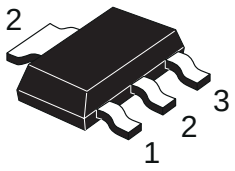
STF715
STN715

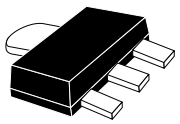
NPN MEDIUM POWER TRANSISTORS

Type	Marking
STF715	715
STN715	N715

- SURFACE-MOUNTING DEVICES IN MEDIUM POWER SOT-223 AND SOT-89 PACKAGES
- AVAILABLE IN TAPE & REEL PACKING



SOT-223

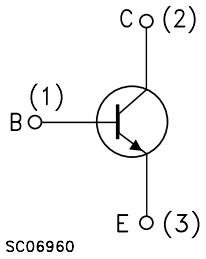


SOT-89

APPLICATIONS
- VOLTAGE REGULATION
- RELAY DRIVER
- GENERIC SWITCH

DECRIPTION
The STF715 and STN715 are NPN transistors manufactured using Planar Technology resulting in rugged high performance devices.

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value		Unit
		Devices	STN715	STF715	
		Packages	SOT-223	SOT-89	
V_{CBO}	Collector-Base Voltage (I_E = 0)		140		V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		80		V
V_{EBO}	Emitter-Base Voltage (I_C = 0)		5		V
I_C	Collector Current		1.5		A
I_{CM}	Collector Peak Current (t_p < 5 ms)		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_c = 25 °C		1.6	1.4	W
T_{stg}	Storage Temperature		-65 to 150		°C
T_j	Max. Operating Junction Temperature		150		°C

THERMAL DATA

			SOT-223	SOT-89	
$R_{thj\text{-}amb}$ •	Thermal Resistance Junction-ambient	Max	78	89	°C/W

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

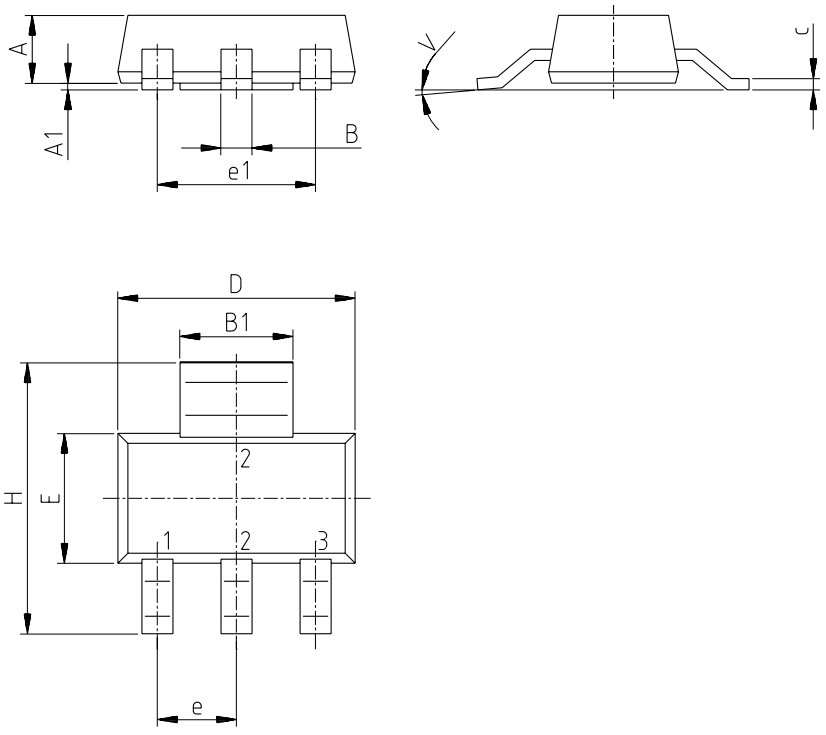
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = 140 V			500	µA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 80 V			1	mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			100	µA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 10 mA	80			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 100 mA I_B = 10 mA I_C = 1 A I_B = 100 mA			0.25 0.5	V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 100 mA I_B = 10 mA I_C = 1 A I_B = 100 mA			1 1.1	V V
h_{FE}*	DC Current Gain	I_C = 100 mA V_{CE} = 2 V I_C = 500 mA V_{CE} = 2 V I_C = 1 A V_{CE} = 2 V	140 80 40			
f_T	Transition Frequency	I_C = 0.1 A V_{CE} = 10 V		50		MHz

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

SOT-223 MECHANICAL DATA

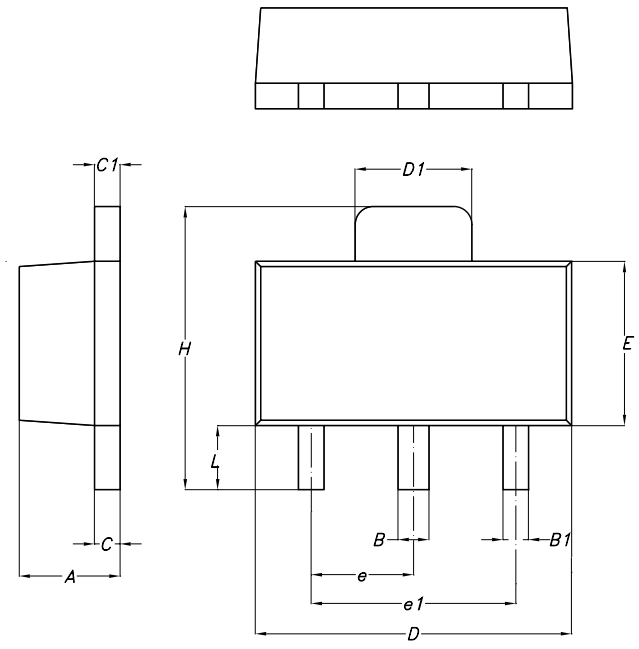
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276	0.287
V			10^o			10^o
A1		0.02				



P008B

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



P025H