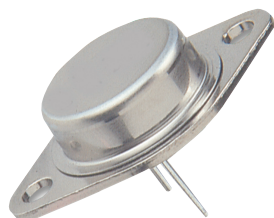


NPN Silicon Power Darlington Transistor

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Description

The MJ10005 is a NPN silicon Darlington Power Transistor, designed for use in high voltage, high speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications.

Features

- With TO-3 packaging
- Very high DC current gain
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

Applications

- Electronic ignition
- Alternator regulator
- Motor controls

Absolute Maximum Ratings (Ta=25°C)

Characteristic	Symbol	Values	Unit
Collector-Emitter Voltage	V _{CEO}	400	V
Collector-Base Voltage	V _{CBO}	500	
Emitter-Base Voltage	V _{EBO}	8	
Collector Current-Continuous	I _C	20	A
Collector Current-Peak	I _{CM}	30	
Base Current-Continuous	I _B	2.5	
Collector Power Dissipation	P _C	175	Watts
Max. Junction Temperature	T _J	200	°C
Storage Temperature Range	T _{STG}	-65 to +200	

Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	R _{th j-c}	1	°C/W

Electrical Characteristics (T_c = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
Off Characteristics				
Collector-Emitter Sustaining Voltage (I _C = 10mA, I _B = 0)	V _{CEO(SUS)}	400	-	V
Collector Cutoff Current (V _{CE} = 400 V, I _B = 0)	I _{CEO}	-	5	mA

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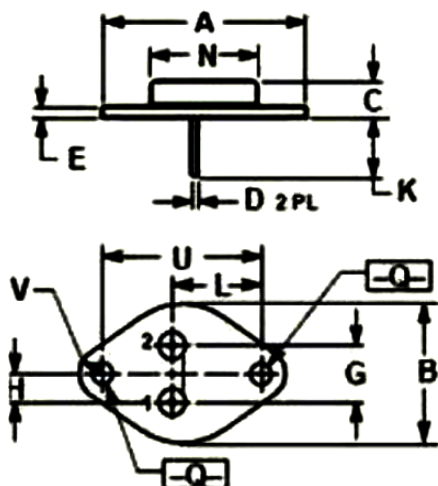
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Characteristic	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CB}= 400\text{ V}$, $I_E= 0$)	I_{CBO}	-	0.1	mA
Emitter Cutoff Current ($V_{EB}= 2\text{V}$, $I_C= 0$)	I_{EBO}	-	175	
On characteristics (1)				
DC Current Gain ($I_C= 5\text{A}$, $V_{CE}= 5\text{V}$) ($I_C= 10\text{A}$, $V_{CE}= 5\text{V}$)	h_{FE}	300 100	2000	
Collector-Emitter Saturation Voltage ($I_C= 10\text{A}$, $I_B= 400\text{mA}$) ($I_C= 20\text{A}$, $I_B= 2\text{A}$)	$V_{CE(sat)}$	-	1.9 3	V
Base-Emitter Saturation Voltage ($I_C= 10\text{A}$, $I_B= 400\text{mA}$) ($I_C= 10\text{A}$, $I_B= 400\text{mA}$; $T_c=100^{\circ}\text{C}$)	$V_{BE(sat)}$	-	2.5 2.5	

Diagram



DIM.	Min.	Max.
A	39	
B	25.2	26.67
C	8.3	8.9
D	1.45	1.6
E	1.5	1.7
G	11	
H	5.5	
K	10.5	13.5
L	16.75	17.05
N	19.4	19.62
O	4	4.2
U	29	31
V	4	4.2

Part Number Table

Description	Part Number
20A, Silicon Power Darlington Transistor, NPN, 400V, 175W	MJ10005

Dimensions : Millimetres

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