

Darlington Transistor TO-3

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Description:

The 2N6059 is a silicon epitaxial-base NPN transistors in monolithic darlington configuration in JEDEC TO-3 metal case. It is intended for use in power linear and low frequency switching applications

Applications:

Linear and switching industrial equipment

Features:

- High gain
- NPN darlington
- High current
- High dissipation
- Integrated antiparallel collector-emitter diode

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage ($I_E = 0$)	V_{CBO}	100	V
Collector-Emitter Voltage ($V_{BE} = -1.5V$)	V_{CEX}		
Collector-Emitter Voltage ($I_B = 0$)	V_{CEO}		
Emitter-Base Voltage ($I_C = 0$)	V_{EBO}	5	
Collector Current	I_C	12	A
Collector Peak Current ($t_p < 5ms$)	I_{CM}	20	
Base Current	I_B	0.2	
Total Dissipation at $T_c \leq 25^\circ C$	P_{tot}	150	W
Storage Temperature	T_{stg}	-65 to 200	$^\circ C$
Max. Operating Junction Temperature	T_j	200	

Thermal Data

Max. Thermal Resistance Junction-case	$R_{thj-case}$	1.17	$^\circ C/W$
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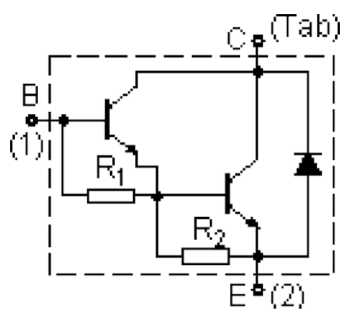
Electrical Characteristics

(T_{case} = 25°C unless otherwise specified)

Parameter	Test Conditions	Symbol	Min.	Max.	Unit
Collector Cut-off Current (V _{BE} = 1.5V)	V _{CE} = rated V _{CEX} V _{CE} = rated V _{CEX} T _C = 150°C	I _{CEX}	-	0.5 5	μA
Collector Cut-off Current (I _B = 0)	V _{CE} = 50V	I _{CEO}	-	1	
Emitter Cut-off Current (I _C = 0)	V _{EB} = 5V	I _{EBO}	-	2	
Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100mA	V _{CEO (sus)*}	100	-	V
Collector-Emitter Saturation Voltage	I _C = 6A I _B = 24mA I _C = 12A I _B = 120mA	V _{CE (sat)*}	-	2 3	
Base-Emitter Saturation Voltage	I _C = 12A I _B = 120mA	V _{BE (sat)*}	-	4	
Base-Emitter Voltage	I _C = 6A V _{CE} = 3V	V _{BE}	-	2.8	
DC Current Gain	I _C = 6A V _{CE} = 3V I _C = 12A V _{CE} = 3V	h _{FE} *	750 100	-	
Transition frequency	I _C = 5A V _{CE} = 3V f = 1MHz	f _T	4	-	MHz

*Pulsed: Pulse Duration = 300μs, Duty Cycle 1.5%

Internal Schematic Diagram

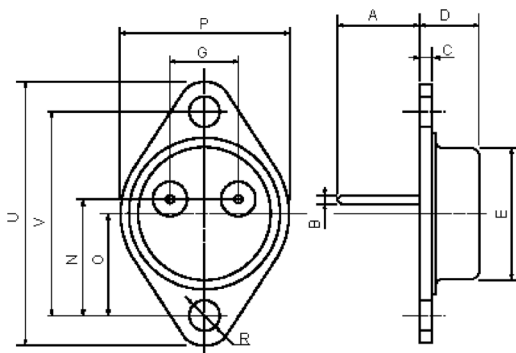


R₁ Typical = 6kΩ R₂ Typical = 55Ω

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Dimensions



TO-3 Mechanical Data

Dim.	Min.	Max.
A	11 (0.433)	13.1 (0.516)
B	0.97 (0.038)	1.15 (0.045)
C	1.5 (0.59)	1.65 (0.065)
D	8.32 (0.327)	8.92 (0.351)
E	19 (0.748)	20 (0.787)
G	10.7 (0.421)	11.1 (0.437)
N	16.5 (0.649)	17.2 (0.677)
P	25 (0.984)	26 (1.023)
R	4 (0.157)	4.09 (0.161)
U	38.5 (1.515)	39.3 (1.547)
V	30 (1.187)	30.3 (1.193)

Dimensions : Millimetres (Inches)

Part Number Table

Description	Part Number
Darlington Transistor, TO-3	2N6059

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