

**VERTICAL DEFLECTION BOOSTER**

ADVANCE DATA

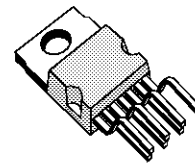
- POWER AMPLIFIER
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.0A<sub>PP</sub>
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE
- EXTERNAL FLYBACK SUPPLY

**DESCRIPTION**

Designed for monitors and high performance TVs, the STV9378F vertical deflection booster can handle flyback voltage up to 90V. More than this it is possible to have a flyback voltage which is more than the double of the supply (Pin 2). This allows to decrease the power consumption or to decrease the flyback time for a given supply voltage.

The STV9378F operates with supplies up to 42V and provides up to 2A<sub>PP</sub> output current to drive the yoke.

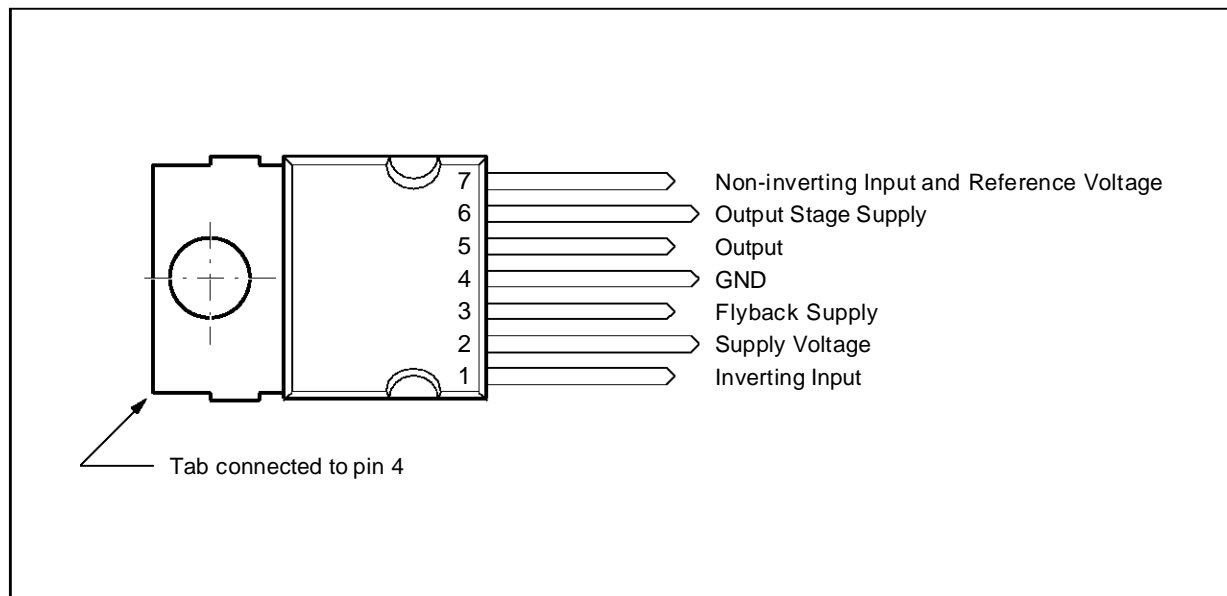
The STV9378F is offered in HEPTAWATT package.



**HEPTAWATT**  
(Plastic Package)

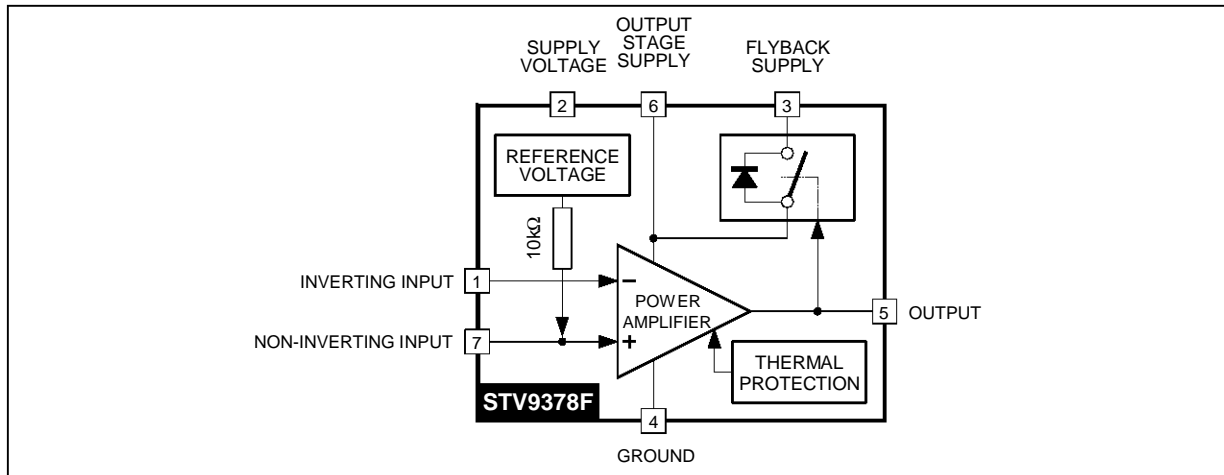
**ORDER CODE : STV9378F**

**PIN CONNECTIONS**



9378F-01.EPS

**BLOCK DIAGRAM**



9378F-02.EPS

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage (Pin 2) (see note 1)	50	V
$V_6$	Flyback Peak Voltage (Pin 6) (see note 1)	100	V
$V_1, V_7$	Amplifier Input Voltage (Pins 1-7) (see note 1)	- 0.3, + $V_S$	V
$I_O$	Maximum Output Peak Current (see notes 2 and 3)	1.5	A
$I_3$	Maximum Sink Current ( $t < 1ms$ )	1.5	A
$I_3$	Maximum Source Current ( $t < 1ms$ ) (in the diode, see Block Diagram)	1.5	A
$V_3 - V_2$	Voltage Difference between Flyback Supply and Supply Voltage	70	V
$T_{oper}$	Operating Ambient Temperature	- 20, + 75	°C
$T_{stg}$	Storage Temperature	- 40, + 150	°C
$T_j$	Junction Temperature	+150	°C

9378F-01.TBL

- Notes :
1. Versus GND.
  2. The output current can reach 4A peak for  $t \leq 10\mu s$  (up to 120Hz).
  3. Provided SOAR is respected (see Figures 1 and 2).

**THERMAL DATA**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case Thermal Resistance	Max. 3	°C/W
$T_t$	Temperature for Thermal Shutdown	150	°C
$\Delta T_t$	Hysteresis on $T_t$	10	°C
$T_{jr}$	Recommended Max. Junction Temperature	120	°C

9378F-02.TBL

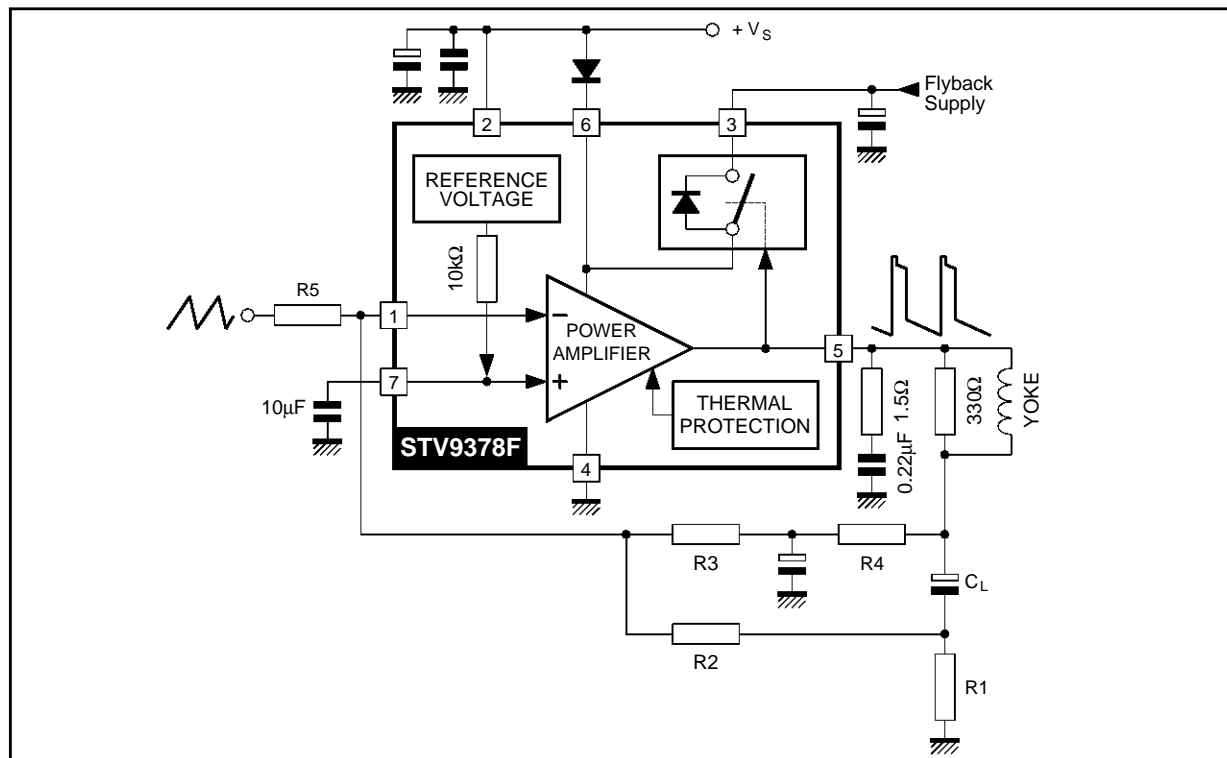
**ELECTRICAL CHARACTERISTICS**

( $V_S = 42V$ ,  $T_A = 25^\circ C$ , unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Operating Supply Voltage Range		10		42	V
$V_{3M}$	Operating Flyback Supply Voltage		$V_S$		90	V
$I_2$	Pin 2 Quiescent Current	$I_3 = 0, I_5 = 0$		10	20	mA
$I_6$	Pin 6 Quiescent Current	$I_3 = 0, I_5 = 0$	5	10	30	mA
$I_O$	Max. Peak Output Current				1	A
$I_1$	Amplifier Bias Current	$V_1 = 1V$		- 0.15	- 1	$\mu A$
$V_7$	Internal Reference Voltage		2.2	2.3	2.4	V
$\frac{\Delta V_7}{\Delta V_S}$	Reference Voltage Drift versus $V_S$	$V_S = 24$ to $42V$		2	4	mV/V
Kt	Reference Voltage Drift versus $T_j$			100	150	ppm/ $^\circ C$
GV	Voltage Gain		80			dB
$V_{5L}$	Output Saturation Voltage to GND (Pin 4)	$I_5 = 1A$		1	1.5	V
$V_{5H}$	Output Saturation Voltage to Supply (Pin 6)	$I_5 = - 1A$		1.6	2.1	V
$V_{D5-6}$	Diode Forward Voltage between Pins 5-6	$I_5 = 1A$		1.5	2	V
$V_{D3-6}$	Diode Forward Voltage between Pins 3-6	$I_3 = 1A$		1.5	2	V
$V_{3-6}$	Voltage Drop between Pins 3-6 (2nd part of flyback)	$I_3 = - 1A$		2.1	2.9	V

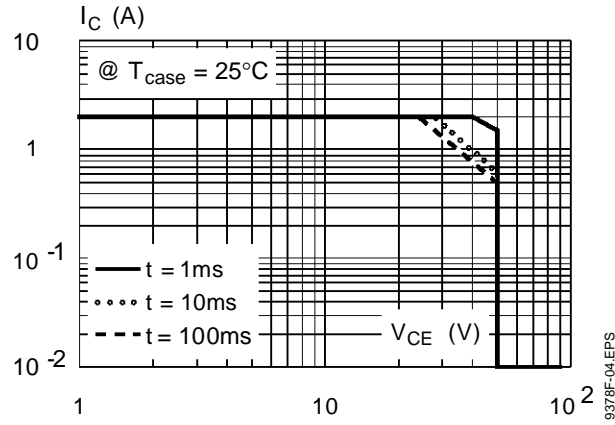
9378F-03.TBL

**APPLICATION CIRCUIT**

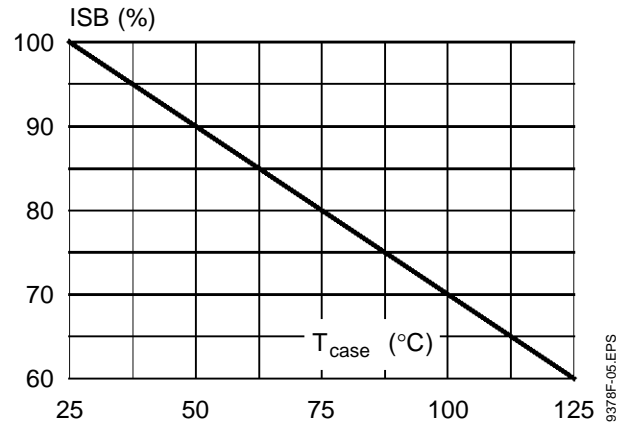


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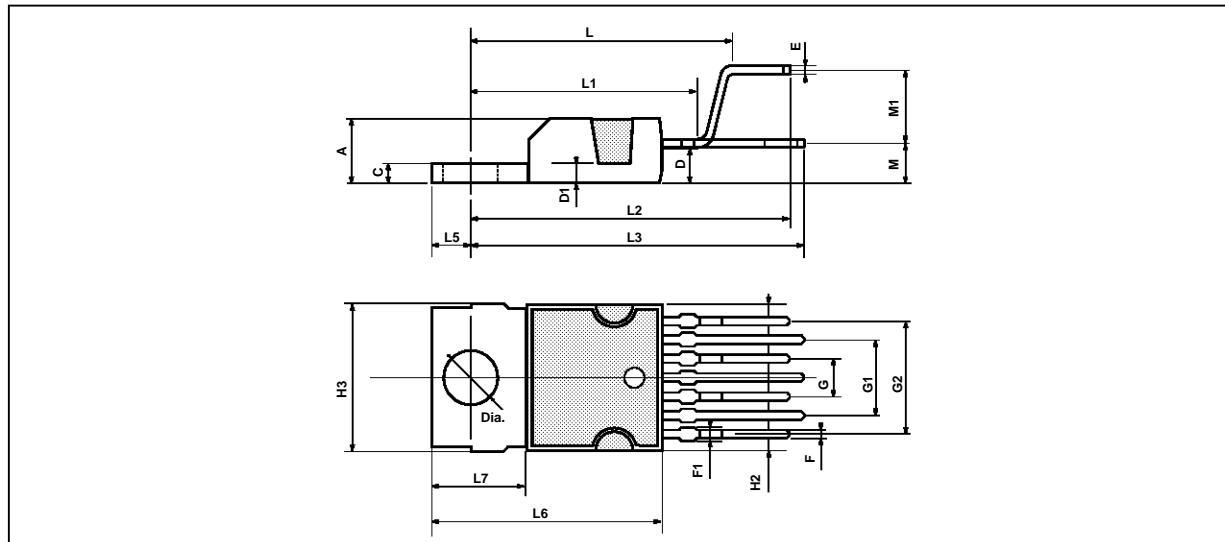
**Figure 1 :** Output Transistors SOA  
(for secondary breakdown)



**Figure 2 :** Secondary Breakdown Temperature Derating Curve  
(ISB = secondary breakdown current)



## PACKAGE MECHANICAL DATA : 7 PINS - PLASTIC HEPTAWAT



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.6		08	0.024		0.031
F1			0.9			0.035
G	2.41	2.54	2.67	0.095	0.100	0.105
G1	4.91	5.08	5.21	0.193	0.200	0.205
G2	7.49	7.62	7.8	0.295	0.300	0.307
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L		16.97			0.668	
L1		14.92			0.587	
L2		21.54			0.848	
L3		22.62			0.891	
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
M		2.8			0.110	
M1		5.08			0.200	
Dia.	3.65		3.85	0.144		0.152

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