

X00114



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# 2N5095 AND 2N5097

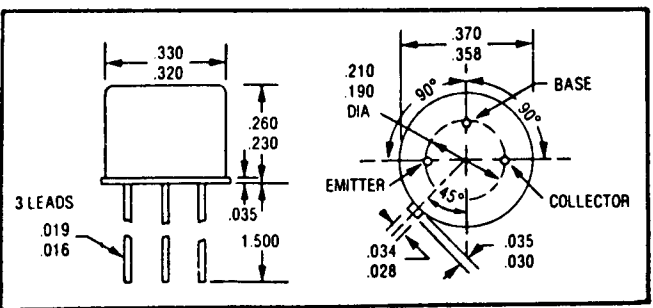
## 1 AMP

### HIGH VOLTAGE NPN TRANSISTOR

### 500-600 VOLTS

**CASE STYLE W**  
**JEDEC TO-5**

**FEATURES**



- BV<sub>CEO</sub> TO 450 VOLTS
- LOW SATURATION VOLTAGE
- VERY LOW LEAKAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH 2N5094 AND 2N5096
- 2N5092 ALSO AVAILABLE

**MAXIMUM RATINGS**

Rating	Symbol	2N5095	2N5097	Unit
Collector - Emitter Voltage	V <sub>CEO</sub>	400	450	Volts
R <sub>BE</sub> = 1 K Ohms	V <sub>CER</sub>	500	600	Volts
Collector - Base Voltage	V <sub>CBO</sub>	500	600	Volts
Emitter - Base Voltage	V <sub>EBO</sub>	6.0		Volts
Collector Current	I <sub>C</sub>	1.0		Amps
Base Current	I <sub>B</sub>	0.5		Amps
Total Device Dissipation @ TC = 100°C	P <sub>D</sub>	2		Watts
Derate above 100 °C		20		mW/°C
Operating and Storage Temperature	T <sub>j</sub> , T <sub>stg</sub>	-65 to +200		°C

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	50	°C/W

**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I <sub>C</sub> = 50 mA <sub>dc</sub> )	BV <sub>CEO</sub> *	400 450		V <sub>dc</sub>
(I <sub>C</sub> = 100 uA <sub>dc</sub> , R <sub>BE</sub> = 1K Ohms)	BV <sub>CER</sub> *	500 600		V <sub>dc</sub>
Collector - Base Breakdown Voltage (I <sub>C</sub> = 100 uA <sub>dc</sub> )	BV <sub>CBO</sub>	500 600		V <sub>dc</sub>
Emitter - Base Breakdown Voltage (I <sub>E</sub> = 20 uA <sub>dc</sub> )	BV <sub>EBO</sub>	6		V <sub>dc</sub>

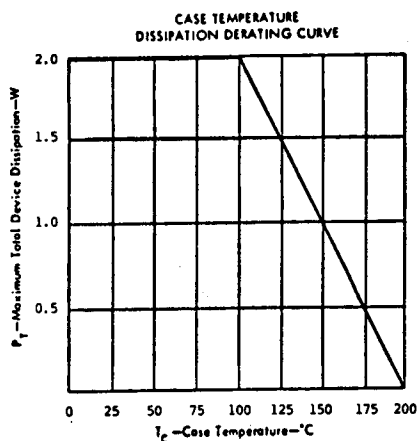
NOTE: All specifications subject to change without notice.

# ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current 2N5095 $V_{CB} = 400 \text{ Vdc}$ 2N5097 $V_{CB} = 500 \text{ Vdc}$	$I_{CBO}$		500	nAdc
Emitter Cutoff Current ( $V_{EB} = 4 \text{ Vdc}$ )	$I_{EBO}$		250	nAdc
DC Current Gain* ( $I_C = 1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 25 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}$ ) ( $I_C = 100 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}$ )	$h_{FE}^*$	25 50 15	250 300 250	
Collector - Emitter Saturation Voltage* ( $I_C = 25 \text{ mAdc}, I_B = 2.5 \text{ mAdc}$ )	$V_{CE(SAT)}^*$		0.5	Vdc
Base - Emitter Voltage* ( $I_C = 25 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}$ )	$V_{BE(ON)}^*$		1.0	Vdc
Current - Gain - Bandwidth Product ( $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 20 \text{ MHz}$ )	$f_T$	25		MHz
Output Capacitance ( $V_{CB} = 15 \text{ Vdc}, I_E = 0, f = 2 \text{ MHz}$ )	$C_{ob}$		15	pf
Delay Time ( $V_{CC} = 125 \text{ Vdc}$ )	$t_d$		200	ns
Rise Time	$t_r$		1200	ns
Storage Time	$t_s$		3.0	us
Fall Time ( $I_{B1} = I_{B2} = 10 \text{ mAdc}$ )	$t_f$		800	ns

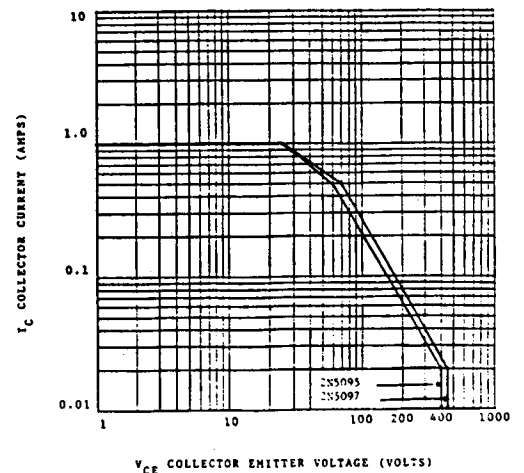
\*Pulse Test: Pulse width = 300 us, DutyCycle = 2%

## TYPICAL OPERATING CURVES



## FORWARD BIAS DC SAFE OPERATION AREA (S.O.A.) CURVE

CURVES APPLY BELOW RATED  $V_{CEO}$   $T_C = 25^\circ\text{C}$



# SSD II SOLID STATE DEVICES, INC.