

# STK73902

**Self-excitation Type Feedback Control  
Switching Regulator**

## ◆ Features

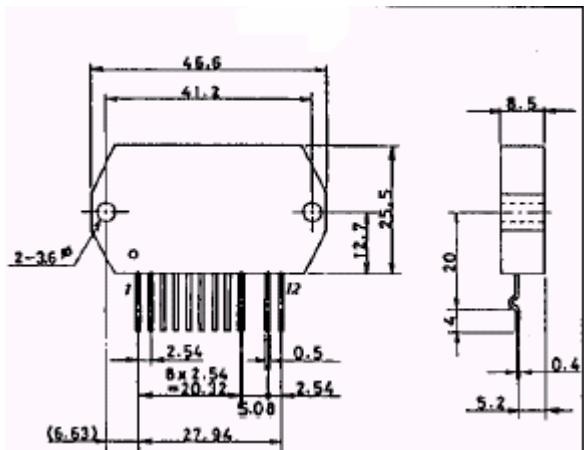
- . Power MOSFET devices
- . Feedback control for high output voltage precision
- . Driver circuit on-chip
- . Overcurrent protection circuit on-chip
- . Pin compatible with all other devices in the same series of devices with 110 to 280W power ratings
- . Higher oscillator frequency allows the use of smaller pulse transformers

## ◆ Applications

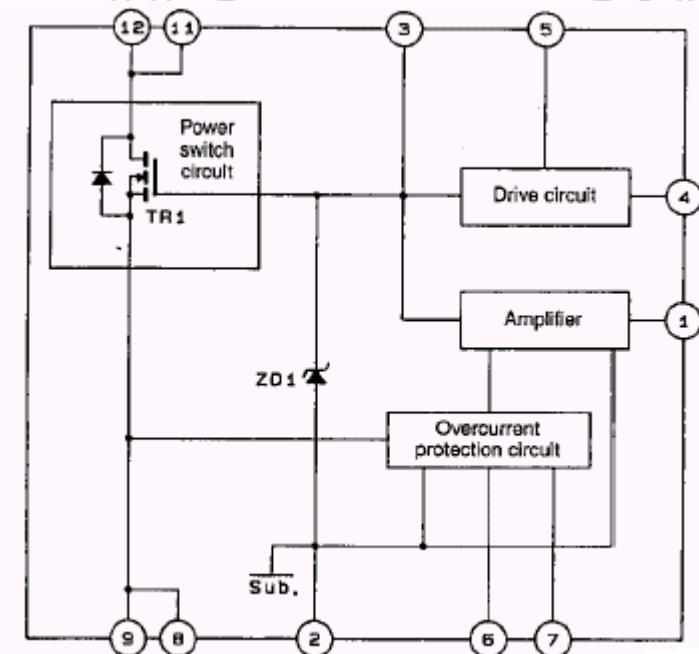
- . CRT/CTV power supplies
- . Office automation equipment power supplies

## Package Dimensions

unit:mm



## ◆ Block Diagram



## Pin Functions

- (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) TR1 source
- (11) TR1 drain
- (12) TR1 drain

## Specifications

### ◆ Maximum Ratings at Ta=25 , Tc=25 unless otherwise specified

Parameter	Symbol	Conditions	Ratings	UNIT
Operating substrate temperature	T <sub>c</sub> max	Recommended value is 105	115	
AC input voltage	V <sub>AC</sub>	Specified test circuit	140	Vrms
Operating temperature	T <sub>opr</sub>		-10 to +85	
Storage temperature	T <sub>stg</sub>		-30 to +115	
Maximum output power	W <sub>o</sub> max	Specified test circuit V <sub>O</sub> =135V	180	W
<b>(TR1)</b>				
Drain current	I <sub>D</sub>		10	A
Pulse drain current	I <sub>D(Pulse)</sub>		35	A
Drain reverse current	I <sub>DR</sub>		10	A
Gate-source voltage	V <sub>GSS</sub>		± 30	V
Allowable power dissipation	P <sub>D</sub>		100	W
Chip junction temperature	T <sub>j</sub> max		150	
<b>(ZD1)</b>				
Allowable power dissipation	P <sub>ZD1</sub>		500	mW
Chip junction temperature	T <sub>j(ZD1)max</sub>		125	

### ◆ Recommended operating ranges at Ta=25

Parameter	Symbol	Conditions	Ratings	UNIT
Pin 4 input voltage	V <sub>4</sub>		± 8 to ± 24	V
Oscillator frequency	f <sub>osc</sub>		20 to 100	kHz

### ◆ Operating characteristics at Ta=25 , Tc=25

( unless otherwise specified,specified test circuits)

Parameter	Symbol	Conditions	min	Typ	max	UNIT
<b>(TR1)</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA,V <sub>GS</sub> =0V	500			V
Gate-source cutoff voltage	V <sub>GS(off)</sub>	I <sub>D</sub> =1mA,V <sub>DS</sub> =10V	2.5	3.5	5.0	V
ON resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =5A,V <sub>GS</sub> =10V		0.6	0.9	
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V,V <sub>GS</sub> =0V,f=1MHz		1400		pF
<b>(ZD1)</b>						
Zener voltage	V <sub>Z</sub>	I <sub>Z</sub> =5mA	23.7		26.3	V

## ◆ Series organization

These devices form a series with varying output power ratings

Type No.	Maximum ratings					Operating characteristics					
	V <sub>DSS</sub> [V]	T <sub>stg</sub> [-]	T <sub>c</sub> max [-]	T <sub>j</sub> max [-]	I <sub>D</sub> [A]	Input voltage [V]	Output power [W]	ON resistance [-]			
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					3.0	170 to 264	110	5.0			
STK73907	900				5.0		180	3.0			
STK73908					6.0		210	2.0			
STK73909					8.0		280	1.2			

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