

**SANYO****STK7458**

Thick Film Hybrid IC

Offline Switching Regulator

Case Outline : 16 pins (See attached case outline drawing.)

Function : Oscillation, PWM control, overcurrent detection

Application : Offline switching regulator

Features : Adoption of power MOS FET, either flyback method or forward method usable, either semiregulated control or regulated control available, master-slave operation, external sync available, high-gain error amp, 5V reference built in

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

			unit
Operating Case Temperature	$T_c$ max		105 $^\circ\text{C}$
Storage Temperature	$T_{slg}$		-20 to +105 $^\circ\text{C}$
$V_z$ Current	$I_z$ max	Pin 3	10 mA
$V_{CC}$ Voltage	$V_{CC}$ max	Pin 4	20 V
Error Amp Input Voltage	$V_1$ max	Pins 9,10	$V_{CC} + 0.3$ V
TR1 Collector Current	$I_C$ (TR1) max		100 mA
TR1 Collector Voltage	$V_{CE}$ (TR1) max		400 V
TR1 Collector Dissipation	$P_C$ (TR1) max		13 W
TR7 Drain Current	$I_D$ max	Normal operation #1	5 A
TR7 Drain Voltage	$V_{DS}$ max		900 V
TR7 Drain Dissipation	$P_D$ max		125 W
TR1 Junction, TR7 Chip Temperature	$T_j$ max		150 $^\circ\text{C}$

#1 For the transient mode, see the ASO curve attached hereto.

Recommended Operating Conditions at  $T_a = 25^\circ\text{C}$ 

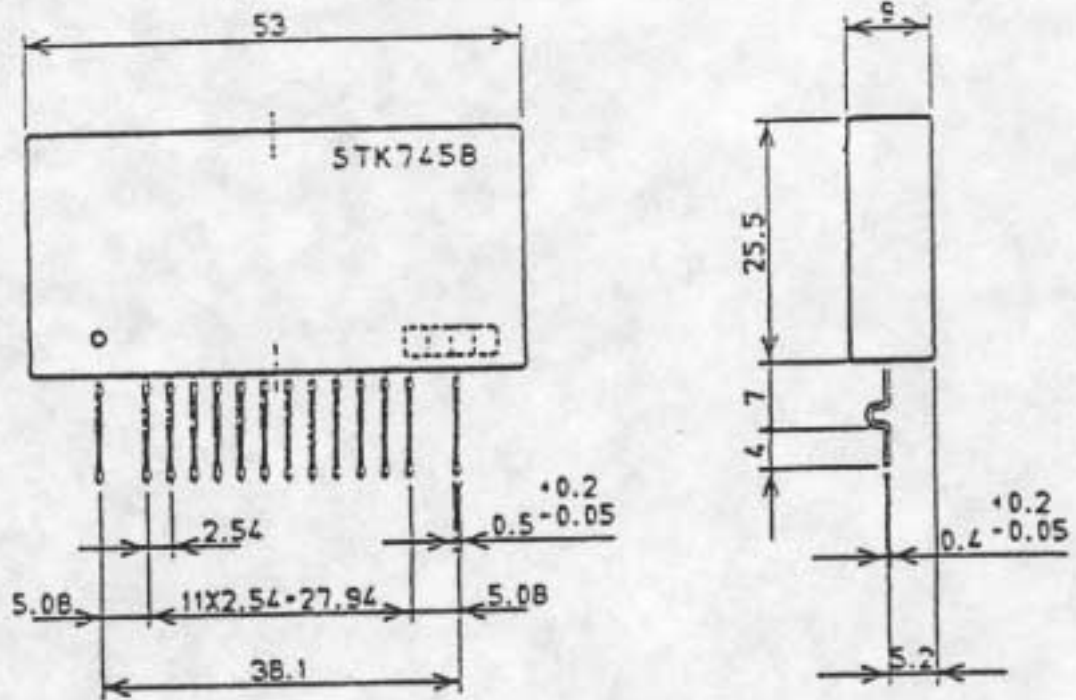
			unit
$V_z$ Current	$I_z$		1.5 to 5 mA
Supplementary Voltage	$V_{SUP}$	External supply voltage at pin 4	16 to 18 V
Error Amp Input Voltage	$V_1$		-0.3 to $V_{CC} - 2$ V
Timing Capacitor	$C_T$	Pin 6	0.47 to 10000 nF
Timing Resistor	$R_T$	Pin 7	1.8 to 500 k $\Omega$
OSC Frequency	$f_{OSC}$		1 to 100 kHz

Electrical Characteristics at  $T_a = 25^\circ\text{C}, V_{IN} = 30\text{V}, f_{OSC} = 10\text{kHz}, T_c = 25^\circ\text{C}$  unless otherwise specified,  
See specified Test Circuit.

			min	typ	max	unit
$V_{CC}$ Voltage (Pin 4)	$V_{CC}$		11		13	V
Reference Voltage (Pin 8)	$V_{REF}$		4.7		5.3	V
Low- $V_{CC}$ Malfunction Prevention Voltage (Pin 9)	$V_{LUP}$		6.5		8.5	V
SEN Pin Dynamic Resistance Range (Pin 10)	$R_{SEN}$	$V_{SEN} = 10\text{V}$	4.7		7.8	k $\Omega$
OSC Frequency	$f_{OSC}$	$C_T = 0.01\mu\text{F}, R_T = 12\text{k}\Omega$		10		kHz
Maximum Set Duty	$D$ max	$f_{OSC} = 100\text{kHz}$		44		%
TR1 $h_{FE}$	$h_{FE}$ (TR1)	$V_{CE} = 5\text{V}, I_C = 30\text{mA}$	30			
TR7 ON-Resistance	$R_{DS}$ (ON)	$V_{GS} = 10\text{V}, I_D = 2.5\text{A}$			2.5	$\Omega$
Current Dissipation	$I_{CC}$				30	mA
Current Dissipation at No-load Mode	$I_{CC0}$			12		mA
Current Dissipation at Turn-OFF Mode						

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Case Outline  
(unit: mm)



The application circuit diagrams and circuit constants herein are included as an example and provide no guarantee for designing equipment to be mass-produced. The information herein is believed to be accurate and reliable. However, no responsibility is assumed by SANYO for its use; nor for any infringements of patents or other rights of third parties which may result from its use.