SGS-THOMSON MICROELECTRONICS

TDA7241

20W BRIDGE AMPLIFIER FOR CAR RADIO

ADVANCE DATA

- VERY LOW STAND-BY CURRENT
- GAIN = 26dB
- OUTPUT PROTECTED AGAINST SHORT CIRCUITS TO GROUND AND ACROSS LOAD
- COMPACT HEPTAWATT PACKAGE
- DUMP TRANSIENT
- THERMAL SHUTDOWN
- LOUDSPEAKER PROTECTION
- HIGH CURRENT CAPABILITY
- LOW DISTORTION / LOW NOISE

The TDA7241 is a 20W bridge audio amplifier IC designed specially for car radio applications. Thanks to the low external part count and compact Heptawatt 7-pin power package the TDA7241 occupies little space on the printed circuit board.

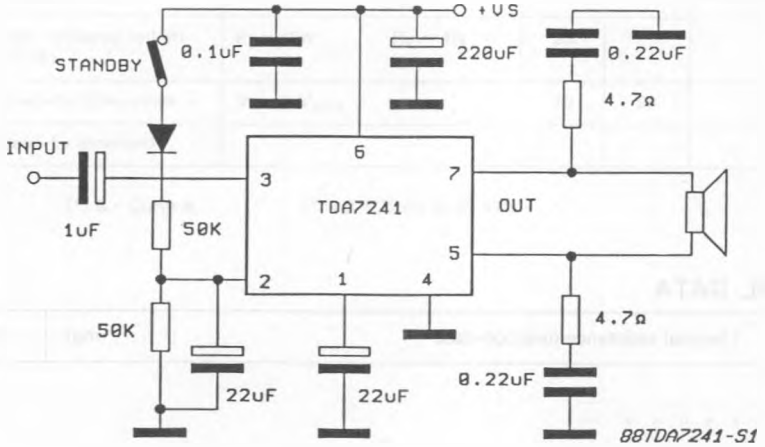
Reliable operation is guaranteed by a comprehensive array of on-chip protection features.

These include protection against AC and DC output short circuits (to ground and across the load), load dump transients, and junction overtemperature. Additionally, the TDA7241 protects the loudspeaker when one output is short-circuited to ground.

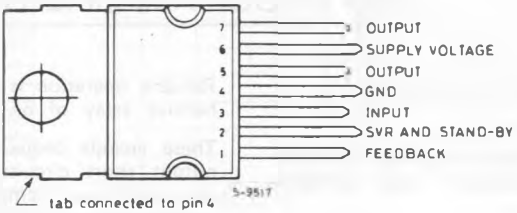
Heptawatt

ORDERING NUMBERS: TDA 7241V
TDA 7241H

TEST CIRCUIT



CONNECTION DIAGRAM
(Top view)



ABSOLUTE MAXIMUM RATINGS

V_s	Operating supply voltage	18	V
V_s	DC supply voltage	28	V
V_s	Peak supply voltage (for 50ms)	40	V
I_o (*)	Peak output current (non repetitive t = 0.1ms)	4.5	A
I_o (*)	Peak output current (repetitive f $\geqslant$ 10Hz)	3.5	A
P_{tot}	Power dissipation at T_{case} = 70°C	20	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

(*) Internally limited

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	4	°C/W

ELECTRICAL CHARACTERISTICS (Refer to the circuit of Fig. 1, T_{amb} = 25°C, R_{th} (heatsink)= 4°C/W, V_s = 14.4V)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
V_s	Supply voltage					18	V
V_{os}	Output offset voltage					150	mV
I_d	Total quiescent current	R_L = 4Ω			65	120	mA
P_o	Output power	f = 1 KHz, d = 10%	R_L = 4Ω	18	20		W
			R_L = 8Ω	10	12		
d	Distortion	R_L = 4Ω, f = 1 KHz, P_o = 50 mW to 12W			0.1	0.5	%
		R_L = 8Ω, f = 1 KHz, P_o = 50 mW to 6W			0.05	0.5	
G_v	Voltage gain	f = 1 KHz			26		dB
SVR	Supply voltage rejection	f = 100 Hz		45	52		dB
E_n	Total input noise	(*), R_s = 10 KΩ			2	4	μV
		(**), R_s = 10 KΩ			3		
η	Efficiency	R_L = 4Ω, f = 1 KHz, P_o = 20W			65		%
I_{sb}	Stand-by current				1		μA
R_i	Input resistance	f = 1 KHz		70			KΩ
V_i	Input sensitivity	f = 1 KHz, P_o = 2W	R_L = 4Ω		140		mV
f_L	Low frequency roll off (-3 dB)	P_o = 15W	R_L = 4Ω			30	Hz
f_H	High frequency roll off (-3 dB)	P_o = 15W	R_L = 4Ω	25			KHz
A_s	Stand-by attenuation	V_o = 2 V_{rms}		70	90		dB
V_{TH}(pin. 2)	Stand-by threshold					1	V

Bandwidth (*) B = Curve A (**) B = 22 Hz to 22 KHz