

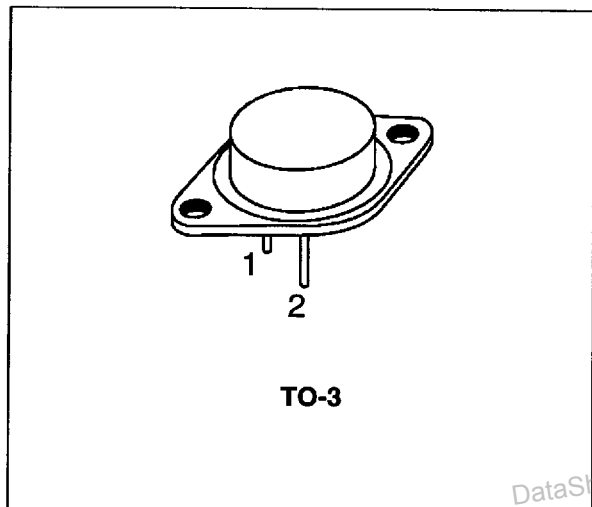
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- MJ2501 AND MJ3001 ARE SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

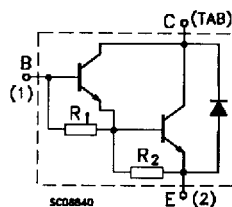
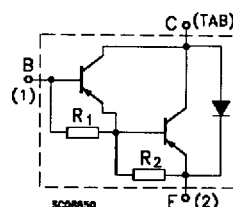
The MJ2500, and MJ2501 are silicon epitaxial-base PNP power transistors in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.

The complementary NPN types are the MJ3000 and MJ3001 respectively.



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INTERNAL SCHEMATIC DIAGRAM


 R_1 Typ. = 10 K Ω

 R_2 Typ. = 150 Ω

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit	
		PNP	MJ2500		MJ2501
		NPN	MJ3000	MJ3001	
V_{CBO}	Collector-base Voltage ($I_E = 0$)		60	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)		60	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)		5		V
I_C	Collector Current		10		A
I_B	Base Current		0.2		A
P_{tot}	Total Dissipation at $T_C \leq 25^\circ\text{C}$		150		W
T_{stg}	Storage Temperature		-65 to 200		$^\circ\text{C}$
T_j	Max. Operating Junction Temperature		200		$^\circ\text{C}$

For PNP types voltage and current values are negative.

MJ2500/MJ2501/MJ3000/MJ3001**THERMAL DATA**

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.17	$^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current ($R_{BE} = 1\text{ K}\Omega$)	for MJ2500 and MJ3000 $V_{CE} = 60\text{ V}$			1	mA
		for MJ2501 and MJ3001 $V_{CE} = 80\text{ V}$			1	mA
		$T_{case} = 150^{\circ}C$ for MJ2500 and MJ3000 $V_{CE} = 60\text{ V}$			5	mA
		for MJ2501 and MJ3001 $V_{CE} = 80\text{ V}$			5	mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	for MJ2500 and MJ3000 $V_{CE} = 30\text{ V}$			1	mA
		for MJ2501 and MJ3001 $V_{CE} = 40\text{ V}$			1	mA
I_{EBO}	Emitter Cut-off 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 MJ2500 and MJ3000 for MJ2501 and MJ3001	60 80			V 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 μs , duty cycle 1.5 %

For PNP types voltage and current values are negative.

TO-3 (H) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	

