

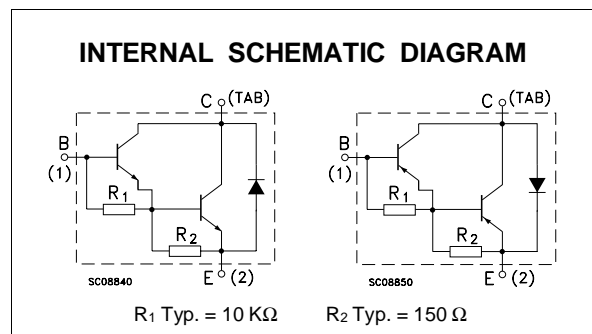
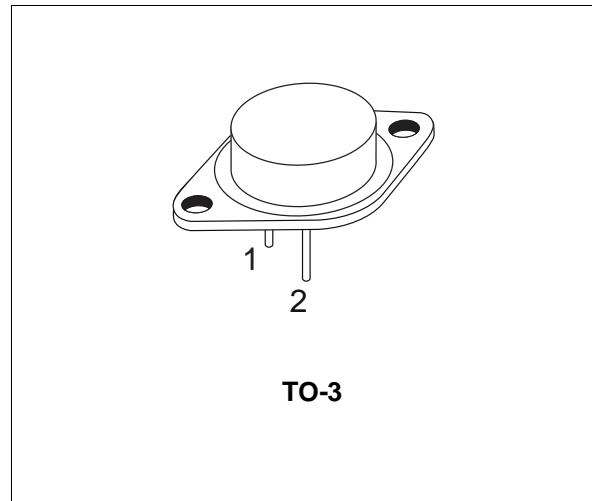
## COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

**DESCRIPTION**

The MJ2501 is a silicon epitaxial-base PNP power transistors in monolithic Darlingtion configuration and are mounted in Jedec TO-3 metal case. They are intended 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	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )		80	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )		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 $T_c \leq 25^\circ C$		150	W
$T_{stg}$	Storage Temperature		-65 to 200	$^\circ C$
$T_j$	Max. Operating Junction Temperature		200	$^\circ C$

For PNP types voltage and current values are negative.

**THERMAL DATA**

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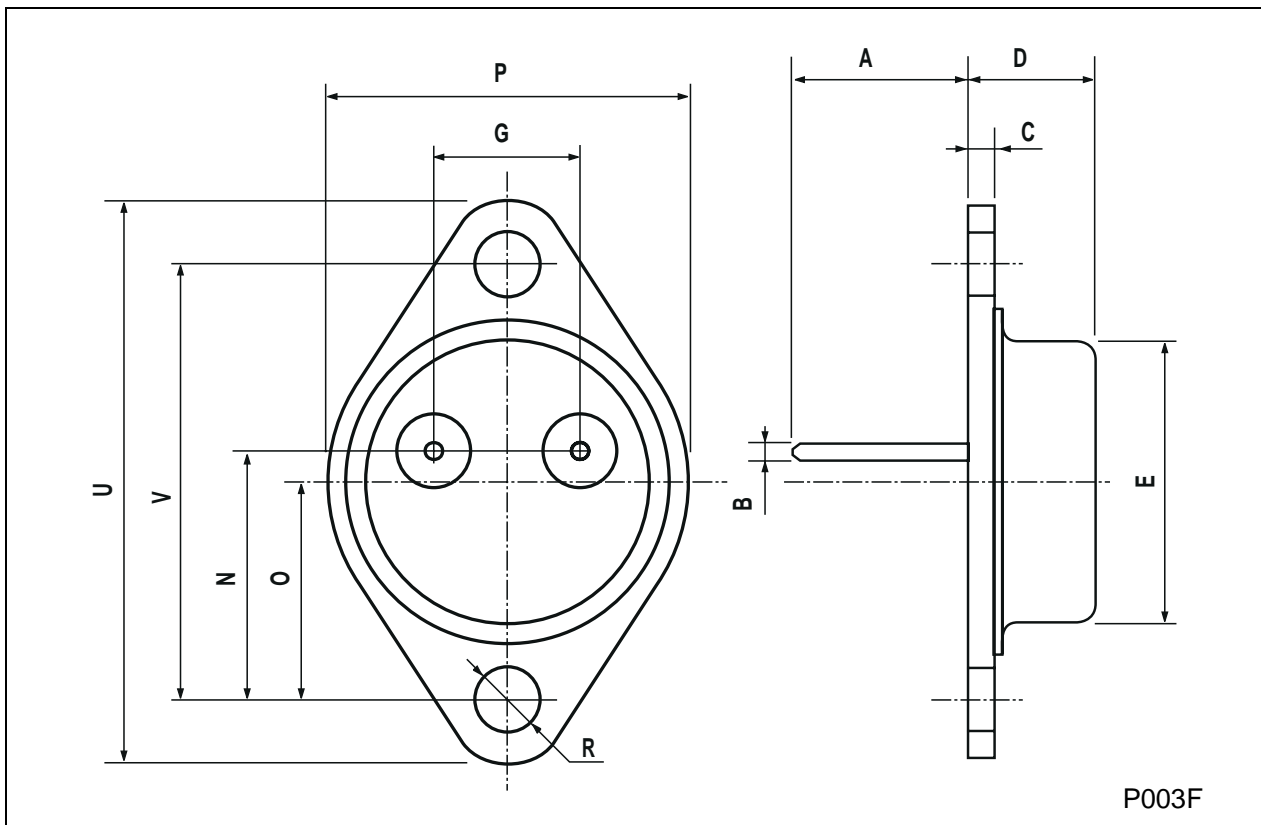
**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CER}$	Collector Cut-off Current ( $R_{BE} = 1\text{ K}\Omega$ )	$V_{CE} = 80\text{ V}$ $T_{case} = 150^{\circ}C$ $V_{CE} = 80\text{ V}$			1	mA
					5	mA
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 30\text{ V}$ $V_{CE} = 40\text{ V}$			1 1	mA mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5\text{ V}$			2	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 100\text{ mA}$	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  $\mu s$ , duty cycle 1.5 %  
For PNP types voltage and current values are negative.

**TO-3 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	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
P	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



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