STBV68

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

- MEDIUM VOLTAGE CAPABILITY
- LOW SPREAD OF DYNAMIC PARAMETERS
- MINIMUM LOT-TO-LOT SPREAD FOR RELIABLE OPERATION
- VERY HIGH SWITCHING SPEED

APPLICATIONS:

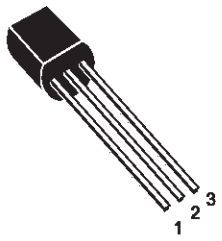
- ELECTRONIC BALLASTS FOR FLUORESCENT LIGHTING

DESCRIPTION

The device is manufactured using high voltage Multi Epitaxial Planar technology for high switching speeds and medium voltage capability.

It uses a Cellular Emitter structure with planar edge termination to enhance switching speeds while maintaining the wide RBSOA.

The STBV68 is designed for use in compact fluorescent lamp application.



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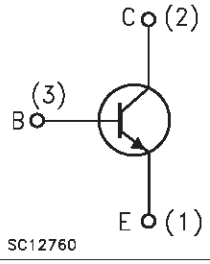
INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage (V_{BE} = 0)	600	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	400	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	9	V
I_C	Collector Current	0.6	A
I_{CM}	Collector Peak Current (t_p < 5 ms)	1.2	A
I_B	Base Current	0.3	A
I_{BM}	Base Peak Current (t_p < 5 ms)	0.6	A
P_{tot}	Total Dissipation at T_{amb} = 25 °C	0.9	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

THERMAL DATA

$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	140	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cut-off Current (V_{BE} = -1.5 V)	V_{CE} = 600 V				250	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{BE} = 9 V				1	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 1 mA	L = 25mH	400			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 0.1 A I_C = 0.15 A I_C = 0.25 A	I_B = 20 mA I_B = 50 mA I_B = 100 mA		0.35 0.8 3.0	0.75 1.5 5	V V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 0.1 A I_C = 0.15 A	I_B = 20 mA I_B = 50 mA			1.0 1.2	V V
h_{FE}*	DC Current Gain	I_C = 0.1 A I_C = 0.25 A	V_{CE} = 5 V V_{CE} = 10 V	7 3		15 6	
t_f	INDUCTIVE LOAD Fall Time	I_C = 0.1 A I_{B1} = - I_{B2} = 20 mA	V_{clamp} = 300 V L =3 mH		0.3		µs

* Pulsed: Pulse duration = 300µs, duty cycle = 1.5 %

TO-92 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.58		5.33	0.180		0.210
B	4.45		5.2	0.175		0.204
C	3.2		4.2	0.126		0.165
D	12.7			0.500		
E		1.27			0.050	
F	0.4		0.51	0.016		0.020
G	0.35			0.14