

# Silicon PNP Darlington Transistor

## **MJ2501**

Power Linear and Switching

80V / 10A

# DATASHEET

from

[www.web-bcs.com](http://www.web-bcs.com)

OEM –SGS Ates

Source: SGS Ates Databook 1977

MJ 2500  
 MJ 2501  
 MJ 3000  
 MJ 3001

# EPITAXIAL-BASE NPN/PNP

## PRELIMINARY DATA

### COMPLEMENTARY POWER DARLINGTONS

The MJ 2500, MJ 2501, MJ 3000 and MJ 3001 are silicon epitaxial-base transistors in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications. The PNP types are the MJ 2500 and MJ 2501 and the ir complementary NPN types are the MJ 3000 and MJ 3001 respectively.

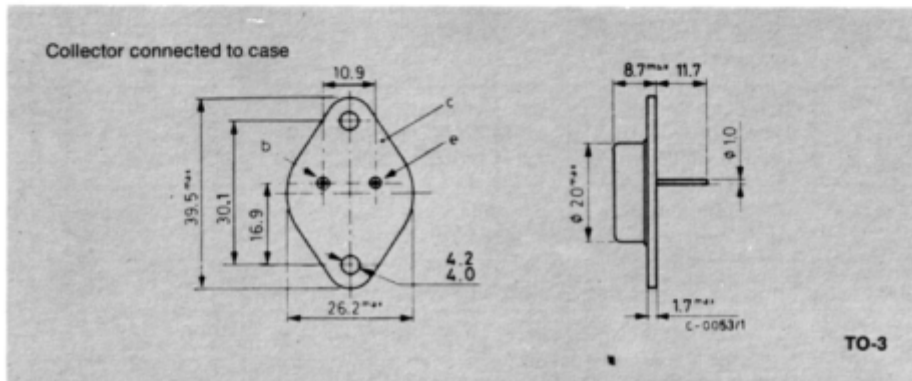
### ABSOLUTE MAXIMUM RATINGS

	PNP*	MJ2500	MJ2501
		MJ3000	MJ3001
$V_{CBO}$	Collector-base voltage ( $I_E = 0$ )	60V	80V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	60V	80V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	5V	
$I_C$	Collector current	10A	
$I_B$	Base current	0.2A	
$P_{tot}$	Total power dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	150W	
$T_{stg}$	Storage temperature	-65 to 200 °C	
$T_J$	Junction temperature	200 °C	

\* For PNP types voltage and current values are negative

### MECHANICAL DATA

Dimensions in mm





### THERMAL DATA

$R_{th \text{ j-case}}$	Thermal resistance junction-case	max	1.17	°C/W
-------------------------	----------------------------------	-----	------	------

### ELECTRICAL CHARACTERISTICS ° ( $T_{case} = 25 \text{ °C}$ unless otherwise specified)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
$I_{CER}$ Collector cutoff current ( $R_{BE} = 1k\Omega$ )	for <b>MJ2500</b> and <b>MJ3000</b> $V_{CE} = 60 \text{ V}$			1	mA
	for <b>MJ2501</b> and <b>MJ3001</b> $V_{CE} = 80 \text{ V}$			1	mA
	for <b>MJ2500</b> and <b>MJ3000</b> $V_{CE} = 60 \text{ V}$			5	mA
	for <b>MJ2501</b> and <b>MJ3001</b> $V_{CE} = 80 \text{ V}$			5	mA
$I_{CEO}$ Collector cutoff current ( $I_B = 0$ )	for <b>MJ2500</b> and <b>MJ3000</b> $V_{CE} = 30 \text{ V}$			1	mA
	for <b>MJ2501</b> and <b>MJ3001</b> $V_{CE} = 40 \text{ V}$			1	mA
$I_{EBO}$ Emitter cutoff current ( $I_C = 0$ )	$V_{EB} = 5 \text{ V}$			2	mA
$V_{CEO(sus)}$ * Collector-emitter sustaining voltage ( $I_B = 0$ )	$I_C = 100\text{mA}$ for <b>MJ2500</b> and <b>MJ3000</b> for <b>MJ2501</b> and <b>MJ3001</b>	60			V
		80			V
$V_{CE(sat)}$ * Collector-emitter saturation voltage	$I_C = 5 \text{ A}$ $I_B = 20\text{mA}$			2	V
	$I_C = 10 \text{ A}$ $I_B = 50\text{mA}$			4	V
$V_{BE}$ * Base-emitter voltage	$I_C = 5 \text{ A}$ $V_{CE} = 3 \text{ V}$			3	V
$h_{FE}$ * DC current gain	$I_C = 5 \text{ A}$ $V_{CE} = 3 \text{ V}$	1000			—

\* Pulsed: pulse duration = 300  $\mu\text{s}$ , duty cycle = 1.5%

° For PNP types current and voltage values are negative