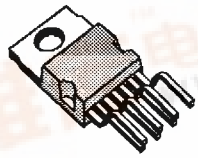
SGS-THOMSON MICROELECTRONICS

STV9378F

VERTICAL DEFLECTION BOOSTER

ADVANCE DATA

- POWER AMPLIFIER
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.0A$_{PP}$
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE
- EXTERNAL FLYBACK SUPPLY



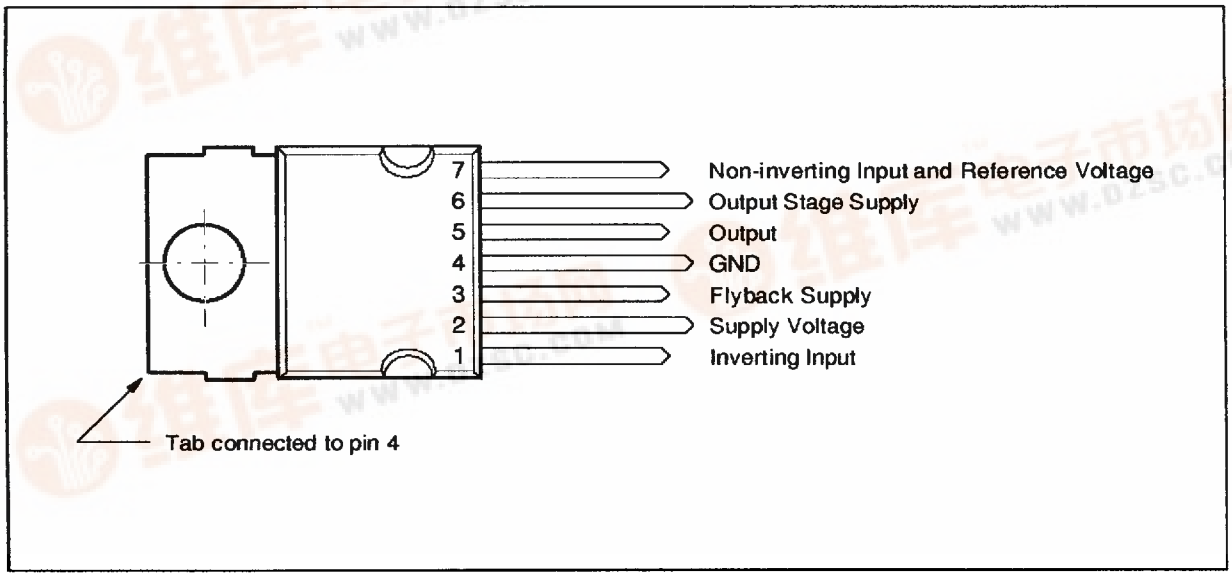
HEPTAWATT
(Plastic Package)

ORDER CODE : STV9378F

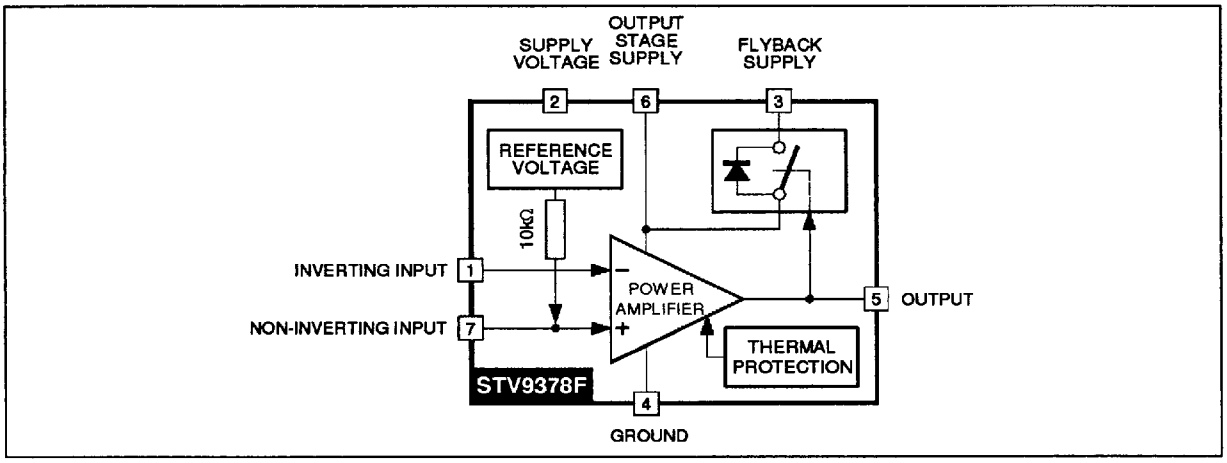
DESCRIPTION

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 2App output current to drive the yoke.
The STV9378F is offered in HEPTAWATT package.

PIN CONNECTIONS



BLOCK DIAGRAM



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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

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Notes : 1. Versus GND.
2. The output current can reach 4A peak for t ≤ 10µs (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
ΔT_t	Hysteresis on T_t		10	°C
T_{jr}	Recommended Max. Junction Temperature		120	°C

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ELECTRICAL CHARACTERISTICS

(V_S = 42V, T_A = 25°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	µA
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/°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

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APPLICATION CIRCUIT

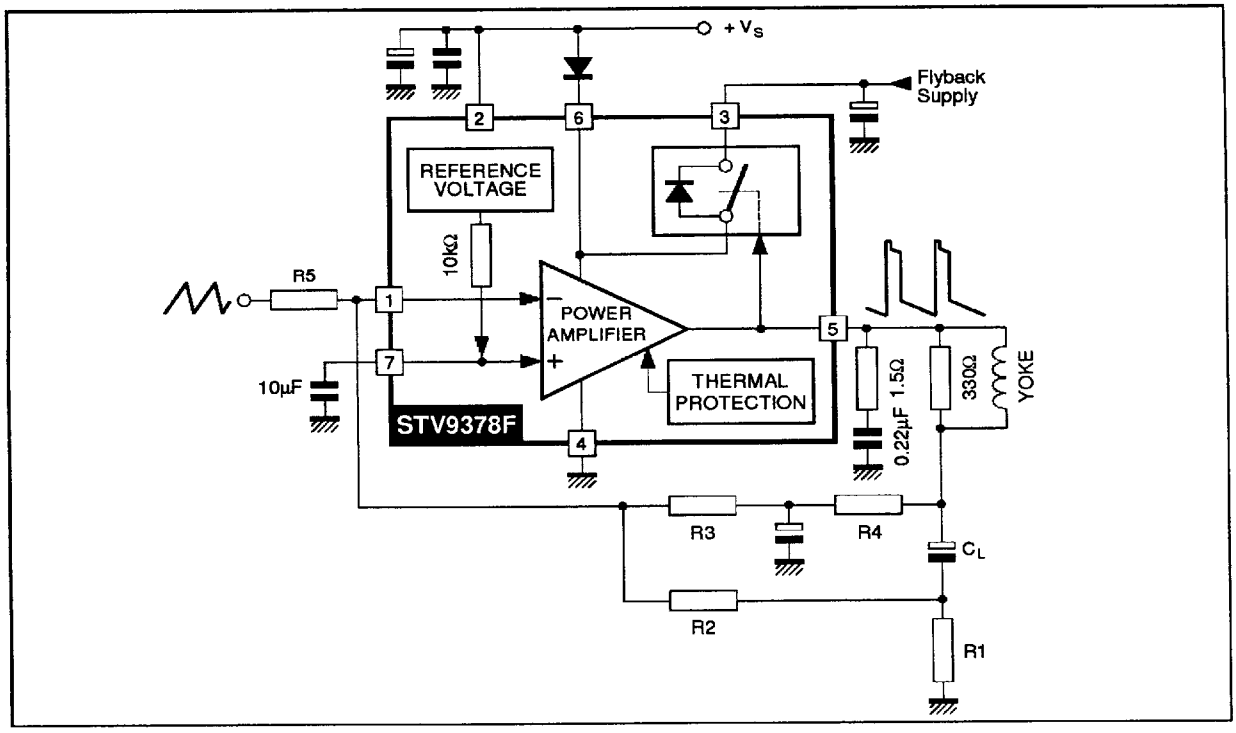

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Figure 1 : Output Transistors SOA (for secondary breakdown)

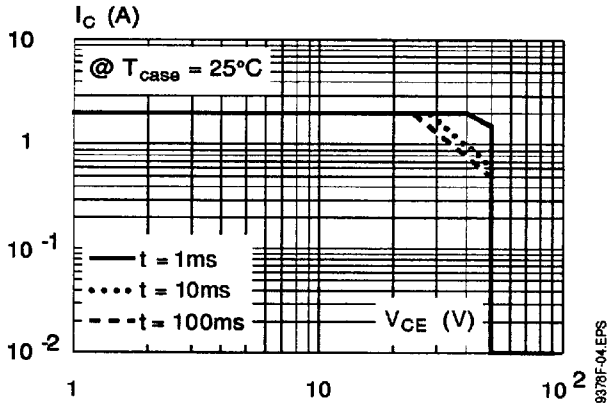
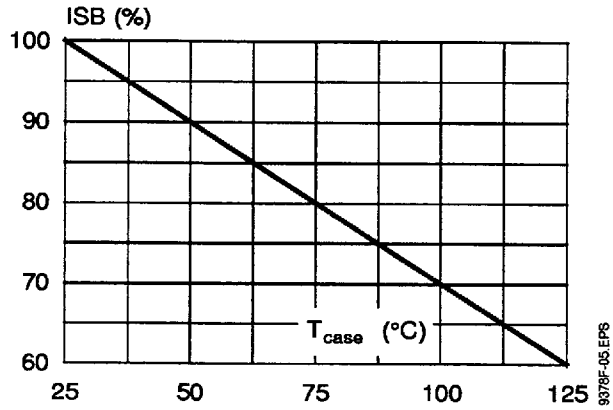
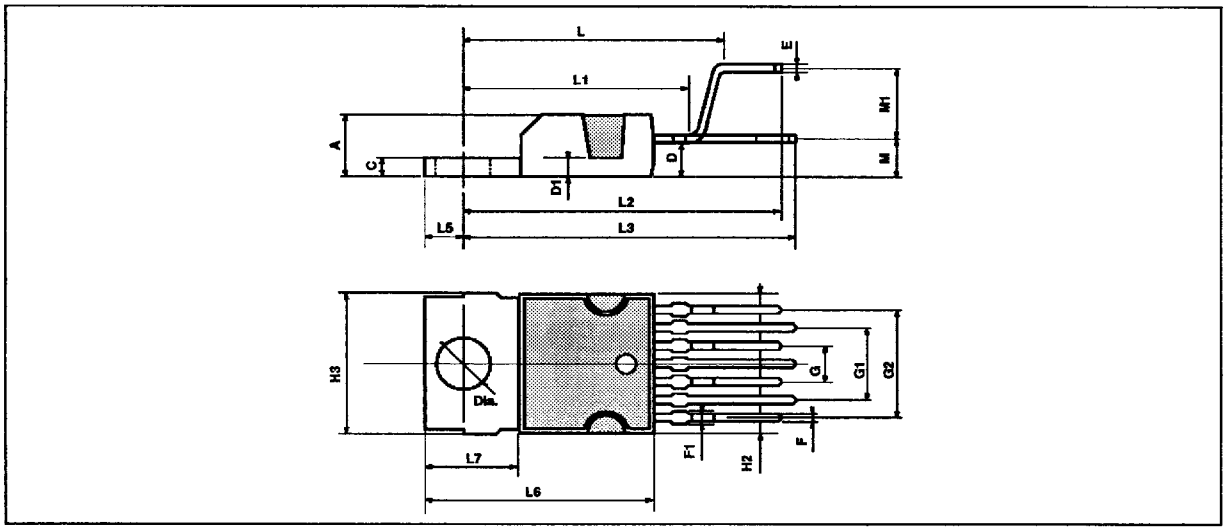


Figure 2 : Secondary Breakdown Temperature Derating Curve (ISB = secondary breakdown current)



PACKAGE MECHANICAL DATA : 7 PINS - PLASTIC HEPTAWAT



PM-HEPTV.EPS

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

HEPTV.TBL