



## NPN MEDIUM POWER TRANSISTOR

Type	Marking
STX715	X715

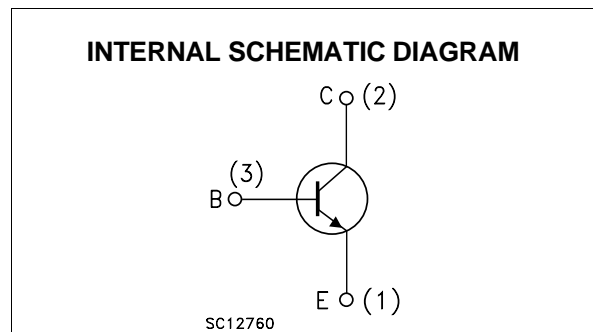
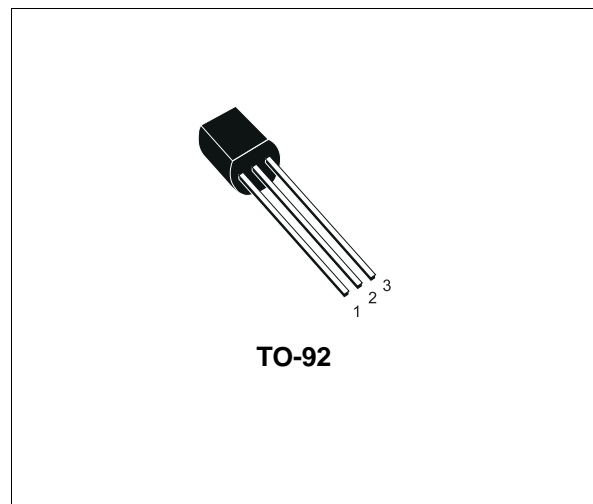
- DEVICE SUITABLE FOR THROUGH-HOLE PCB ASSEMBLY

### APPLICATIONS

- VOLTAGE REGULATION
- RELAY DRIVER
- GENERIC SWITCH

### DESCRIPTION

The STX715 is a NPN transistor manufactured using Planar Technology resulting in rugged high performance devices.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	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 $T_{amb} = 25$ °C	0.9	W
$T_{stg}$	Storage Temperature	-65 to 150	°C
$T_j$	Max. Operating Junction Temperature	150	°C

## STX715

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	44.6	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	139	°C/W

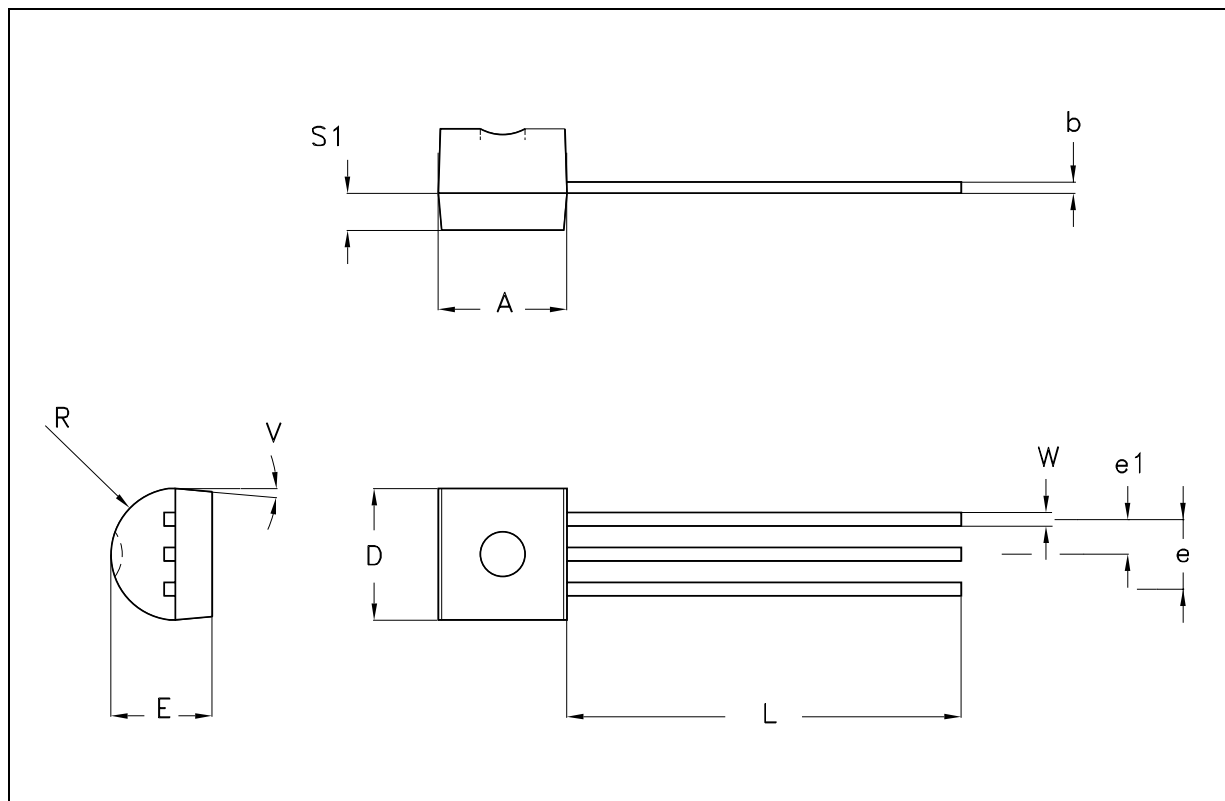
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = 140 V			500	μA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 80 V			1	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			100	μA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	80			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 100 mA I <sub>C</sub> = 1 A	I <sub>B</sub> = 10 mA I <sub>B</sub> = 100 mA		0.25 0.5	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 100 mA I <sub>C</sub> = 1 A	I <sub>B</sub> = 10 mA I <sub>B</sub> = 100 mA		1 1.1	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 100 mA I <sub>C</sub> = 500 mA I <sub>C</sub> = 1 A	V <sub>CE</sub> = 2 V V <sub>CE</sub> = 2 V V <sub>CE</sub> = 2 V	140 80 40		
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 0.1 A	V <sub>CE</sub> = 10 V		50	MHz

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

## TO-92 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.32		4.95	0.170		0.195
b	0.36		0.51	0.014		0.020
D	4.45		4.95	0.175		0.194
E	3.30		3.94	0.130		0.155
e	2.41		2.67	0.095		0.105
e1	1.14		1.40	0.045		0.055
L	12.70		15.49	0.500		0.609
R	2.16		2.41	0.085		0.094
S1	1.14		1.52	0.045		0.059
W	0.41		0.56	0.016		0.022
V	4 degree		6 degree	4 degree		6 degree



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