



MJ2500 - MJ2501 PNP
MJ3000 - MJ3001 NPN

SILICON EPITAXIAL-BASE DARLINGTON

The MJ2500, and MJ2501 are silicon epitaxial-base NPN 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 PNP types are the MJ3000 and MJ3001 respectively.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-Base Voltage	$I_E=0$	MJ2500 MJ3000	60	Vdc
			MJ2501 MJ3001	80	
V_{CEO}	Collector-Emitter Voltage	$I_B=0$	MJ2500 MJ3000	60	Vdc
			MJ2501 MJ3001	80	
V_{EBO}	Emitter-Base Voltage	$I_C=0$	MJ2500 MJ3000 MJ2501 MJ3001	5.0	Vdc
I_C	Collector Current		MJ2500 MJ3000 MJ2501 MJ3001	10	Adc

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Symbol	Ratings		Value	Unit
I_B	Base Current	MJ2500 MJ3000 MJ2501 MJ3001	0.2	Adc
P_T	Power Dissipation	@ $T_C < 25^\circ$ MJ2500 MJ3000 MJ2501 MJ3001	150	Watts
$T_J T_s$	Junction Storage Temperature	MJ2500 MJ3000 MJ2501 MJ3001	200 -65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	MJ2500 MJ3000 MJ2501 MJ3001	1.17	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

TC=25 $^\circ\text{C}$ unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage (*)	I _C =100 mAdc, I _B =0	MJ2500 MJ3000	60	-	-	Vdc
			MJ2501 MJ3001	80	-	-	

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Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
I _{CEO}	Collector Cutoff Current	V _{CE} =30 Vdc, I _B =0	MJ2500 MJ3000	-	-	1.0	mAdc
		V _{CE} =40 Vdc, I _B =0	MJ2501 MJ3001	-	-		
I _{EBO}	Emitter Cutoff Current	V _{BE} =5.0 Vdc, I _C =0	MJ2500 MJ2501 MJ3000 MJ3001	-	-	2.0	mAdc
I _{CER}	Collector-Emitter Leakage Current	V _{CB} =60 V, R _{BE} =1.0 k ohm	MJ2500 MJ3000	-	-	1.0	mAdc
		V _{CB} =80 V, R _{BE} =1.0 k ohm	MJ2501 MJ3001	-	-		
		V _{CB} =60 V, R _{BE} =1.0 k ohm, T _C =150°C	MJ2500 MJ3000	-	-	5.0	
		V _{CB} =80 V, R _{BE} =1.0 k ohm, T _C =150°C	MJ2501 MJ3001	-	-		
V _{CE(SAT)}	Collector-Emitter saturation Voltage (*)	I _C =5.0 A, I _B =20 mAdc	MJ2500 MJ3000 MJ2501 MJ3001	-	-	2.0	Vdc
		I _C =10 A, I _B =50 mAdc	MJ2500 MJ3000 MJ2501 MJ3001	-	-	4.0	
V _{BE}	Base-Emitter Voltage (*)	I _C =5.0 Adc, V _{CE} =3.0Vdc	MJ2500 MJ3000 MJ2501 MJ3001	-	-	3	V
h _{fe}	DC Current Gain (*)	V _{CE} =3.0 Vdc, I _C =5.0 Adc	MJ2500 MJ3000 MJ2501 MJ3001	1000	- -	- -	-

For PNP types current and voltage values are negative

(*) Pulse Width $\approx 300\text{ }\mu\text{s}$, Duty Cycle $\angle 2.0\%$

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MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16

Pin 1 :	Base
Pin 2 :	Collector
Case :	Emitter

