

NPN MEDIUM POWER TRANSISTORS

Type	Marking
STF715	715
STN715	N715

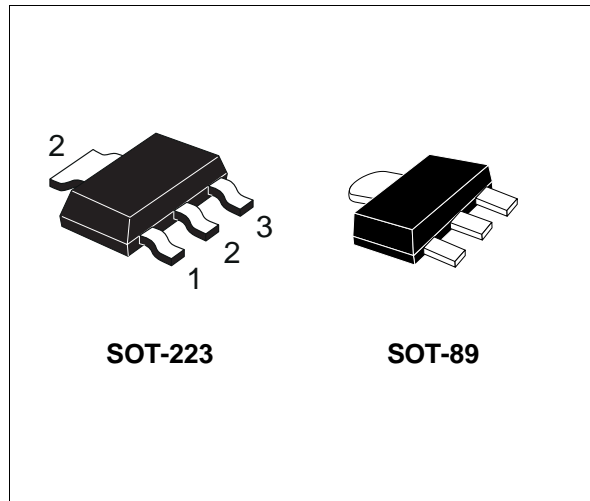
- SURFACE-MOUNTING DEVICES IN MEDIUM POWER SOT-223 AND SOT-89 PACKAGES
- AVAILABLE IN TAPE & REEL PACKING

APPLICATIONS

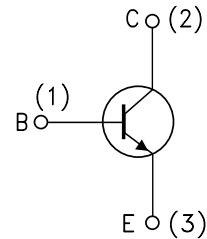
- VOLTAGE REGULATION
- RELAY DRIVER
- GENERIC SWITCH

DESCRIPTION

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



INTERNAL SCHEMATIC DIAGRAM



SC06960

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	

STF715 - STN715

THERMAL DATA

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

• Device mounted on a PCB area of 1 cm².

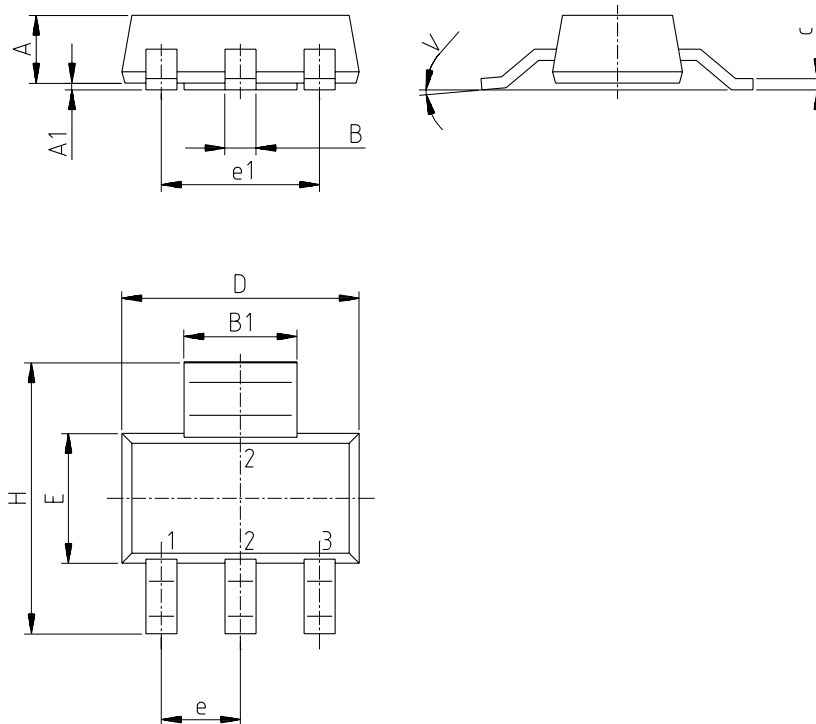
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 _C = 1 A	I _B = 10 mA I _B = 100 mA			0.25 0.5	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 100 mA I _C = 1 A	I _B = 10 mA I _B = 100 mA			1 1.1	V V
h _{FE} *	DC Current Gain	I _C = 100 mA I _C = 500 mA I _C = 1 A	V _{CE} = 2 V V _{CE} = 2 V 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

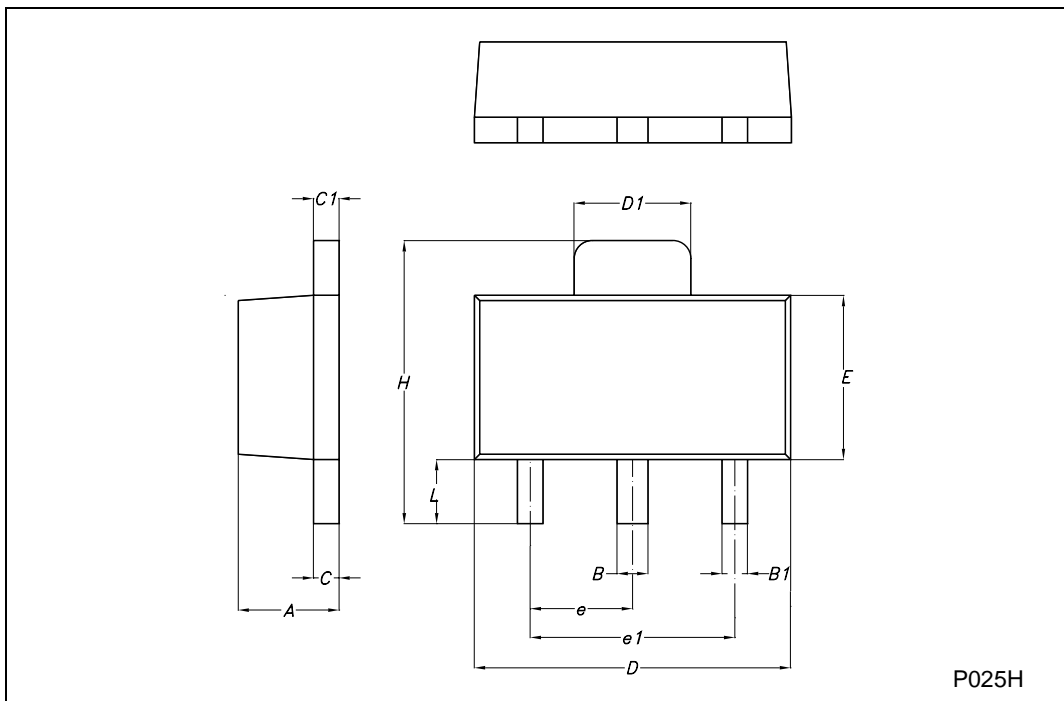
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276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



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