Silicon NPN Darlington Transistor

MJ3001

Power Linear and Switching

80V / 10A

DATASHEET

from

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.

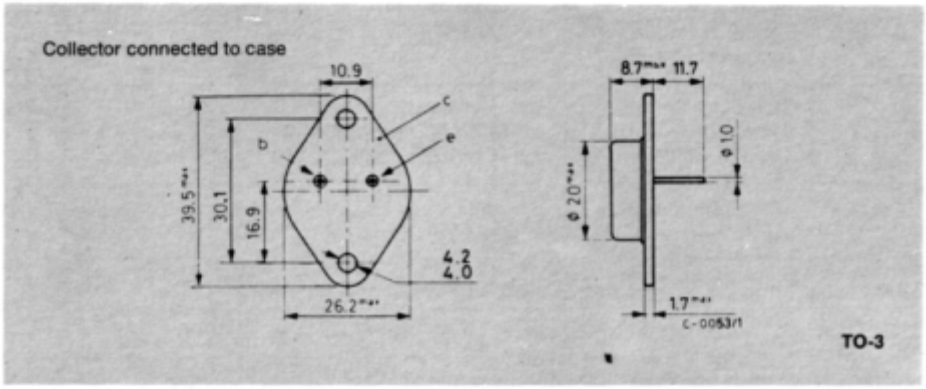
ABSOLUTE MAXIMUM RATINGS

		PNP°	MJ2500	MJ2501
		NPN	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 $T_{case} \leq 25$ °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



MJ 2500
MJ 2501
MJ 3000
MJ 3001

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS ° (T_{case} = 25 °C unless otherwise specified)

	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector cutoff current (R_{BE} = 1kΩ)	for **MJ2500** and **MJ3000** V_{CE} = 60 V			1	mA
		for **MJ2501** and **MJ3001** V_{CE} = 80 V			1	mA
		T_{case} = 150°C for **MJ2500** and **MJ3000** V_{CE} = 60 V			5	mA
		for **MJ2501** and **MJ3001** V_{CE} = 80 V			5	mA
I_{CEO}	Collector cutoff current (I_B = 0)	for **MJ2500** and **MJ3000** V_{CE} = 30 V			1	mA
		for **MJ2501** and **MJ3001** V_{CE} = 40 V			1	mA
I_{EBO}	Emitter cutoff current (I_C = 0)	V_{EB} = 5 V			2	mA
$V_{CEO\ (sus)}$*	Collector-emitter sustaining voltage (I_B = 0)	I_C = 100mA for **MJ2500** and **MJ3000**	60			V
		for **MJ2501** and **MJ3001**	80			V
$V_{CE\ (sat)}$*	Collector-emitter saturation voltage	I_C = 5 A I_B = 20mA			2	V
		I_C = 10 A I_B = 50mA			4	V
V_{BE}*	Base-emitter voltage	I_C = 5 A V_{CE} = 3 V			3	V
h_{FE}*	DC current gain	I_C = 5 A V_{CE} = 3 V	1000			—

* Pulsed: pulse duration = 300 μs, duty cycle = 1.5%
° For PNP types current and voltage values are negative