SGS-THOMSON MICROELECTRONICS

MJ2500/MJ2501 MJ3000/MJ3001

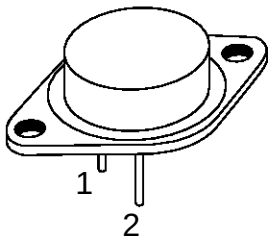
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- MJ2501 AND MJ3001 ARE SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

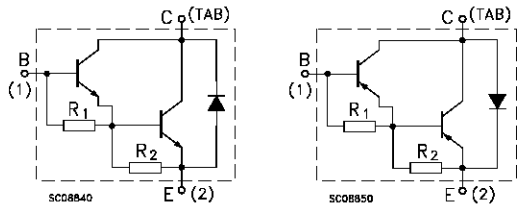
The MJ2500, and MJ2501 are silicon epitaxial-base PNP power transistors in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case. They are intented for use in power linear and switching applications.

The complementary NPN types are the MJ3000 and MJ3001 respectively.



TO-3

INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 10 KΩ 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 $T_c \leq 25\ ^oC$		150		W
T_{stg}	Storage Temperature		-65 to 200		^oC
T_j	Max. Operating Junction Temperature		200		^oC

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.17	$^oC/W$

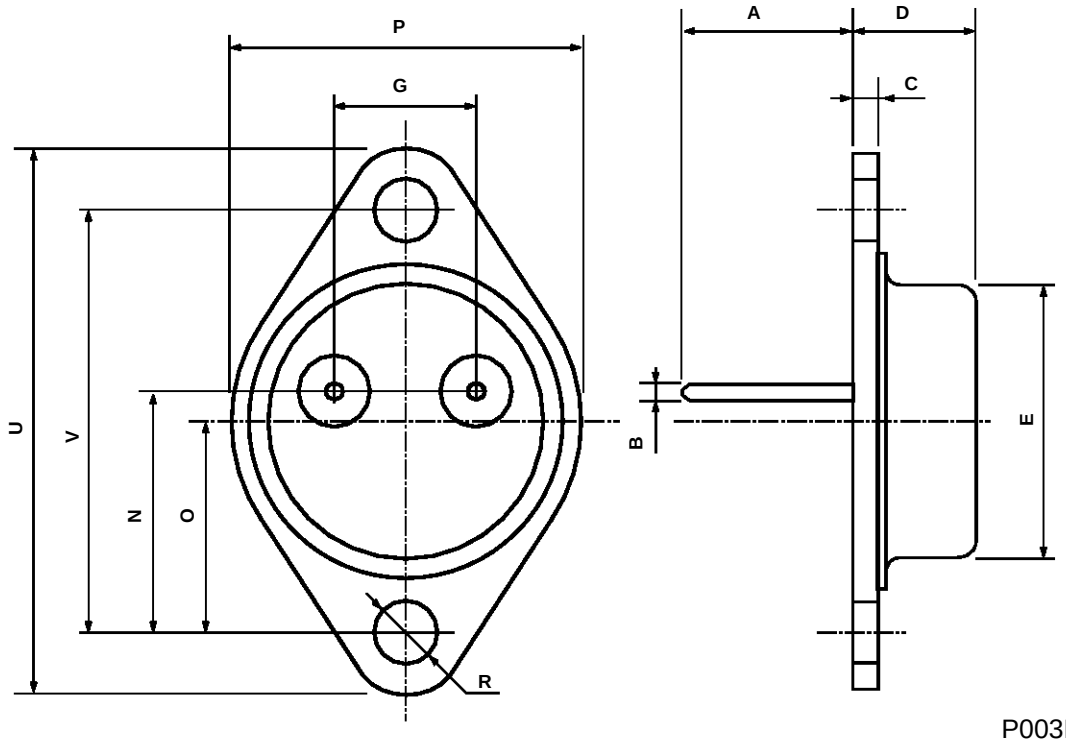
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current (R_{BE} = 1 KΩ)	for **MJ2500 and MJ3000** V_{CE} = 60 V for **MJ2501 and MJ3001** V_{CE} = 80 V T_{case} = 150 ^oC for **MJ2500 and MJ3000** V_{CE} = 60 V for **MJ2501 and MJ3001** V_{CE} = 80 V			 1 1 5 5	 mA mA mA mA
I_{CEO}	Collector Cut-off Current (I_B = 0)	for **MJ2500 and MJ3000** V_{CE} = 30 V for **MJ2501 and MJ3001** V_{CE} = 40 V			 1 1	 mA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			2	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 100 mA for **MJ2500 and MJ3000** for **MJ2501 and MJ3001**	 60 80			 V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 5 A I_B = 20 mA I_C = 10 A I_B = 50 mA			2 4	V 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 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	



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