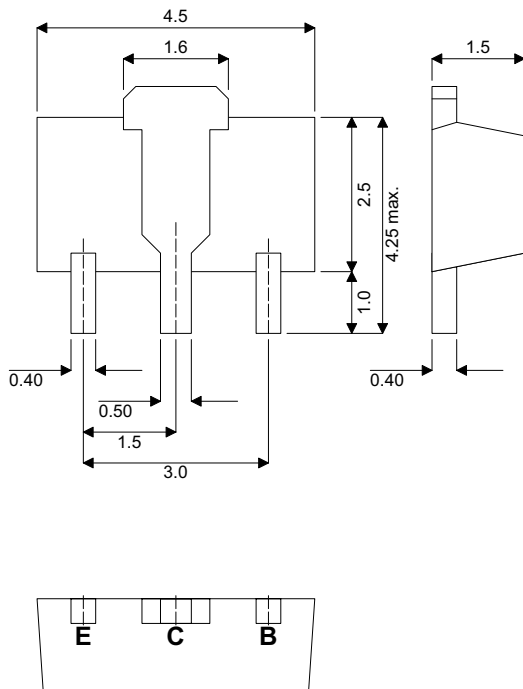


**MECHANICAL DATA**  
Dimensions in mm



**SOT89**

**NPN/PNP EPITAXIAL PLANAR  
SILICON TRANSISTOR**

**Ideal For High current Switching  
Application**

**FEATURES**

- LOW  $V_{CE(SAT)}$
- HIGH CURRENT CAPACITY AND WIDE ASO
- FAST SWITCHING SPEED

**APPLICATIONS**

- VOLTAGE REGULATORS
- RELAY DRIVERS
- LAMP DRIVERS
- ELECTRICAL EQUIPMENT

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

	<b>BCU86</b>	<b>BCU87</b>
$V_{CBO}$ Collector – Base voltage	60V	– 60V
$V_{CEO}$ Collector – Emitter voltage ( $I_B = 0$ )	50V	– 50V
$V_{EBO}$ Emitter – Base voltage	6V	– 6V
$I_C$ Collector current	3A	– 3A
$I_{CP}$ Collector Current (Pulse)	6A	– 6A
$P_C$ Collector Dissipation (Mounted on Ceramic Board (250mm <sup>2</sup> x 0.8mm))	500mW	
$T_j$ Junction Temperature	150°C	
$T_{stg}$ Storage Temperature	–55 to 150°C	

**DYNAMICS CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit.
$V_{(BR)CEO}$ Collector – Emitter Base Breakdown Voltage	$I_C = 1mA$ <b>BCU86</b> $R_{BE} = 0$	50			V
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = 10\mu A$ <b>BCU86</b> $I_E = 0$	60			V
$V_{(BR)EBO}$ Emitter Base Breakdown Voltage	$I_C = 0$ <b>BCU86</b> $I_E = 10\mu A$	6			V
$I_{CBO}$ Collector Cut-Off Current	$V_{CB} = 40V$ <b>BCU86</b> $I_E = 0$			1	$\mu A$
$I_{EBO}$ Emitter Cut-Off Current	$V_{BE} = 4V$ <b>BCU86</b> $I_C = 0$			1	$\mu A$
$h_{FE1}^*$ DC Current Gain	$V_{CE} = 2V$ <b>BCU86</b> $I_C = 100mA$	100*		560*	—
$h_{FE2}^*$ DC Current Gain	$V_{CE} = 2V$ <b>BCU86</b> $I_C = 3A$	35			—
$f_T$ Transition frequency	$V_{CE} = 10V$ <b>BCU86</b> $I_C = 50mA$		150		MHz
$C_{ob}$ Output Capacitance	$V_{CB} = 10V$ <b>BCU86</b> $f = 1MHz$		25		pF
$t_{on}$ Turn – On Time	See specified test circuit <b>BCU86</b>		70		ns
$t_{stg}$ Storage Time	See specified test circuit <b>BCU86</b>		650		
$t_f$ Fall Time	See specified test circuit <b>BCU86</b>		35		

\* Pulse test  $t_p = 300\mu s$ ,  $\delta \leq 2\%$

**Reverse Polarity for PNP**

\* The BCU86 / BCU87 are classified by 100mA  $h_{FE}$  as follows:

100 R 200    140 S 280    200 T 400    280 U 560

