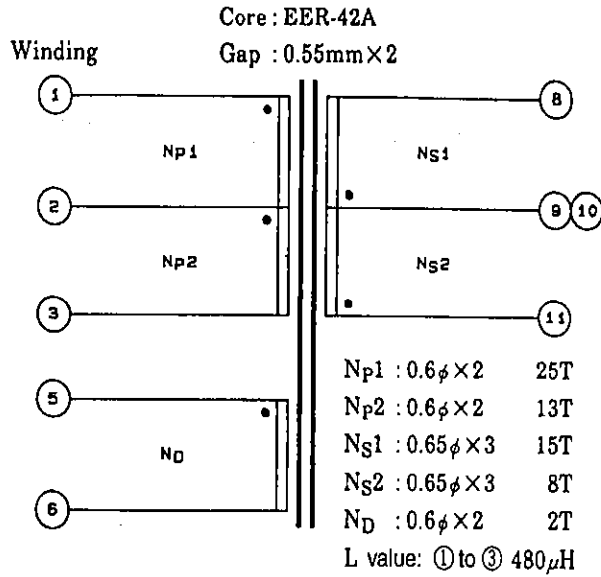


Sample Application Circuit (200V System)

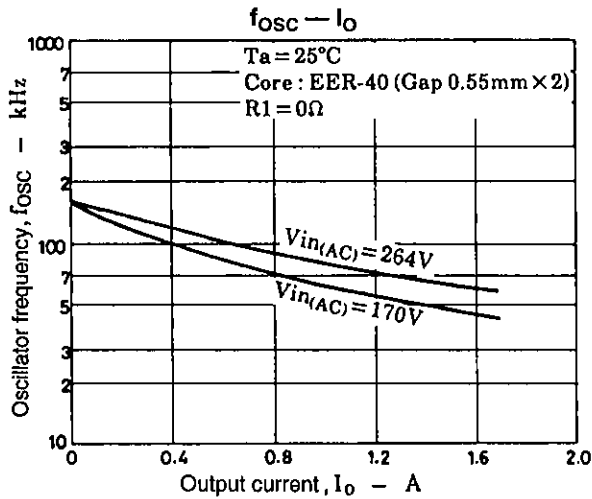
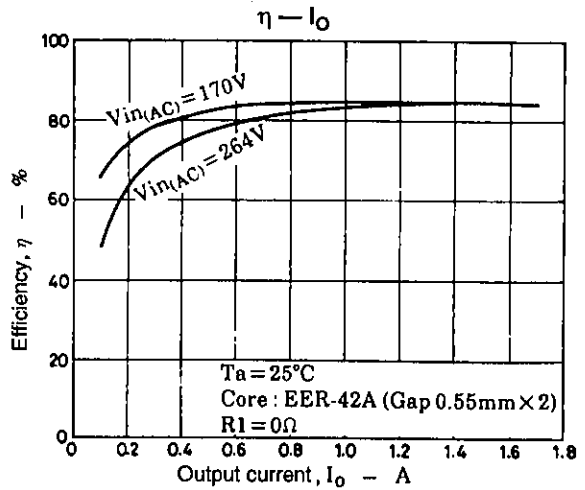
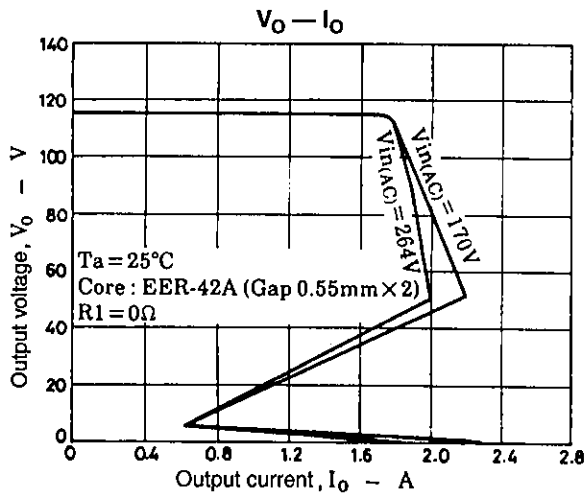


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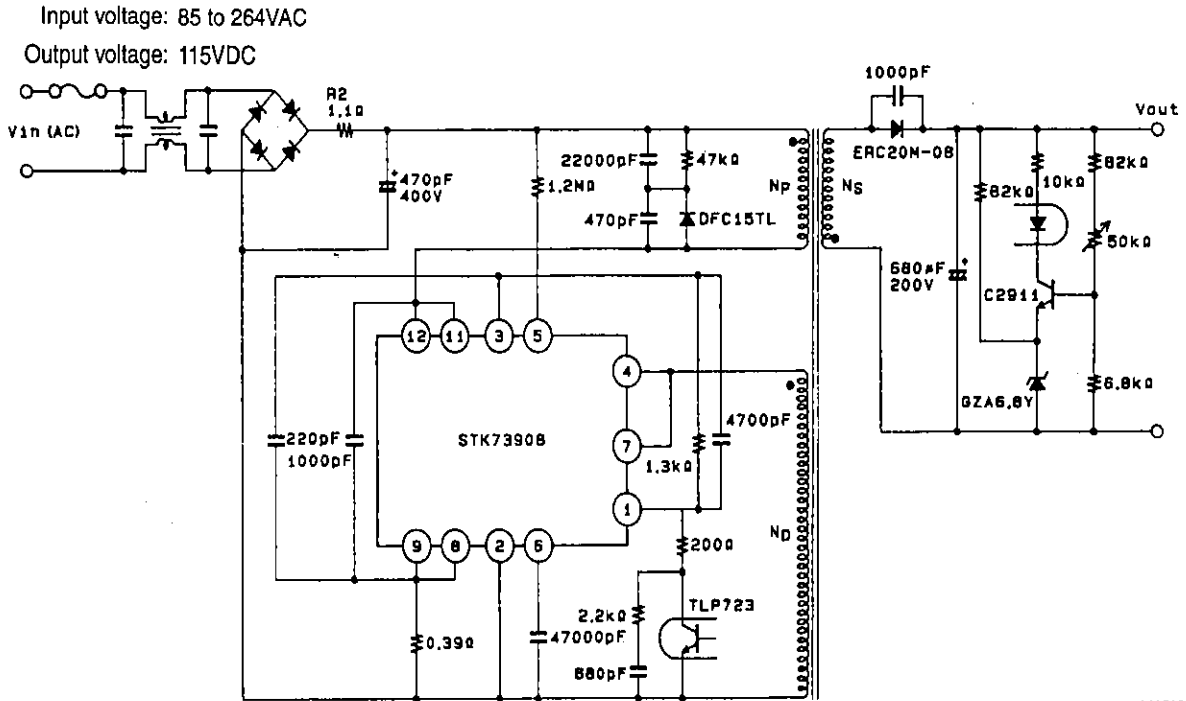
Pulse Transformer Specifications



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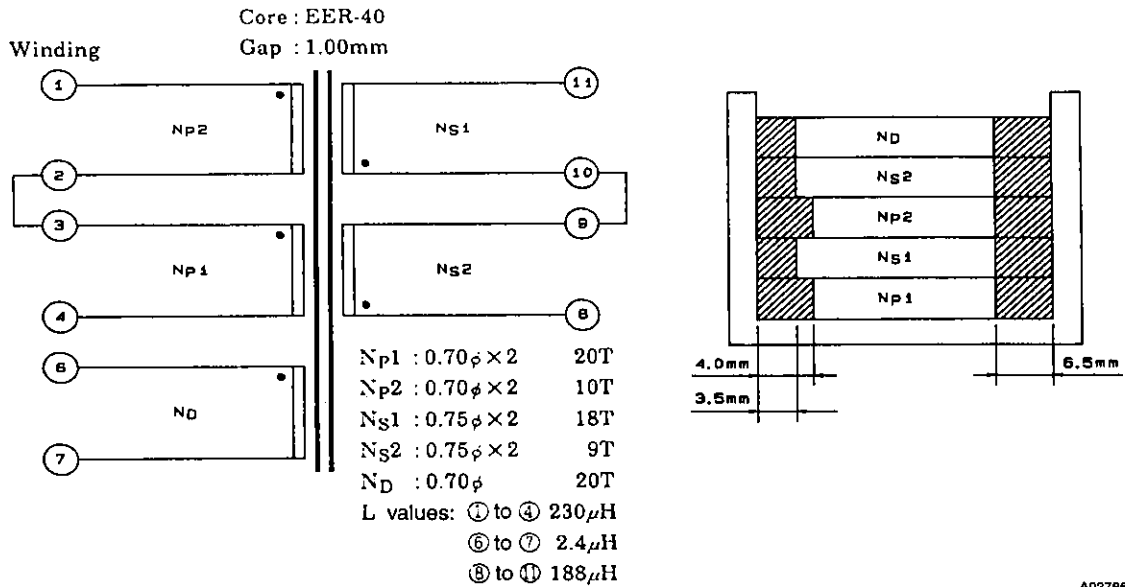


Sample Application Circuit (World Input System)

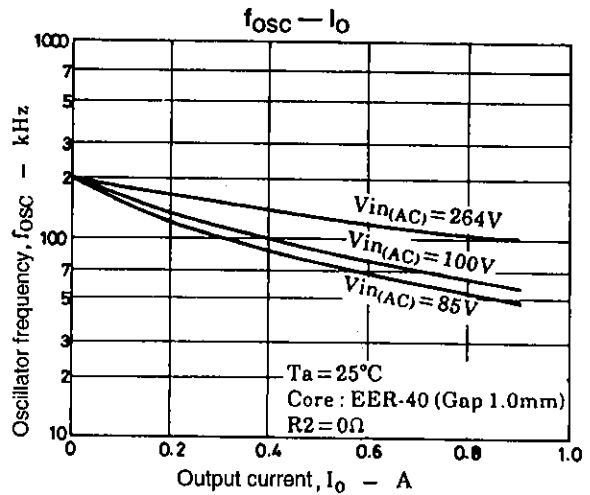
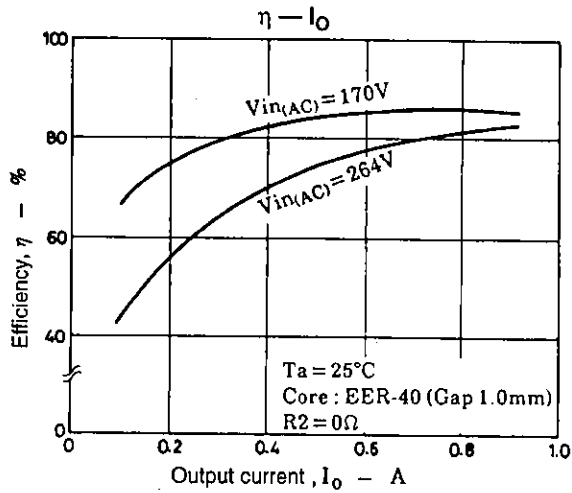
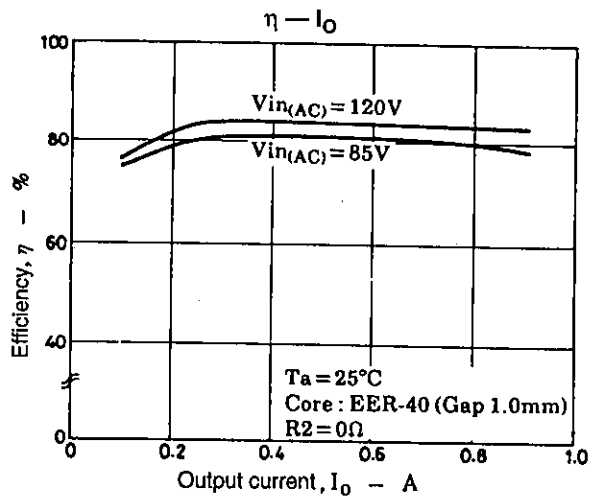
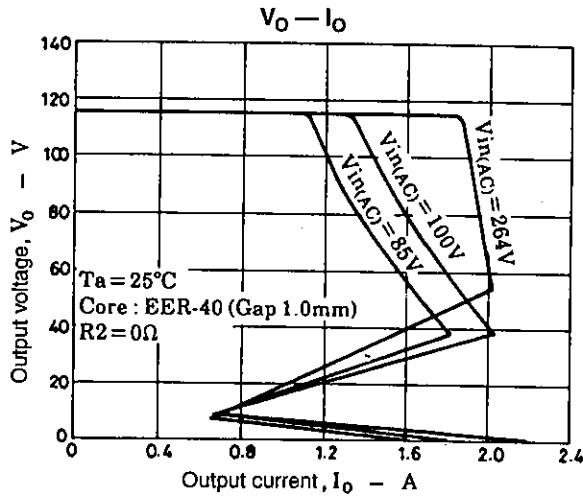


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Pulse Transformer Specifications



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### Series Organization

These devices form a series with varying output power ratings.

Device	Maximum ratings					Operating characteristics		
	V <sub>DSS</sub> [V]	T <sub>stg</sub> [°C]	T <sub>c max</sub> [°C]	T <sub>j max</sub> [°C]	I <sub>b</sub> [A]	Input voltage [V]	Output power [W]	ON resistance [Ω]
STK73902	500	-30 to +115	+115	+150	6.0	85 to 132	110	1.4
STK73903					10.0		180	0.6
STK73904					12.0		210	0.55
STK73905					15.0		280	0.3
STK73906	900	-30 to +115	+115	+150	3.0	170 to 264	110	5.0
STK73907					5.0		180	3.0
STK73908					6.0		210	2.0
STK73909					8.0		280	1.2