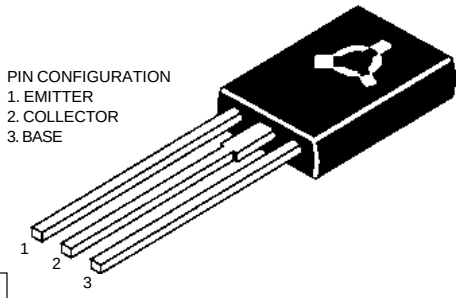
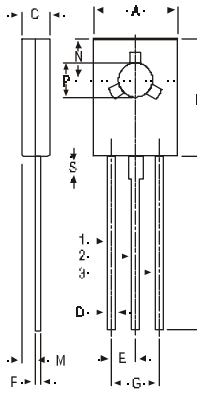
TO-126 (SOT-32) Plastic Package **MJE270, MJE271**

MJE270 *NPN PLASTIC POWER TRANSISTOR*
MJE271 *PNP PLASTIC POWER TRANSISTOR*
Medium Power ***Darlingtons*** *for Linear and Switching Applications*





DIM	MIN.	MAX.
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 TYP.	
F	0.49	0.75
G	4.5 TYP.	
L	15.7 TYP.	
M	1.27 TYP.	
N	3.75 TYP.	
P	3.0	3.2
S	2.5 TYP.	

ALL DIMENSIONS IN MM

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	V_{CBO}	*max.*	*100 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*100 V*
Collector current	I_C	*max.*	*2.0 A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*15 W*
Junction temperature	T_j	*max.*	*150 °C*
Collector-emitter saturation voltage			
I_C = 20 mA; I_B = 0.2 mA	V_{CEsat}	*max.*	*2.0 V*
D.C. current gain			
I_C = 20 mA; V_{CE} = 3 V	h_{FE}	*min.*	*500*

RATINGS *(at T_A=25°C unless otherwise specified)*
Limiting values

Collector-base voltage (open emitter)	V_{CBO}	*max.*	*100 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*100 V*

Emitter-base voltage (open collector)	V_{EBO}	*max.*	*5.0 V*
Collector current	I_C	*max.*	*2.0 A*
Collector current (peak)	I_C	*max.*	*4.0 A*
Base current	I_B	*max.*	*0.1 A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*15 W*
Derate above 25°C		*max.*	*0.12 W/°C*
Total power dissipation up to T_A = 25°C	P_{tot}	*max.*	*1.5 W*
Derate above 25°C		*max.*	*0.012 W/°C*
Junction temperature	T_j	*max.*	*150 °C*
Storage temperature	T_{stg}		*–65 to +150 °C*

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	*8.33 °C/W*
From junction to ambient	$R_{th\ j-a}$	*83.3 °C/W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

Collector cutoff current			
I_E = 0; V_{CB} = 100 V	I_{CBO}	*max.*	*0.3 mA*
I_B = 0; V_{CE} = 100 V	I_{CEO}	*max.*	*1.0 mA*
Emitter cut-off current			
I_C = 0; V_{EB} = 5 V	I_{EBO}	*max.*	*0.1 mA*
Breakdown voltages			
I_C = 10 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*100 V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*100 V*
I_E = 1 mA; I_C = 0	V_{EBO}	*min.*	*5 V*
Saturation voltages			
I_C = 20 mA; I_B = 0.2 mA	V_{CEsat}*	*max.*	*2.0 V*
I_C = 120 mA; I_B = 1.2 mA	V_{CEsat}*	*max.*	*3.0 V*
Base emitter on voltage			
I_C = 120 mA; V_{CE} = 10V	$V_{BE(on)}$*	*max.*	*2.0 V*
D.C. current gain			
I_C = 20 mA; V_{CE} = 3 V	h_{FE}*	*min.*	*500*
I_C = 120 mA; V_{CE} = 10 V	h_{FE}*	*min.*	*1500*
Transition frequency f = 1 MHz			
I_C = 0.05 A; V_{CE} = 5 V	$f_{T(1)}$	*min.*	*6.0 MHz*
Second Breakdown Collector			
Current with base Forward Biased			
V_{CE} = 40V; t = 1.0s; (non-repetitive)	$I_{S/b}$	*min.*	*375 mA*

(1) $f_T = |h_{fe}| \cdot f_{test}$

** Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%.*

Customer Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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