STF42

SMALL SIGNAL NPN TRANSISTOR

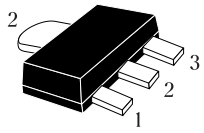
PRELIMINARY DATA

Type	Marking
STF42	642

- SILICON EPITAXIAL PLANAR NPN HIGH VOLTAGE TRANSISTOR
- MINIATURE SOT-89 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE PNP COMPLEMENTARY TYPE IS STF92

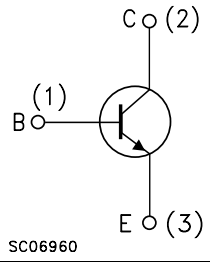
APPLICATIONS

- VIDEO AMPLIFIER CIRCUITS (RGB CATHODE CURRENT CONTROL)
- TELEPHONE WIRELINE INTERFACE (HOOK SWITCHES, DIALER CIRCUITS)



SOT-89

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	300	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	300	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	0.1	A
I_{CM}	Collector Peak Current	0.2	A
P_{tot}	Total Dissipation at T_C = 25 °C	1.3	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	96.1	$^oC/W$

• Device mounted on a PCB area of 1 cm^2

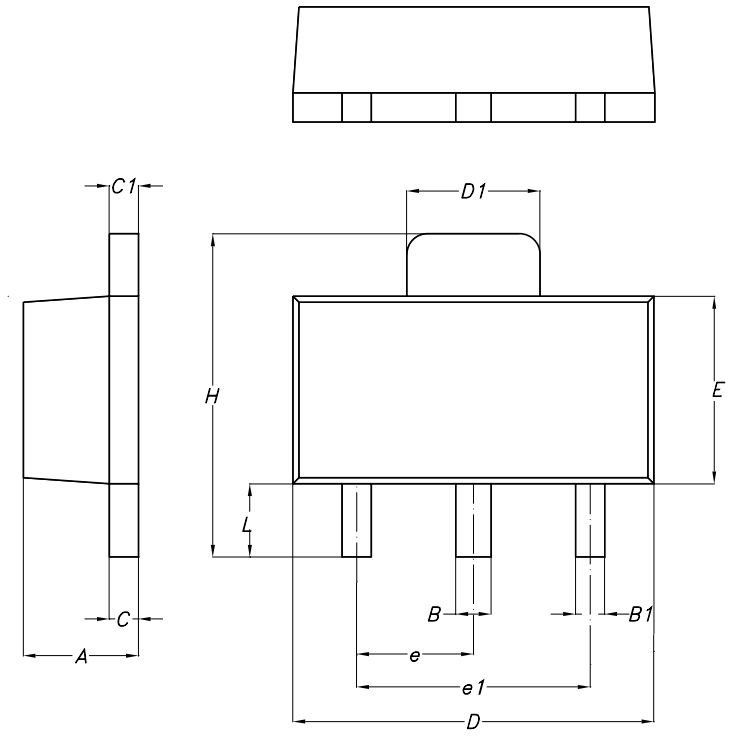
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 200 V V_{CB} = 200 V T_C = 150 ^oC V_{CB} = 300 V			10 10 100	nA µA µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			50	nA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_E = 0)	I_C = 100 µA	300			V
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	300			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = 100 µA	5			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 30 mA I_B = 5 mA			0.6	V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 30 mA I_B = 5 mA			1.2	V
h_{FE}*	DC Current Gain	I_C = 30 mA V_{CE} = 10 V	75			
f_T	Transition Frequency	I_C = 15 mA V_{CE} = 10 V f = 20 MHz	60			MHz
C_{CBO}	Collector-Base Capacitance	I_E = 0 V_{CB} = 10 V f = 1 MHz		6		pF
C_{EBO}	Emitter-Base Capacitance	I_C = 0 V_{EB} = 2 V f = 1 MHz		22		pF

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

SOT-89 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	1.4		1.6	55.1		63.0
B	0.44		0.56	17.3		22.0
B1	0.36		0.48	14.2		18.9
C	0.35		0.44	13.8		17.3
C1	0.35		0.44	13.8		17.3
D	4.4		4.6	173.2		181.1
D1	1.62		1.83	63.8		72.0
E	2.29		2.6	90.2		102.4
e	1.42		1.57	55.9		61.8
e1	2.92		3.07	115.0		120.9
H	3.94		4.25	155.1		167.3
L	0.89		1.2	35.0		47.2



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