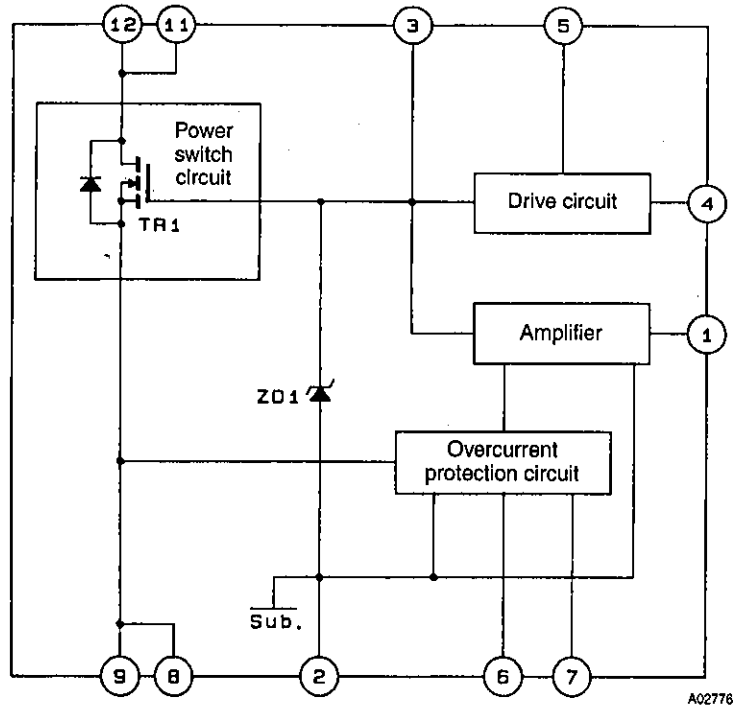




**Block Diagram**



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

# STK73908

Parameter	Symbol	Conditions	Ratings	Unit
<b>[TR1]</b>				
Drain current	$I_D$	Refer to ASO characteristics for overcurrent condition.	6	A
Pulse drain current	$I_{D(pulse)}$		15	A
Drain reverse current	$I_{DR}$		6	A
Gate-source voltage	$V_{GS}$		$\pm 30$	V
Allowable power dissipation	$P_D$		100	W
Chip junction temperature	$T_J \text{ max}$		150	$^{\circ}\text{C}$
<b>[ZD1]</b>				
Allowable power dissipation	$P_{ZD1}$		500	mW
Chip junction temperature	$T_J(ZD1) \text{ max}$		125	$^{\circ}\text{C}$

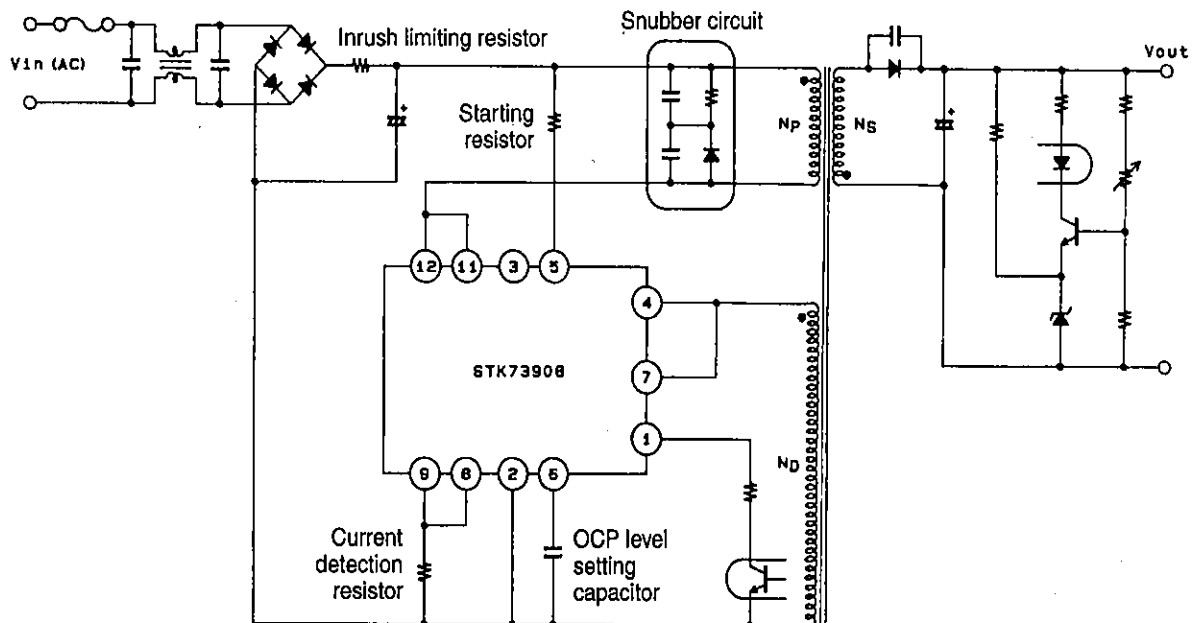
## Allowable Operating Ranges at $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Pin 4 input voltage	$V_4$		$\pm 8$ to $\pm 24$	V
Oscillator frequency	$f_{osc}$		20 to 100	kHz

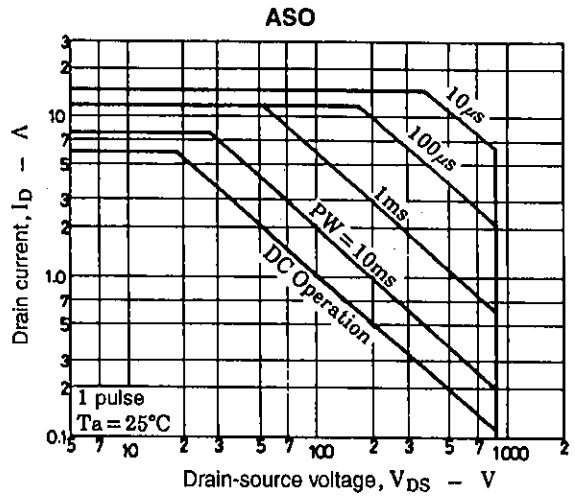
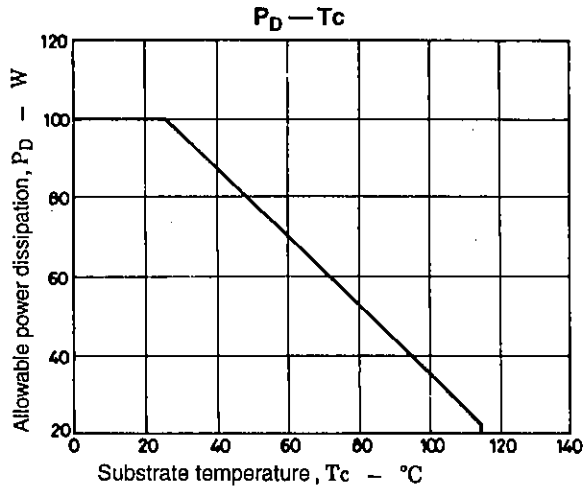
## Operating Characteristics at $T_a = 25^{\circ}\text{C}$ , $T_c = 25^{\circ}\text{C}$ unless otherwise specified, specified test circuit

Parameter	Symbol	Conditions	min	typ	max	Unit
<b>[TR1]</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 10\text{mA}$ , $V_{GS} = 0\text{V}$	900	-	-	V
Gate-source cutoff voltage	$V_{GS(off)}$	$I_D = 1\text{mA}$ , $V_{DS} = 10\text{V}$	2.0	-	3.0	V
ON resistance	$R_{DS(on)}$	$I_D = 3\text{A}$ , $V_{GS} = 10\text{V}$	-	2.0	3.0	$\Omega$
Input capacitance	$C_{iss}$	$V_{DS} = 10\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$	-	1200	-	pF
<b>[ZD1]</b>						
Zener voltage	$V_Z$	$I_Z = 5\text{mA}$	23.7	-	26.3	V

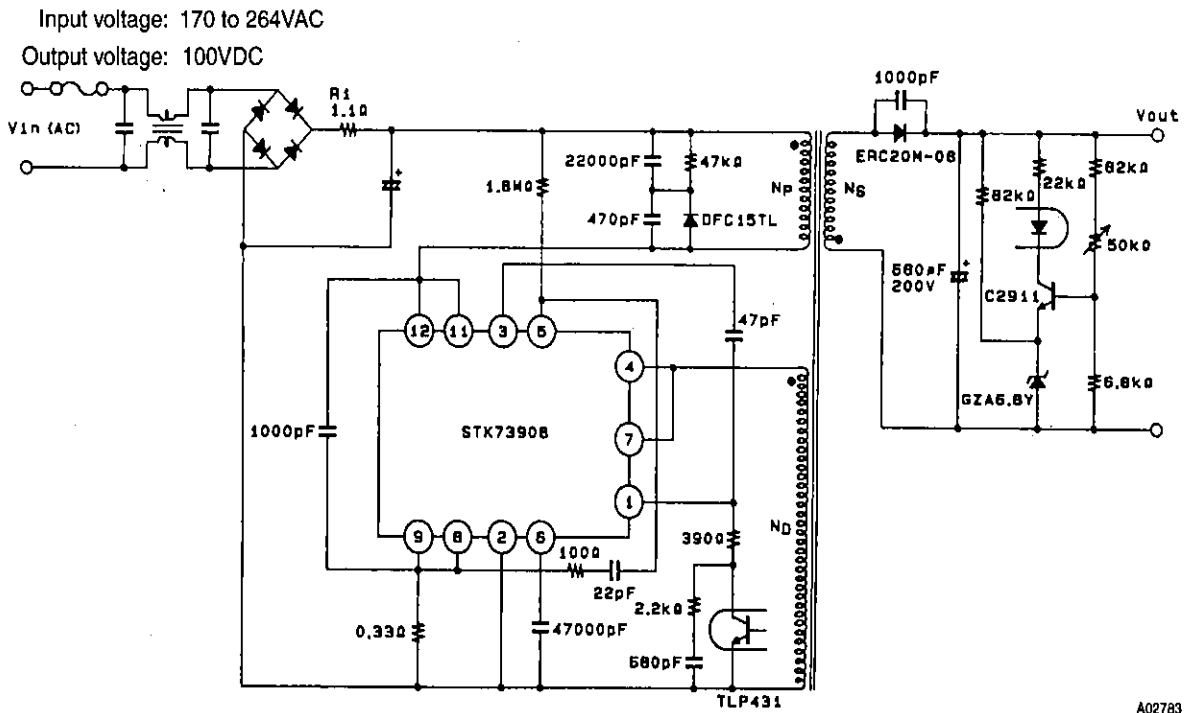
## Circuit Function Diagram



A02782

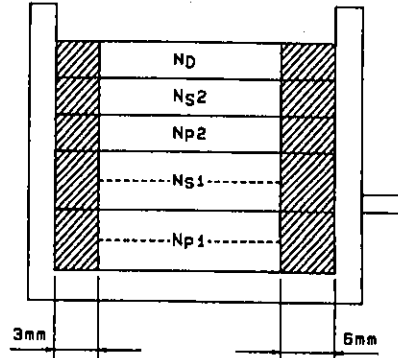
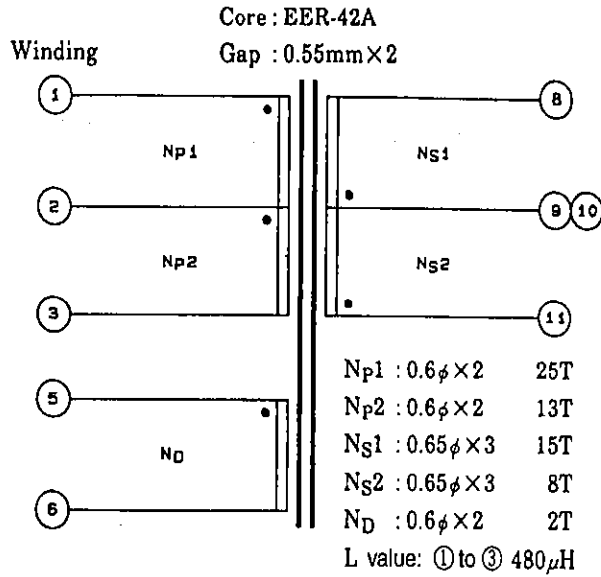


Sample Application Circuit (200V System)

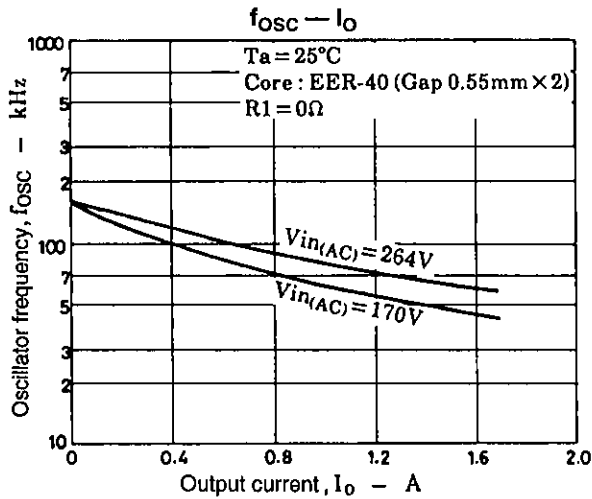
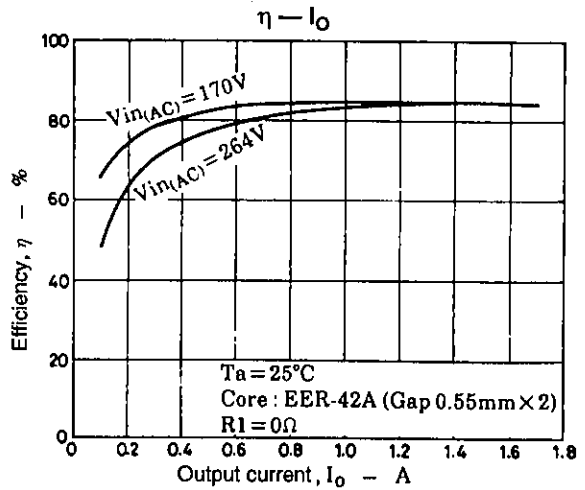
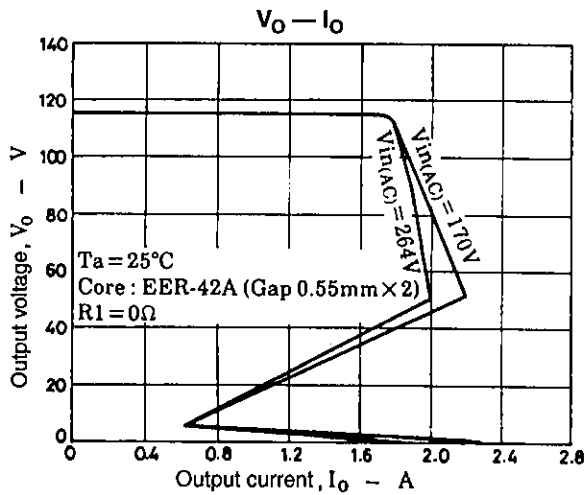


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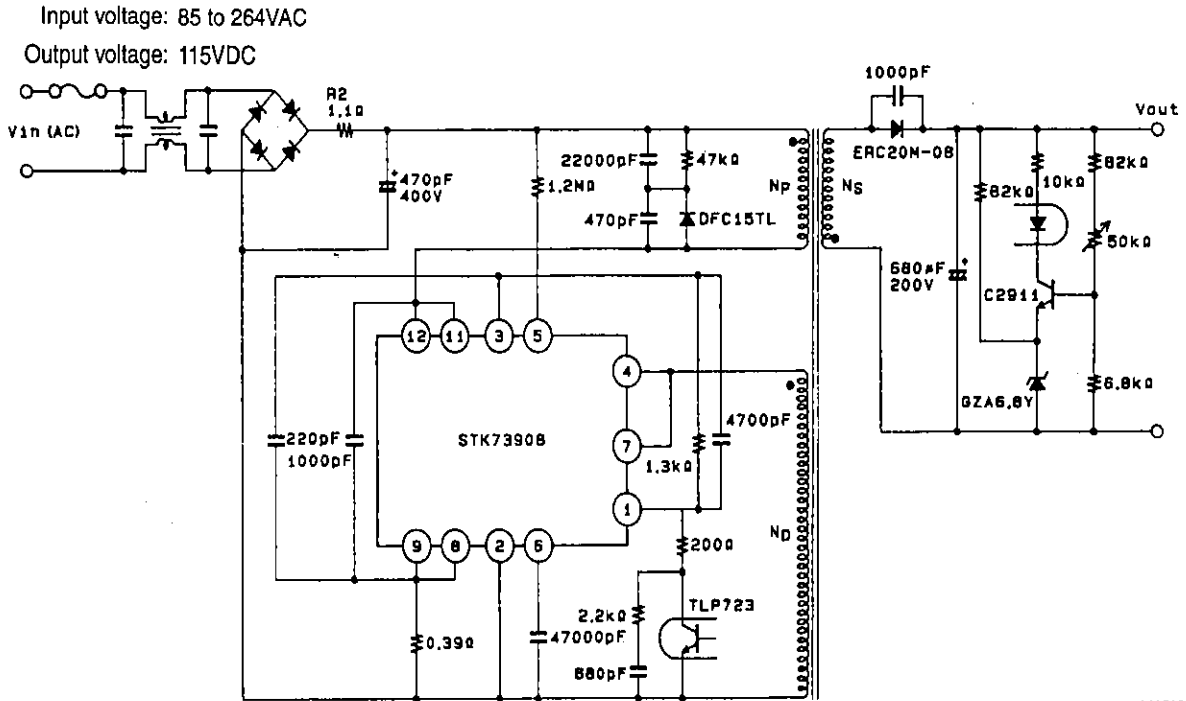
Pulse Transformer Specifications



A02784

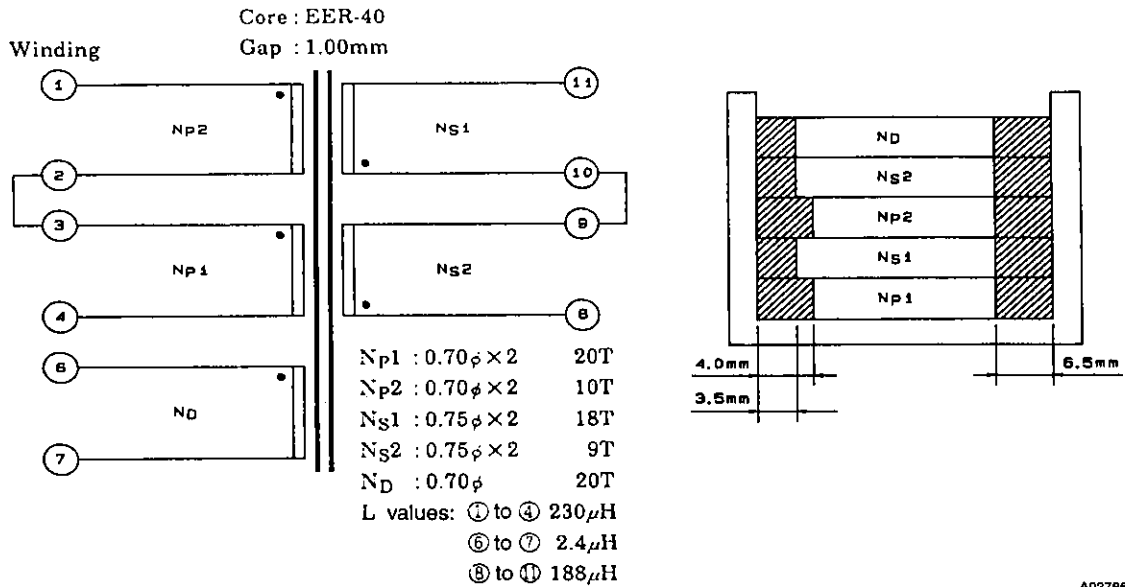


Sample Application Circuit (World Input System)

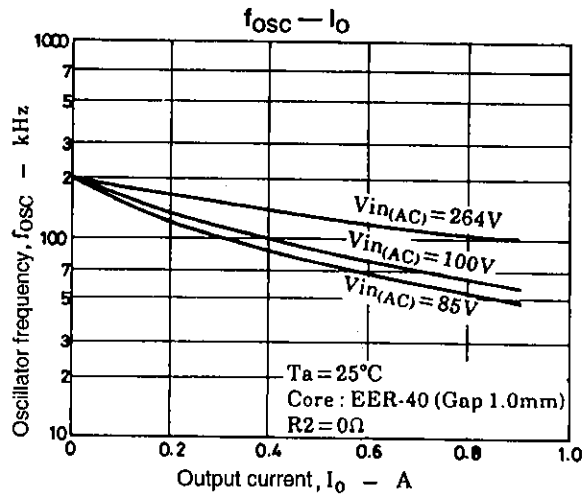
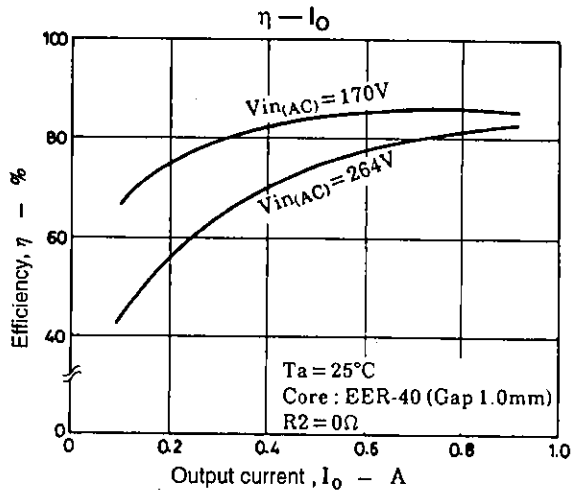
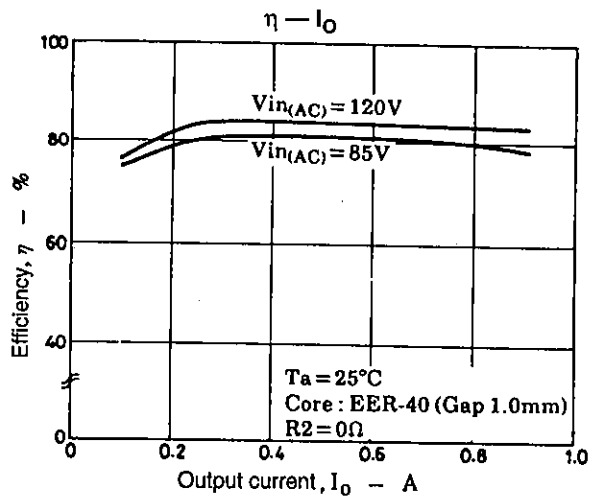
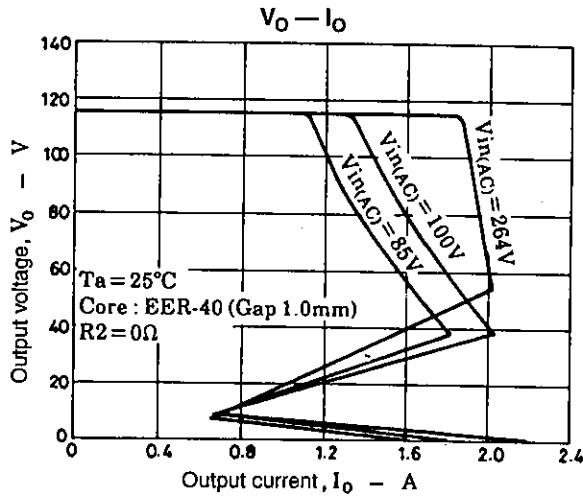


A02785

Pulse Transformer Specifications



A02786



### 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</sub> max [°C]	T <sub>j</sub> max [°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