

# MJ2501 MJ3001

# COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP NPN DEVICES

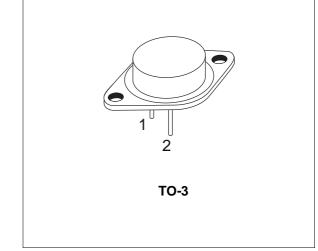
### APPLICATION

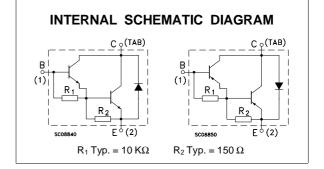
- AUDIO POWER AMPLIFIER
- DC-AC CONVERTER
- EASY DRIVER FOR LOW VOLTAGE DC MOTOR
- GENERAL POWER SWITCHING

#### DESCRIPTION

The MJ2501 is a Silicon Epitaxial-Base PNP power transistors in monolithic Darlington configuration, mounted in Jedec TO-3 metal case. It is intented for use in power linear and switching applications.

The complementary NPN type is the MJ3001.





#### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		PNP	MJ2501	
		NPN	MJ3001	
Vсво	Collector-base Voltage (I <sub>E</sub> = 0)		80	V
V <sub>CEO</sub>	Collector-emitter Voltage (I <sub>B</sub> = 0)		80	
V <sub>EBO</sub>	Emitter-base Voltage $(I_C = 0)$		5	V
Ιc	Collector Current		10	A
IB	Base Current		0.2	Α
Ptot	Total Dissipation at $T_c \le 25 \ ^{\circ}C$		150	W
T <sub>stg</sub>	Storage Temperature		-65 to 200	°C
Tj	Max. Operating Junction Temperature		200	

For PNP types voltage and current values are negative.

### THERMAL DATA

## **ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25 \ ^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
ICER	Collector Cut-off Current ( $R_{BE} = 1 \text{ K}\Omega$ )	$V_{CE} = 80 V$ T <sub>case</sub> = 150 °C V <sub>CE</sub> = 80 V				1 5	mA mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 30 V V <sub>CE</sub> = 30 V V <sub>CE</sub> = 40 V				1 1	mA mA
I <sub>EBO</sub>	Emitter Cut-off Current $(I_C = 0)$	V <sub>EB</sub> = 5 V				2	mA
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA		80			V
V <sub>CE(sat)</sub> *	Collector-emitter Saturation Voltage	Ic = 5 A Ic = 10 A	I <sub>B</sub> = 20 mA I <sub>B</sub> = 50 mA			2 4	V V
V <sub>BE</sub> *	Base-emitter Voltage	I <sub>C</sub> = 5 A	$V_{CE} = 3 V$			3	V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 5 A	$V_{CE} = 3 V$	1000			

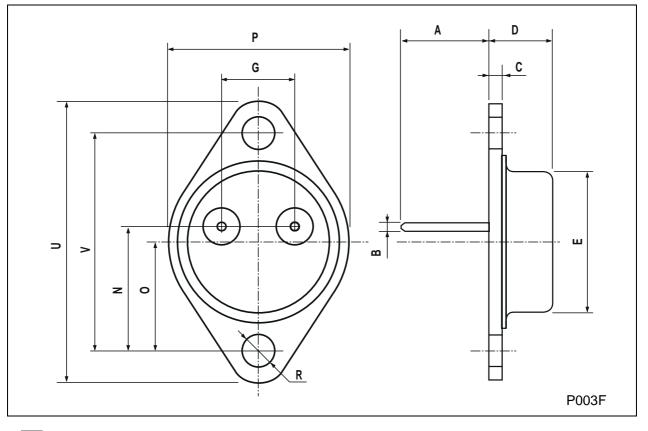
\* Pulsed: Pulse duration =  $300 \ \mu$ s, duty cycle 1.5 % For PNP types voltage and current values are negative.



## MJ2501 / MJ3001

# **TO-3 MECHANICAL DATA**

DIM.	mm		inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	11.00		13.10	0.433		0.516
В	0.97		1.15	0.038		0.045
С	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
Р	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



**\$7** 

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